5-2022

Improving Patient Discharge in the Ambulatory Surgical Setting Utilizing a Preoperative Educational Video

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Date of Submission: April 11, 2022

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Abstract

Background: Use of ambulatory surgery centers providing outpatient surgical procedures has grown due to medical advances, short stays that reduce costs, and convenience for the patient. However, due to the reduced time between diagnosis and surgery, there is a decreased amount of time available for education and discharge teaching. Historically, discharge education is provided after surgery in written form while the effects of anesthesia and pain medication impair a patient's ability to retain information. This leads to increased reports of uncontrolled pain, poor comprehension, and higher rates of adverse events due to poor comprehension of discharge orders.

Methods: The development and implementation of a preoperative educational video was aimed at increasing the patient's perceived preparedness for discharge. This quality improvement project utilized a pre and post video questionnaire that was taken by the patient on arrival to the preoperative area and then after viewing the video prior to their surgical start time.

Results: There was an increase in the preparedness scores after the video, a reduction in length of stay in the discharge area, and a majority met or exceeded pain goal attainment at discharge.

Conclusion: If patients are prepared for surgery, recovery, and self-care, then they are less likely to need additional discharge time, incur adverse events, and they can return home with confidence. The use of technology to educate patients allows the patient to learn through visual and auditory channels, at their convenience, before and after discharge.

Keywords: Discharge teaching/education, preoperative instructions/education, video teaching, patient education/teaching, ambulatory care /same day surgery, discharge preparedness

Acknowledgements

I would like to offer my sincere thanks to those who assisted in the completion and success of this project including the SDS staff and management, Dr. Woods, Jade Burgess, and Gwen Eastep. Additionally, I would like to thank my DNP scholarly project committee Dr. Kippenbrock and Dr. Patton for their guidance, support, and mentorship throughout this journey. Finally, I would like to thank my family for their endless support that allowed me to pursue my dreams in my career. I could not have been successful without each of you.

Improving Patient Discharge in the Ambulatory Surgical Setting with a Preoperative Educational Video

This DNP project purpose was to investigate how the use of technology, specifically video education utilized in the preoperative setting, effects patient preparedness, pain goal achievement, and length of stay in the ambulatory surgical setting. More than 17.2 million surgical procedures are performed annually in the United States (Steiner et al., 2017). A growing number of surgeries are performed in an ambulatory care setting and lack long consultation time between diagnosis and procedure. This lack of time leads to a reduction in patient preparation for their procedure and discharge and can delay the patient returning home. Patients often lack understanding of surgical processes and recovery expectations when written discharge instructions are only given after the surgical procedure when they have a limited ability to comprehend complicated information due to the effects of general anesthesia (Kang et al., 2020). This can lead to higher rates of reported uncontrolled pain, poor comprehension of expected outcomes, increased phone calls to providers, and higher rates of adverse events due to poor understanding to discharge orders (Sheele et al., 2019). This project demonstrated that providing perioperative education in the form of a video improved patient's perception of preparedness for the recovery process and returning home.

Background and Significance

Transition of Care

Discharge is not the end of care, but rather a transition within the patient's healthcare pathway. This transition of care typically involves multiple facets that require a coordinated effort among multiple healthcare personnel. This inherent complexity has led to the viewpoint that the discharge process can be a highly vulnerable, high-risk point in the patients' healthcare

journey (Waring et al., 2014). The most effective tool to promote patient healing is an effective delivery of quality education and discharge instructions (Kang et al., 2018; Zebulon, 2020). However, the information presented to the patient on how to care for themselves at home varies widely, even within the same ambulatory surgical center (ASC) setting, and even for the same procedures. To date, nearly 20% of patients experience adverse events related to a lack of understand of discharge instructions (Kang et al., 2018). Adverse drug events are the most common post-discharge complication, with infections and procedural complications like uncontrolled pain close behind (Forster et al., 2003). Unplanned readmissions in the United States within 30 days of discharge account for more than $17 billion dollars in Medicare expenditures (Kang et al., 2020).

The Process of Discharge

Features of the ACS preoperative preparation and discharge process are often rushed in an effort to turn over beds and move patients through. Schooley et al. (2014), found that an average of seventy-six seconds was spent educating a patient. A recent survey found that 41% of patients could not state their diagnosis at discharge, 37% could not state the purpose of their medications, and 86% could not identify the side effects of their medications (Horstman et al., 2017). There has been a lack of research on both the quality of patient education and the timing of discharge education (Schooley et al., 2014).

To ensure patient comprehension of discharge instructions, a variety of teaching modalities should to be provided both pre and post-operatively (Wang et al, 2013). Literature has demonstrated that providing teaching in multimodal ways increases patient satisfaction and assists in setting realistic expectations (Wang et al, 2013). Improved comprehension of the surgical process, recovery, and how to care for oneself when home, along with adequate time to

discuss concerns reduces unplanned delays in discharge (Considine et al., 2019).

Reimbursement and Outcome Measures

In the ASC, patient satisfaction scores are measured using the Outpatient Ambulatory Surgery-Consumer Assessment of Healthcare Providers and Systems (OASCAHPS) survey developed by the Centers for Medicare & Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ). The OASCAHPS gives permission to a select number of venders to survey hospital outpatient departments (HOPD) and ASC. This survey tool can be used alone or augmented by an outside vendor like Press Ganey, with an additional 15 questions tailored to the specific hospital facility. These surveys are generally sent to the patient within 48-72 hours after discharge from their outpatient procedure. Designed to measure all aspects of care, the OAS-CAHPS survey contains 37 items divided into specific sections pertaining to satisfaction with education received prior to the procedure, facility and staff, communication, recovery, and the patient's overall experience (CMS, n.d.). This survey is the first standardized instrument for outpatient settings and is administered to all HOPD and all ASC nationwide that participate in Medicare (OASCAHPS, n.d.). While satisfaction scores in each category may be greater than 90% on returned surveys, it may still leave a facility in the lower half of rankings when compared with all patients. This clinical site utilizes Press Ganey in addition to the OASCAHPS standard questions. It has seen a trend of lower scores in the specific areas of pre-procedure information, recovery and discharge instruction, and concern and information on pain (Press Ganey, 2021).

Implemented in 2016, OAS CAHPS uses this information to quantify reimbursement rates (CMS, 2021). Both the Centers for Medicare & Medicaid Services and the National Committee on Quality Assurance require participating health systems to publicly report patient

satisfaction data, readmission rates, infections, and other outcome data (CMS, 2021). Higher patient experience scores are associated with increases in patient per day revenue and overall health system revenue (Betts et al., 2016). To minimize penalties, there is a trend towards improving the patient experience and improving quality of care. The more satisfied a patient is, the more adherent the patient is to physician recommendations, medication, and quality self-care (Logsdon et al., 2015; Świątoniowska-Lonc et al., 2020).

Discharge Policy and Standards

Discharge is significantly related to earnings per bed and gain or loss in survey scores can amount to a substantial loss monetarily for hospitals (Upadhyay et al., 2019). Thus, when patients judge their experiences, things they are surveyed on is their perception with the recovery and discharge process and the amount of information given. Globally, the World Health Organization (WHO) has listed unsafe healthcare practices, including the discharge process, as a recognized global challenge (WHO, 2016). The WHO suggested establishing universal criteria and protocols for improving the quality of discharge as one of several areas where changes could make large impacts in patient safety (WHO, 2016). Current United States regulatory guidelines state a patient must give informed consent and be discharged with written instructions (AMA, 2012). However, the laws and principles pertaining to informed consent and patient education do not specify the amount of information that must be disclosed, and are solely based on community disclosure standards, or what other surgeons would typically provide (AMA, 2012). The legal requirements include the condition being treated, the proposed treatment or surgical procedure, anticipated intervention results, alternative forms of treatment including non-treatment, and possible risks, complications, and anticipated benefits involved in the treatment or surgical procedure (AMA, 2012). There is no legal requirement or standard for the quality of discharge

education. Research demonstrates that what a patient receives is often poorly understood, missing information, and lacks opportunity for processing by the patient (Wischer, et al., 2018). By providing visual and/or video education preoperatively, research has shown improvement in patient knowledge, comprehension, satisfaction, and increased confidence in their ability to care for themselves at home (Wischer et al., 2018).

Enhancing knowledge to improve the practice of nursing and improve patient outcomes is part of the official DNP position statement (American Association of Colleges of Nursing, 2004, p. 4). Advanced practice nurses play a pivotal role in advocacy and education. The *Essentials of Doctoral Education for Advanced Nursing Practice* (American Association of Colleges of Nursing, 2006) defined advocacy as part of the core essentials for the advanced practice nurse. Other essentials list designing evidence-based interventions, collaborative knowledge-generating research, and synthesizing concepts to address gaps in healthcare (American Association of Colleges of Nursing, 2006). It is the role of the DNP to advocate for the patient with evidence based practices in all areas and policies within healthcare (American Association of Colleges of Nursing, 2006). While patient education and advocacy are domains within the registered nurses' and advanced practice nurse essentials, it is the DNP who should lead developing, coordinating, and championing research and the implementation of newer and more cost-effective ways to educate patients that lead to improved patient satisfaction and outcomes (Hanks et al., 2018). There is a lack of current research related specifically to the timing of education, comparison of education modalities, and standardized discharge education related to patient outcomes in the ASC. This is a valuable opportunity for the DNP to lead new research and advocate for the patient in the clinical setting by researching various teaching modalities and contributing to the design of effective teaching strategies in the ASC.

Technology

Approximately 85% of Americans use a smartphone (PewResearch, 2021). Reliance on smartphones for access to the internet is especially common among younger adults, lower-income Americans, and those with a high school education or less (PewResearch, 2021). Technology enables providers to reach those marginalized individuals and creates an enormous opportunity to enhance the accessibility and comprehension of healthcare in those vulnerable populations. The use of mobile applications, or mHealth, in health care is becoming more prevalent daily (Leavy, 2019). MHealth technology is defined by the WHO as medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistances and other wireless devices (WHO, 2011). It has the potential to provide a relatively low-cost way to bridge the gap between patients, their healthcare team, and knowledge. With the fast pace of the ASC setting, the use of standardized discharge teaching via videos has shown to be beneficial for patient comprehension and lower unexpected discharge delays, reduced phone calls to providers to clarify information, and improve patient satisfaction scores (Schooley, 2014). The use of technology to educate patients opens many new possibilities in the world of health care infomatics.

Discharge teaching that offers instruction in various learning modalities and supports patient and caregiver communication provided both pre and post-operatively is critical to improving the patient experience and reducing recovery complications (Alzahrani et al., 2021; Leavy, 2019). There is an opportunity to update the way in which discharge information is presented to the patient that can have a profound impact on a patient's comprehension, satisfaction, expectations, and preparedness for self-care.

Problem Statement

The problem statement for this DNP project is that despite the importance of instructions and education in the ASC population, it is routinely only given to the patient after a procedure and just prior to discharge in written form. At this time, patients are still under the effects of anesthesia and studies have demonstrated significant impairment to the cognitive and psychomotor performance after various types of anesthesia (Mashhour et al., 2021). Lack of education preoperatively about the process, recovery, expectations, and home self-care activities doesn't allow a patient to have a clear understanding of their procedure (Mashhour et al., 2021). This is particularly important in ASC setting where patients are discharged two to three hours after their procedure (Ip et al., 2009). The patient is often left with lingering questions that can effect satisfaction, recovery, and delay discharge (Newnham, 2017). This can lead to unrealistic expectations, higher rates of emergency room visits, increased phone calls to providers, and higher hospital readmission rates (Newnham, 2017). Therefore, it is critical that patients are provided with education delivered in various modalities at an optimal learning time.

Purpose Statement

The purpose statement for this DNP project was to determine whether pre-operative video education affects patient preparedness, pain goals and rating at discharge, and length of stay post-operatively in the ASC. Education provided pre-operatively allows the patient and the caregiver to view the material multiple times, discuss concepts and expectations with nurses and providers, and reduces barriers to learning. With a pre-operative educational video, the patient is able to view educational teaching at any point before their surgery, during their postoperative period, or after they are home. Information given when the patient is ready and able to learn may improve patient expectations reducing post-operative delays in discharge

(Newnham, 2017).

PICOT Question

In outpatient elective laparoscopic cholecystectomy surgical patients (P), how does a standardized pre-operative educational video (I) compared to the standard post-operative written discharge instruction (C), affect patient preparedness, length of stay, and pain goal attainment (O) at the time of discharge (T)?

Needs Assessment

Objective

The objective of this informal managerial approved needs assessment was to identify gaps in care and determine how to positively impact patient satisfaction at an ambulatory care center.

Participants

The participants in this Needs Assessment included a convenience sample of nurses in the pre-op, PACU and post-op areas, staff that has previously held leadership positions in the department, and community individuals who have previously undergone elective surgery.

Purpose of the Needs Assessment

A Needs Assessment was performed to identify gaps in care for the purpose of improving patient satisfaction. Determining areas in need of improvement was a vital step in creating an intervention to improve throughput and patient satisfaction. This DNP project aimed to increase patient knowledge, preparedness for discharge, and decrease the time a patient spends in the post-operative are by setting realistic expectations for the patient through education. The results of the needs assessment were used to create an intervention tailored to the needs of the patients and staff. Refer to Appendix E for the Global Aim Statement and Process Flowchart.

Data Collection

An assessment was conducted of the current policies and practices around surgical processes and flow of patients to identify a gap in care or area in need of improvement. This Needs Assessment utilized informal interviews to collect information about patient satisfaction scores, patient comments, staff concerns, and process flow. During the interviews, informal guided questions determined perceived areas in need of change, readiness for change, barriers to change, communication, barriers to communication, and previous efforts to create change. The information obtained was used to guide the research question and subsequent proposal design.

Sample, Sample Size, and Sampling Procedure

The sample of the informal managerial approved needs assessment individuals included, nurses in the pre-op, PACU and post-op areas, staff that has previously held leadership positions in the department, and community individuals who had previously had surgery. The sample size of the Needs Assessment was twelve participants, six nurses and staff and six former surgical patients. The sampling procedure was a convenience sample taken over a two week period.

Interview with the Key Informants

The informal verbal interviews ranged from five to fifteen minutes in length. Nursing staff identified a gap in care specifically in the education of patients being discharged. All nursing staff made the comment that it was difficult to convey important information to patient when they were still under the effects of anesthesia or in pain, and relying on an unknown caregiver to relay information to the patient left them uncertain if information would be passed along. Delays in discharge orders, making follow-up appointments, and lack of standardized education to send with the patients were additional problems expressed by nursing staff. They conveyed that discharge order vary widely in content even among similar procedures. The

procedure most cited by nursing staff having unrealistic expectation of their surgical procedure and lack of knowledge about what to expect post discharge was the laparoscopic cholecystectomy (LC) population. Management also identified breast surgeries that were discharged home along with the LC patients as having the most survey feedback in terms of knowledge deficits. All of the former surgical patients expressed the concern that they felt unsure of how to care for themselves at home in some capacity. They stated that most of the educational instructions they had to either retrieve from their caregiver or further contact the surgeon's office. Several staff and nursing leaders stated that laparoscopic surgeries and breast surgeries were the most difficult patients to discharge in a timely manner based on lack of prior education given to the patient and lack of information available at discharge. With a top box score of just 68.75% in the area of instructions regarding home care, 81.7% for nurses concern for comfort/pain, and 78.7% for information nurses gave to prepare for procedure, administration showed interest in creating an intervention to increase patient satisfaction in the area of discharge teaching and procedure and recovery expectations (Press Ganey, 2021). A top box score is the percentage of patients that gave the facility the top two highest marks for a particular question. This is ranked among similar hospitals that utilize the Press Ganey survey. When asked about barriers to improve the process, many stated that staffing, surgeon buy-in, and additional workload for nurses would be the biggest obstacles.

Needs Assessment Outcome

Based on feedback from various persons interviewed, the goal became to create a standardized patient educational intervention that would improve patient knowledge and comprehension about one particular surgical procedure and determine if increased patient preparation in the form of education would improve satisfaction and timely discharge from the

facility.

Length of stay post recovery was identified as an outcome measure that could be quantified as a correlation to recovery expectations and preparedness for discharge. A patient who is knowledgeable about their procedure and self-care prior to the surgery, is prepared to go home in a timely manner. Top box scores above 85% in response to survey questions relating to knowledge and satisfaction could be quantified by increased preparedness score on a pre/post-test survey. Achieving a pain score at discharge at or below a patient's pain goal was also identified as a measure of educating a patient about expectations for recovery. Since Press Ganey patient satisfaction scores cannot be broken down into specific surgical procedures and take three to six months to gather and report, these measures were chosen as items that could be quantified based on available data in this project timeline.

Two specific surgical procedures, breast procedures and laparoscopic cholecystectomies, were identified in the needs assessment based on managerial feedback from patient comments, as having lower satisfaction and lower comprehension of discharge instructions. Due to the larger LC population of patients, that procedure was chosen as the focus of this project because it would allow for a larger data set in the timeframe of this project.

Aim and Objectives

The specific aim of this DNP project was to evaluate the impact of pre-operative video education on the patient's preparedness, length of stay post-operatively, and pain score at the time of discharge. A pre-operative teaching video including basic procedure information, for example what to expect while recovering, how to care for yourself when at home, and what complications to report, was developed with the assistance of key stakeholders. This project utilized an expert panel including at least one surgeon, the nurse manager, and two staff nurses,

to write a script for the video and review and approve the video prior to implementation. Furthermore, the overriding goal of the pre-operative video was to facilitate improved patient knowledge and communication between the patient and health care team, with a goal of ultimately increasing long term patient satisfaction scores.

Objectives

1. To decrease the length of stay in the post-operative discharge area by 15%.
2. Achieve a 4-5 agree/strongly agree score on the Patient Preparedness Survey post video viewing by 85% of patients.
3. Achieve a pain score of less than 5 or at the patient's stated pain goal at discharge by 85% of patients.

Review of Literature

A systematic review of CINAHL complete, Medline Complete, EBSCO, and a web search was used to identify articles focused on video discharge instructions. Search terms *discharge education/discharge instruction/discharge planning, patient comprehension, technology, ambulatory surgery/outpatient surgery, length of stay, pain, and video* were used in a variety of combinations. A total of 212 various research designs were identified and all relevant studies published from 2015 through July 20, 2021 were examined. Articles were excluded for being in a foreign language without English interpretation, duplicates, not meeting search criteria, having not been implemented, and those pertaining specifically to the pediatric population and parent education. Of these, a variety of discharge modalities were utilized both preoperatively, postoperatively, or in combination with various surgeries or medical procedures as well as some systemic reviews. The research designs included observational cross-sectional studies, meta-analysis, cross-sectional reviews, and randomized controlled trials. See Appendix

G for the Literature Review Flow Sheet and Appendix G for a synthesis table of the reviewed studies.

Patient Comprehension

Many teaching strategies are employed in the education of outpatient surgical patients. The most common finding of this review of literature concluded that video, when utilized along with traditional written discharge teaching, improved patient comprehension and satisfaction with the discharge process (Atlas et al., 2019; Chakravarthy et al., 2018; Chang et al., 2018; Gonella et al., 2021; Green & Bernhofer, 2018; Greene et al., 2017; Hoek et al., 2017; Holland et al., 2017; Logsdon et al., 2015; Newnham et al., 2017; Schooley et al., 2015; Soydas et al., 2019; Wilkin, 2020; Wischer et al., 2018). Patient reported feeling less anxiety about their procedure and more confident after viewing the educational video. They preferred information that was clear and simple, with pictures or illustrations, presented in easily understandable formats (Alzahrani et al., 2021; Chakravarthy et al., 2018; Logsdon et al., 2015; Schooley et al., 2015). Patients stated having a better understanding of what complications needed to be reported to the physician and how to care for themselves after video education versus traditional discharge instructions (Greene et al., 2017; Logsdon et al., 2015). Videos are effective regardless of a patients reading ability, socioeconomic status, or health literacy (Logsdon et al., 2015; Wray et al, 2021). Several studies theorized that patient comprehension was lower with the traditional discharge process because patients felt rushed, the instructions were difficult to follow, or patients did not think of questions to ask until they got home (Schooley et al., 2015; Wischer et al., 2018).

There were a limited number of studies that investigated the timing of discharge educational in relation to patient comprehension and satisfaction (Kang et al., 2020; Green &

Bernhofer, 2018; Gonella et al., 2021; Hovsepian et al., 2017; Soydaş et al., 2019; Wischer et al., 2018). An overwhelming amount of information is often conveyed in the ASC setting and studies revealed that comprehension can be effected by the amount of information, timing, and effects of pain and anesthesia (Greene & Bernhofer, 2018; Kang et al., 2020). Providing discharge information both pre and postoperatively was perceived by patients as having a positive impact on satisfaction and comprehension (Kang et al., 2020; Green & Bernhofer, 2018; Gonella et al., 2021; Hovsepian et al., 2017; Soydaş et al., 2019). Research states the benefits of quality patient-provider communication include improved knowledge, self-efficacy, and increased adherence to the treatment plan (Schooley et al., 2015). In the case of the ASC setting, there is a large emphasis on throughput, leaving little time to clarify instructions, answer questions, and ensure patient comprehension (Chakravarthy et al., 2018; Schooley et al., 2015; Wischer et al., 2018; Wray et al., 2021). Studies reported patients felt encounters with providers and nurses in the ASC setting are rushed and task focused leaving little time to clarify information (Chakravarthy et al., 2018; Gonella et al., 2021; Hoek et al., 2017; Kang et al., 2020; Newnham et al., 2017; Villamin, & Berg, 2018; Wischer et al., 2018). Sinha et al. (2019) concluded a video presented prior to the procedure gave patients more time to consider confusing topics, ask questions, and decreased discharge time post procedure.

Postoperative symptoms may appear the first few days after surgery that were not apparent at discharge. Knowing what might be “normal” can be confusing to many patients. With decreased length of stay of ASC settings, education plays an important part in a patient’s self-management and also aids in the ability to recognize when to seek help (Greene & Bernhofer, 2018). Education provided just prior to discharge decreases a patient’s ability to retain and comprehend the information presented, and forces the patient to rely on the caregiver,

internet medical sources, or printed material when issues arise (Kang et al., 2019). Patients have a desire to participate in their care and discharge teaching should be presented in an environment conducive to retained comprehension (Greene & Bernhofer, 2018). Discharge teaching is ineffective if patients fail to understand what they are being taught or what is expected of them after they go home. Information exchange through effective communication cultivates comprehension and builds trust between the patient and the healthcare staff and overall increases patient satisfaction with their surgical journey (Sinha et al., 2019).

Use of Technology

There has been a shift in healthcare towards the use of technology to communicate with patients and has proven to increase communication between patient and provider (Schooley et al., 2015). Recent platforms such as YouTube have seen a large increase in medical information, but studies show most of these sources are unreliable (Gray et al., 2020; Schooley et al., 2015). Technology driven discharge teaching via video streamlines and standardizes information making the education consistent for each patient (Wilken, 2020). It is an effective medium and reduces variability to ensure accurate information is being presented (Wilken, 2020).

Readily accessible information provided preoperatively in multiple modalities gives the patient time to consider their diagnosis, treatment plan, and self-care management (Wray et al., 2021). While Hoek et al., (2017) found the majority of patients wanted information from the provider, 75% also stated they preferred to have a video or other visual instructions to view at home. Newnham et al., (2017) also found that in addition to patient preference for technology driven information, providers also preferred alternative forms to communicate and reinforce teaching outside of the clinic setting.

Several studies demonstrated that the use of video education boosted their confidence in caring for themselves at home (Atlas et al., 2019; Chang et al., 2015; Hoek et al, 2017). Patients preferred the ability to have information available for viewing at home on demand as many times as they wished, especially after discharge if questions or concerns arose post procedure (Atlas et al., 2019; Chang et al., 2015; Chakravarthy et al., 2018; Hoek et al, 2017; Newnham et al., 2017). When questions arise, 81% of patients report watching medical videos or reading medical information on the internet prior to and after discharge (Atles et al., 2019). The majority of patients are eager to go home and return to their normal routine after surgery (Kang et al., 2019). Providing education available on demand enhances the learning process and enables retention of information when timing and environment are conducive to learning (Kang et al., 2019).

Video education does not significantly alter nursing workflow. There isn't a need to be at the bedside with physical staff during the video viewing and many of the studies had tremendous buy-in from staff as a way to educate patients' without additional workload (Chakravarthy et al., 2018l; Sinha et al., 2019). Utilizing technology through patient educational videos reduced the burden on provider and staff time while not compromising patient care.

Preparedness for Discharge and Complications

Clear discharge instructions and adequate information to manage expectations of surgery and recovery are necessary for a safe home discharge (Alzahrani et al., 2021). Complications can arise in the transition of care that can lead to delayed discharges, higher readmission rates, decreased compliance, post-operative complications, and higher healthcare costs (Alzahrani et al., 2021; Carr et al, 2019; Wray et al., 2021). Preparedness is important for the patient so they can retain autonomy, feel safe, secure and supported. None of these basic needs can be met without ensuring the patient is educated and prepared to go home. In the ASC, the caregiver is

often the one discharge instructions are relayed to since the patient has recently had anesthesia. This can lead to miscommunication of medication use, misunderstanding of diagnosis, or failure to properly follow orders (Alzahrani et al., 2021). Difficulty recalling information has been demonstrated immediately after discharge and several days out and point to the conclusion that perhaps this is not a function of simply forgetting information (Alzahrani et al., 2021). Sinha et al., (2019) found that retention of information increased with the use of video discharge instructions and patients felt more prepared to go home after surgery.

Pain management can present some of the greatest clinical challenges because pain is a subjective experience (O'Donnell, 2017). Age, expectations, and previous experiences can all effect a patient's perception of pain and therefore patient satisfaction (Best et al., 2016; O'Donnell, 2017; Resop Reiley et al., 2019). Expectations, lack of communication, and lack of teaching can lead to inadequate pain control (O'Donnell, 2017). Utilizing key phases and open dialog with education has been shown to alter patient perceptions about pain management (Resop Reiley et al., 2019). Laparoscopic cholecystectomy patients have historically higher reported postoperative symptoms of pain that other laparoscopic surgeries and have a higher unscheduled follow-up call to providers post discharge regarding pain (Odom-Forren et al., 2018). A majority of those patients reported feeling uninformed about the level of pain to expect and how to manage that pain properly (Odom-Forren et al., 2018). In a recent review of literature by Best et al., (2016) education played a significant part of a patient's postoperative pain, anxiety, and overall recovery. However one retrospective study on pain and length of stay in spinal surgical patients found that education did not impact those outcomes but did improve overall patient experience (Rapp et al., 2020).

Barriers

Several studies did explore the barriers to designing, implementing, and evaluating preoperative education materials in the ASC setting. Barriers affecting patient education included nurse's time availability, patient's language and reading comprehension, tight operating schedules, and the expectation that doctors were responsible for giving the education (Newnham et al., 2017; Schooley et al., 2015). Utilizing plain language and verifying whether the patient understood the material, led to improved patient understanding (Schooley et al., 2015). There is a lack of standardization with discharge education and it is often poorly written, incomplete, or uses medical jargon patients do not understand (Newnham et al., 2017). A barrier stated in literature was unfamiliarity with some technology by patients and staff and problems related to using tablets or other online platforms (Sinha et al., 2019).

Theoretical Framework

Nursing theories are utilized to guide the process of translating research into practice (Polit & Beck, 2012). These theories can assist in understanding what influences outcomes and help evaluate implementation and outcomes. Analytical principles or statements often guide theories and are designed as a structure for understanding the variables, domains, and abstract concepts, or relationships the author is trying to explain or evaluate in a larger context (Polit & Beck, 2012). Incorporating theoretical frameworks into the doctorate of nursing practice encompasses Essential I: Scientific Underpinnings for Practice (American Association of Colleges of Nursing, 2006). The discipline of nursing is focused on the holistic nature of the human being in relation to self and the environment around them. Additionally, this project also encompasses Essential II with the goal of eliminating health disparities and promoting patient safety by improving delivery of care to meet the current needs of patients (American Association of Colleges of Nursing, 2006).

The concept of discharge planning is encompassed within the domain of the holistic relationship between patient and nurse. Specifically, because discharge teaching is a means of promoting self-care and self-reliance, it can assist in preventing potential adverse events post discharge, readmissions to the hospital, and can increase patient and family satisfaction, as well as fulfill an organization's mission of patient centered care. Orem's Self Care Deficit Theory's premise is that patients desire to care for themselves and their ability to do so is dependent upon their knowledge, comprehension, and skill. There are universal self-care requirements each patient needs in order to maintain their acceptable standard of health and self-efficacy, among them are sufficient intake of air, water, food, balance of elimination, activity and reset, and individual normalcy (Orem et al., 2001). Illness and disability create barriers to universal self-care requirements (Orem et al., 2001). Surgery disrupts a person's health status from baseline and new self-care needs should be identified. Perioperative discharge planning is by definition a preventive service that provides information necessary for the maintenance of these universal self-care requirements. Presenting patients with education early on allows them to have time to make informed decisions, identify their safety concerns or environmental/home barriers and emotional concerns. There have been a variety of modalities utilized to improve the discharge process for many years. However, adverse events related to failures in the discharge process are still fairly common (Nordmark et al., 2016). Using a theoretical frameworks such as Orem's Self Care Deficit Nursing Theory can support the evaluations of interventions used to improve a patient's return to the ability to care for themselves, which is within the role and essentials of a nurse practitioner.

Orem's Self Care Deficit Nursing Theory, also known as Orem's Model of Nursing, is the theoretical framework used in this DNP project. Orem's theory suggests that patients are

better able to recover when they maintain a level of independence over their own self-care (Orem et al., 2001). There are three themes essential to this grand nursing theory: the theory of self-care, the theory of self-deficit, and the theory of nursing system (Orem et al., 2001). Maintaining health and a state of well-being an individual performs on their own is the focus of the theory of self-care. Self-care maintains one's life and life functioning or acts to correct a health deviation or disability. A deficit in those activities often necessitates nursing intervention especially if the deficit limits effective self-care. The theory of nursing system focuses on the supportive-educative relationship that takes place between nurse and a patient (Orem et al., 2001).

Orem's theory addresses self-care deficits and nursing's role in helping the patient learn to care for self again. Orem recognizes that human and environment influence each other reciprocally. Factors which influence self-care behaviors include beliefs, social and cultural background, personal characteristics, and relationship between health care providers and the patient (Orem et al., 2001). External factors that also play a role in self-care includes ethnicity, socioeconomic background, educational level, employment status, environmental factors such as pollution, sociopolitical variables (Orem et al., 2001). All of these effect a person's ability to engage in self-care as they prepare for successful discharge home.

Orem stressed the importance of understanding the needs of patients as the starting point that begins early in the patients' healthcare path (Orem et al., 2001). Education presented early on, encourages the patient to partner with the health care team to assist in decision-making about their discharge plan, overcome barriers, and allow for values and beliefs to be included that might otherwise prevent an individual from overcoming self-care deficits. This theory has been used extensively in the hospital and ambulatory care setting to encourage health maintenance, symptom and disease management (Tok Yildiz & Kaşikçi, 2020). Utilizing Orem's self-care

theory as a basis for peri-operative discharge education can be an effective way to guide patient care that leads to a greater patient satisfaction through knowledge acquisition. The role of the advanced practice nurse is to determine how the patient can best undertake self-care activities within the boundaries of their environment and ability utilizing theories such as Orem's self-care theory themselves.

Methodology

Project Description

This DNP project focused on the implementation of a pre-procedural educational video for LC patients. Since satisfaction scores from patients regarding discharge teaching has declined recently at this site, the impact of an educational video on the patient's preparedness for discharge, length of stay post procedure, and postoperative pain score on the Numerical Rating Scale (NRS) was be measured. Participants were educated by video pre-procedure on their laparoscopic cholecystectomy, what to expect before, during, and after surgery, and when to notify the physician after surgery. The aim of the intervention was improving patient preparedness, pain goal attainment at discharge, and a decrease in length of stay in the discharge area. All of these measures encompass a patient's satisfaction with their discharge from the ASC setting. No information presented in the video precluded physician written discharge orders or other specific instructions written by the surgeon. Outline of video information is found in Appendix A.

Project Design

This DNP project utilized a logic model for its design. A logic model is an illustration of how processes and outcome components relate to one another and assists in depicting relationships between resources, activities, outputs, and outcomes in the evaluation of an

intervention and goal. This project utilized a pre/post survey to investigate changes in patient's state of preparedness for surgery and discharge prior to and after watching the video intervention in the preoperative setting on their scheduled day of surgery. Length of stay was measured in minutes from the time the patient entered the postoperative recovery area until their official discharge time. It was compared to the prior month's data of length of stay for LC patients as a percentage change. Stated pain score at discharge on the NRS was measured and compared with the patients stated pain NRS goal when queried on arrival to their preoperative room.

Patient satisfaction in regards to discharge instruction was identified in the needs assessment as a problem in the Same Day Surgical area of Cox South. Patient's satisfaction scores reflected lower than acceptable ranking in areas of instructions regarding recovery, information regarding subsequent pain, and written discharge instructions on their Press Ganey survey (Press Ganey, 2021). Press Ganey is a private vendor which has been granted permission to utilize the OAS-CAHPS survey along with 15 proprietary copywrited questions added. Permission to use the Press Ganey survey questions outside of the official patient survey could not be obtained for this project. However, using the problems identified, a plan was developed to increase patient discharge satisfaction through standardized evidence-based education utilizing technology in the form of a video. The goal was to educate patients undergoing LC about the procedure, recovery, and discharge instructions. Since the Press Ganey scoresheets take an average of 6 months to gather and report data, it was impractical to report these numbers in this DNP project timeline, and there is no way to isolate LC patient because surveys are anonymous. However, cumulative scores will be obtained and utilized in the future to evaluate the impact of the project as continuation of the patient education project is anticipated. In lieu of the Press Ganey score, a patient preparedness survey was utilized that measured a patient's perceived

readiness for discharge based on comprehension about the procedure and subsequent home self-care. In addition length of stay post procedure was measured to determine readiness to return home. Lastly, pain scores at discharge were measure and compared against the patients stated pain goal.

Length of stay, pain, and preparedness were chosen as items that could be measured by chart review or survey and quantified. Preparedness correlates to patient comprehension and satisfaction of discharge instructions and their readiness for surgery, recovery, and subsequent home care. This will be measured through a modified Patient Preparedness Questionnaire given pre and post video intervention. Length of stay was chosen as a quantifiable measure of preparedness and readiness for self-care upon discharge. A patient who is knowledgeable about their procedure, recovery, and self-care instructions is prepared to go home without a lengthy discharge process (Alzahrani et al., 2021). Pain scores recorded on the NRS upon discharge were chosen as a measure that could be quantified when compared to the patients desired pain level. Preoperative education on pain increases a patient's knowledge and preconceived notion of pain during recovery and has been shown to improve expectations and satisfaction (Odem-Forren et al., 2018). It was determined that the preoperative period allotted ample time to explain and seek participation in this project from the patient, take the pre-operative survey, watch the educational video, and take the post video intervention survey. See Appendix B and C for the Patient Preparedness Questionnaire and Appendix K for a depiction of the Logic Model.

Setting

This clinical site has 1,014 licensed beds. The health system performs 34,699 surgeries per year between four ASC facilities. Approximately 150-250 laparoscopic cholecystectomy surgeries are performed per month at the main hospital ASC setting. However during the Covid-

19 pandemic that number was decreased by half.

Study Population

The most common surgical procedure performed in the ASC setting among insured individuals in the United Stated is the cholecystectomy and common duct exploration (Steiner et al., 2021). A goal of 50-100 patients was initially planned. Project recruitments included adult elective LC patients for a 45 day period. Inclusion criteria consisted of adult patients scheduled for elective laparoscopic cholecystectomy. Exclusion criteria precluded patients who did not speak or read English, those admitted for emergent procedures, patients who did not return home after discharge or who were admitted after surgery, those under the age of 18, pregnant women, prisoners, and other vulnerable populations.

Subject Recruitment

Patients were screened by the principle investigator (PI) from an updated surgical list on SurgiNet the night before for inclusion and exclusion criteria. Surgical procedures are updated each day on SurgiNet, the hospitals surgical scheduling site. Patients were recruited over a 45 day period. Patients arrived to the same day surgical area at a scheduled time and checked in for surgery and were escorted to their pre-op room. Once an eligible patient arrived to the pre-op room, they were approached by the PI and asked if they would like to participate in this project. A packet containing a recruitment script, instruction sheet, surveys, and QR code was given to the patient. It was made clear that participation was voluntary and that participation implied consent. The PI discussed the purpose, design and format of the project, and estimated time that would be needed to participate. If the patient chose to participate, they were instructed to only return the surveys. The recruitment script with contact information, instructions, and QR code were theirs to keep. Once completed, the patient was instructed to return their completed surveys

to a staff member and the packet would be placed in a locked box in the unit. The video length was 7 minutes long and surveys were estimated at five minutes to complete. The time required to complete this process of recruitment and participation was estimated to be around 30 minutes. See Appendix L, M, N for Recruitment Script, Instruction Sheet, and QR Code.

Consent Procedures

This DNP project did not expose patients to any physical harm, pain, discomfort, or injury from invasive medical procedures and excludes vulnerable populations, and informed consent was deemed not necessary by both IRB approvals obtained. All patients that meet inclusion criteria were told that participation implied consent and participation was voluntary.

Study Measures

Conceptual Definitions. The following conceptual definitions were utilized for the purpose of this DNP project:

- *Patient Readiness for Discharge* refers to the patient's perceived ability to return home from their outpatient LC and resume self-care.
- *Pain Goal* is defined as how much pain relief a patient feels is tolerable and to what degree they want to be free from pain.
- *Length of Stay* refers to a clinical metric that measures the length of time elapsed between a patient's admittance to the recovery are and their discharge.
- *Comprehension* is defined as the ability to understand and be confident with the information given.
- *Self-Care* involves the processes and individual makes regarding informed decisions about diagnosis and treatment of health problems, as well as the ability to return to a prior state of function after an alteration of health.

Operational Definitions. The operational definitions for this DNP project consist of the following:

- *Patient Readiness for Discharge* was measured through the use of a modified survey from by Kenton et al. (2007) that assessed a patient's perceived level and understanding and satisfaction of educational materials and subsequent ability to maintain self-care after discharge.
- *Pain Goal* is measured on a numeric scale of 0 to 10. The scale is based on a scale where 0 is a level of no pain, 5 is the moderate level of pain and 10 is the worst imaginable pain.
- *Length of Stay* is the measure of the amount of time in minutes a patient remains in the post-operative area from the recovery area (PACU) until their actual discharge time from the hospital.
- *Comprehension* is discussed in questions 3, 5, 7, 8, and 10 of the Preparedness for Discharge Questionnaire.
- *Self-Care* is discussed in question seven of the Preparedness for Discharge Questionnaire.

Benefits and Risks

The Office of Research Integrity as part of the United States Department of Health and Human Services is responsible for developing policies, procedures and regulations related to responsible conduct of research (Office of Research Integrity, n.d.). Risks to subjects are minimized by using procedures which are consistent with research and do not expose subjects to risk or harm. This DNP project design did not expose patients to any physical harm, pain, discomfort, or injury from invasive medical procedures and excludes vulnerable populations.

Stress and feelings of guilt or embarrassment may arise simply from thinking or talking about one's own behavior or attitudes. These feelings may manifest when the subject is filling out a survey. The surveys may also be perceived by patients as an inconvenience. Safeguarding information that has been given voluntarily by the patient will ensure confidentiality. Each patient will have a unique identifier, and the identifier file linked to the patient will be on an encrypted password protected file on a password protected laptop. Completed surveys were placed in a locked box in the discharge area. Only the Principle Investigator and Site Champion had a key. Collection of packets took place at regular intervals. There is no sensitive personal information that was collected. Benefits to participating in this project included assisting in providing a better understanding of improving the discharge process in the form of comprehension and readiness, and the benefits of standardizing patient discharge information. This research has no immediate therapeutic benefit to the participant, but may benefit healthcare as a whole. These benefits take the form of increased knowledge, improved safety, technological advances, and better health outcomes.

Subject Costs and Compensation

There were no costs incurred to patients or compensation given for participation. Patient compensation is not permitted and did not occur during this DNP project.

Resources Needed and Economic Considerations

There was minimal costs associated with the implementation of the DNP project. Resources needed to complete this project included video equipment and editing programs provided by the videographer. An iPad was made available for patients to view the video if the patient did not have a smart phone or access to one. A QR code was created for free using QR Code Generator. The video can be published to YouTube and made private at no cost. Surveys

were filled out on paper per the request and available resources of the clinical site. A packet was created with necessary information/instructions for the patient, along with QR code, surveys, and consent form. A locked box was purchased for completed paper surveys to be turned in to. See Table 1 for costs incurred.

Table 1

Cost Incurred During the Project

Resource	Cost
Purchase QR code	Free through QR code generator
Print patient packets with instructions, surveys, and informed consent	$300
Lock Box	$55
Create video/Editing	$500

Implementation

Study Interventions

A pre-operative LC educational video was created to be viewed by the patient prior to anesthesia and surgery. The video included a brief overview of anatomy and the surgical procedure, what to expect the day of surgery, what to expect post-surgery in recovery, what to expect when the patient goes home, complications to watch for, basic incision care, basic discharge instructions, the importance of their follow-up visit, and when to seek immediate medical care. Interventions also included a pre and post video questionnaire to assess the readiness of the patient for discharge based on prior education received. See Appendix A for

outline of the video and learning objectives and Appendix B and C for the Patient Preparedness Questionnaire.

Pre-Implementation Phase

Pre-implementation began with preparation for the project. A needs assessment was performed to identify gaps in care within the department. After a plan for additional patient education was developed and video medium selected, a video script was written and approved by both the department and general surgery. The video script was based on literature from the American College of Surgeons. The educational video was created, edited, and approved by the site. A meeting was held between the department manager and the assistant pre/post-operative manager to discuss implementation and education of staff. An email was sent to staff detailing the project and a description placed in the written staff huddle minutes. A lockbox was placed in the post-op area to collect surveys. Packets that contained surveys, QR code, recruitment script, and instructional sheet were created, collated, and numbered.

Implementation Phase

Implementation began January 31, 2022, one month later than proposed. Due to Covid-19 complications and additional time necessary to get approvals, the start of the project was delayed. Subjects were recruited in the pre-operative area and given a packet by the principal investigator (PI) which contained a recruitment script, information/instruction sheet, pre and post video questionnaire, and QR code. Patients were screened the night prior to their surgical date by the PI. Patients were approached in the pre-operative room once they were checked in for surgery. The recruitment script, as shown in Appendix L, was utilized by the PI to explain the project and instructions to complete the surveys should the patient choose to participate. Patients were shown how to utilize a QR code and provided with an IPad if they did not have a

smartphone. Opportunity was given for the patient to ask questions during the recruitment phase. Staff then followed up prior to being taken to surgery and collected completed questionnaires and placed them in the lockbox. Prior to discharge, the post-operative staff also collected additional completed packets.

Plan-Do-Study-Act Cycles. This project utilized the Plan-Do-Study-Act (PDSA) continuous improvement model for implementing change. The four step PDSA cycle addresses process improvement and promotes the use of a small scale approach thus minimizing risk to patients, the organization, and resources, while at the same time providing an opportunity to collect data and engage stakeholders (Taylor et al., 2014). This project included three phases, pre-implementation, implementation, and post implementation.

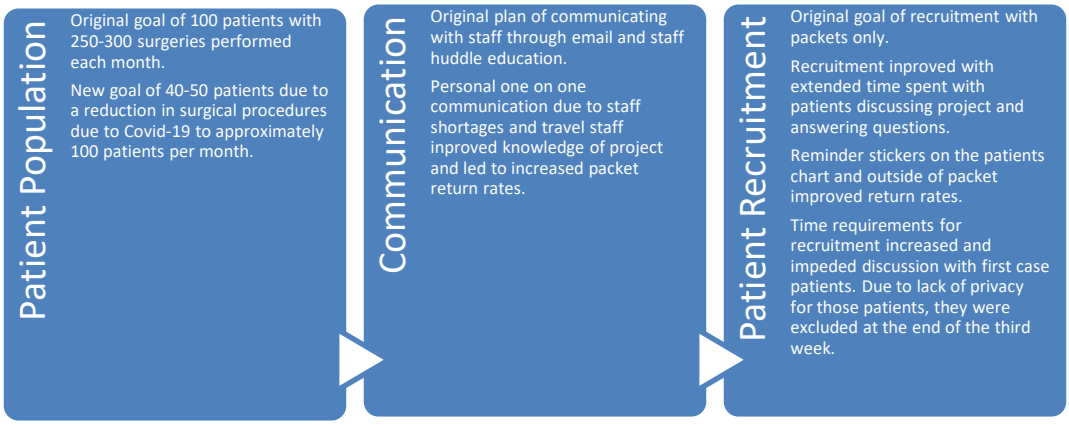
The overriding theme of the PDSA cycles was how to increase survey return rates. Initially less than one third of surveys were returned the first week. After investigation of the cause, additional staff education was performed and reminders were place on the outside of the chart letting the nurse know that the patient was given a project packet and to turn in completed surveys to the lockbox. At the close of the second week, after the initial intervention, return rates improved slightly to 40%. At the conclusion of the second week, another PDSA cycle was performed to further improve return rates. Feedback from staff included that patients and other ancillary staff were still unsure of what to do with the packets and what they were for. At the start of week three, the PI placed a sticker on the front of the packet to remind the participant to return the surveys prior to surgery in addition to the prior chart reminder. An additional verbal reminder to check for packets prior to surgery was also instituted for staff. This improved return rates to 60% and above for the remainder of implementation. Time spent with patients and staff was the biggest factor in the increased participation in this project.

Another PDSA cycle was performed to improve return rates of first case patients. From the beginning of the project, this population had nearly a zero return rate. This PDSA cycle investigated the timing of recruitment. First case patients typically arrive in same day surgical (SDS) area around 6am for a 7:15 am surgical start time. These patients typically have the shortest check-in period with most less than 60 minutes. They are also the only patients to be moved to the holding area shortly after arriving and getting checked in. The holding area is simply an open room with other patients and curtains and lacks privacy. In addition, patients do not have their belongings with them and an IPAD or other device was necessary for the patient's to view the video. In the holding area the pre-op nurse, OR nurse, and surgeon are busy with the patient due to the shortened pre-op time of the first case. Additional discussions were held with surgical staff and based on feedback these patients were ultimately excluded from the project. They were deemed venerable due to privacy concerns and lack of time to make an informed consent.

Ensuring a successful project takes a team. The staff, department managers, and surgical staff and surgeons were instrumental in ensuring this project had a successful path. Communication was the biggest challenge in this project among staff. Several emails and staff huddle mentions were sent and ultimately direct communication about the project to staff increased understanding the most. Each morning, the PI greeted staff and noted the nurses who were assigned potential recruitment patients and spent time with the secretarial staff, charge RN, and staff nurses to personally notify them of potential patients. Opportunities were made to let the surgeons know that their patients were potential recruitments in the project during the week. Overall, everyone involved supported and assisted in the success of the project. See Figure 1.

Figure 1

PDSA Flow Chart



Post- Implementation Phase

Post implementation consisted of gathering remaining packets, notifying the department, site, and surgeons that the project was complete. Also completed during this phase was entering all data into the encrypted spreadsheet and meeting with the site champion to close out the project. Post-implementation included data entry into SPSS, evaluation, analysis, and dissemination.

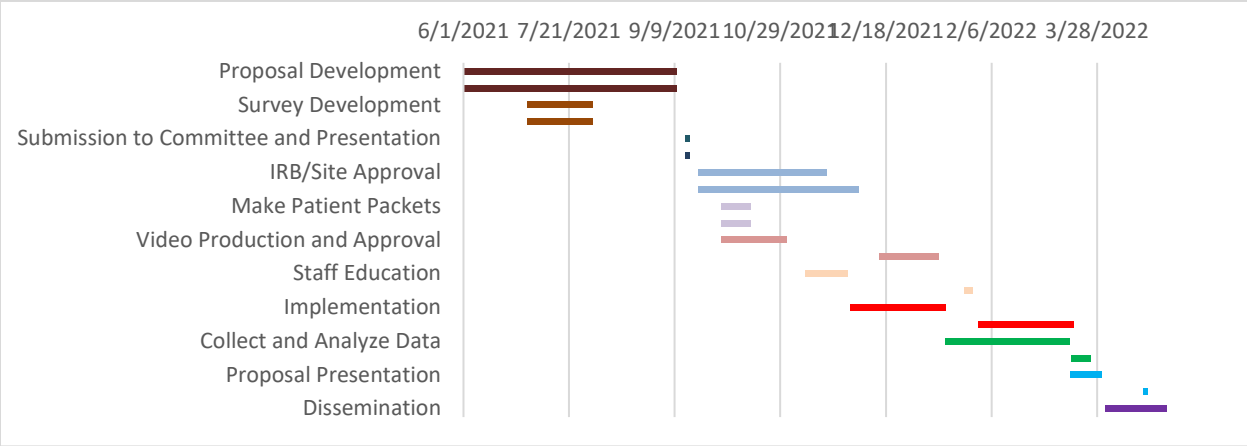
Project Timeline

This project took place during a pandemic and the original timeline had to be adjusted due to IRB approval, site approval, surgeon and department approval, staff shortages, and Covid-19 restrictions and complications, as shown in Figure 2. The facility was mired with the one of the highest Covid-19 hospitalization rates in the country and numerous staff shortages that followed. Surgery schedules were altered as well as video production times due to Covid-19 and the length of implementation had to be adjusted. Prior to this project, there were 250-300 laparoscopic cholecystectomies were performed each month. That number was reduced to less

than half the anticipated amount in the months preceding months of the projects start and continued through the project implementation. The initial goal was 100 patients with at least 30 days of implementation. However, due to a reduction of surgical patients, staffing, and delays due to hospital capacity, 100 patients seemed doubtful. The timeline was extended to 45 days and concluded.

Figure 2

Gantt Chart Proposed vs. Actual Timeline



Evaluation of Results

Data Maintenance and Security

To protect patients, each was assigned a unique number. Identical numbers were recorded on both pre/post surveys and assigned to a unique patient identifier. No actual patient identifiers were displayed on any survey tools. Data was manually entered into a password encrypted excel spreadsheet on a password protected laptop. Only the principle investigator had the password. All patients completed paper surveys and packets were placed in a locked storage box in the post-operative area when completed. Collection of packets took place at regular intervals by the

PI. Only the principle investigator and site champion had a key to the locked box. The post-operative unit is locked every night and only security and managers have a key.

Data Analysis

A total of 117 laparoscopic cholecystectomies were performed during the implementation period of 1/31/22- 3/16/22. Excluded from the sample were twenty-five earliest case patients scheduled for 07:00am, 39 patients that were either emergent or admitted post-operatively, and 14 that qualified as a vulnerable population. Eventually, forty patients were recruited and 27 packets returned over the implementation period. Exclusion criteria precluded patients who did not speak or read English, those admitted for emergent procedures, patients who did not return home after discharge or who were admitted after surgery, those under the age of 18, pregnant women, prisoners, and other vulnerable populations. Exclusion expanded to the first case patients due to lack of privacy for the patient, lack of time to recruit the patient, and time for the patient to complete survey prior to their OR time. They were deemed a vulnerable population because they lacked privacy and time necessary to make an informed decision to participate and thoroughly read and understand the project.

Demographic Data

The age distribution for patients was evenly distributed with each group making up 33.3% of returned surveys, as shown in Table 2. Female respondents accounted for 77.8%. Patients indicating a high school degree or higher was 92.6%. See table 2.

Table 2

Demographic Data

Baseline Characteristic	# of Participants	Percentage

Gender		
Male	6	22.20%
Female	21	77.80%
Not Disclosed	0	
Age		
18-29	9	33.30%
30-60	9	33.30%
61+	9	33.30%
Education		
Some HS to HS graduate	10	37%
Some college to college graduate	11	40.70%
Graduate school	4	14.80%
Not Disclosed	2	7.40%

Length of Stay

The first objective measure was to show a decrease the length of stay in the post-operative discharge area by 15% when compared with the prior month's data. The measurement of the LOS dependent variable is based on the actual LOS average for the recruited patients. This was compared to the prior month's average length of stay for outpatient LC patients. The site's

prior month LOS from 12/31/2021-1/30/2022 was 180.63 minutes. The prior month's average was achieved by calculating the mean time for outpatient discharge for 12/31/2021-1/30/2022. Data for the comparative prior month included 63 total patients LOS in minutes, of which 47 were outpatient discharges. Sixteen of the 63 patients were excluded based on the criteria of the project.

Data analysis demonstrated a 40% drop in the total minutes spent between PACU and the discharge area based on comparison of the 27 patients and the prior month's mean LOS, see Table 3. Since patients must remain a minimum of 45 minutes in PACU, this decrease demonstrates a reduction in the discharge process time, as shown in Table 3. Additional analysis also revealed that an increase in age correlates to increase in LOS, as shown in Table 4.

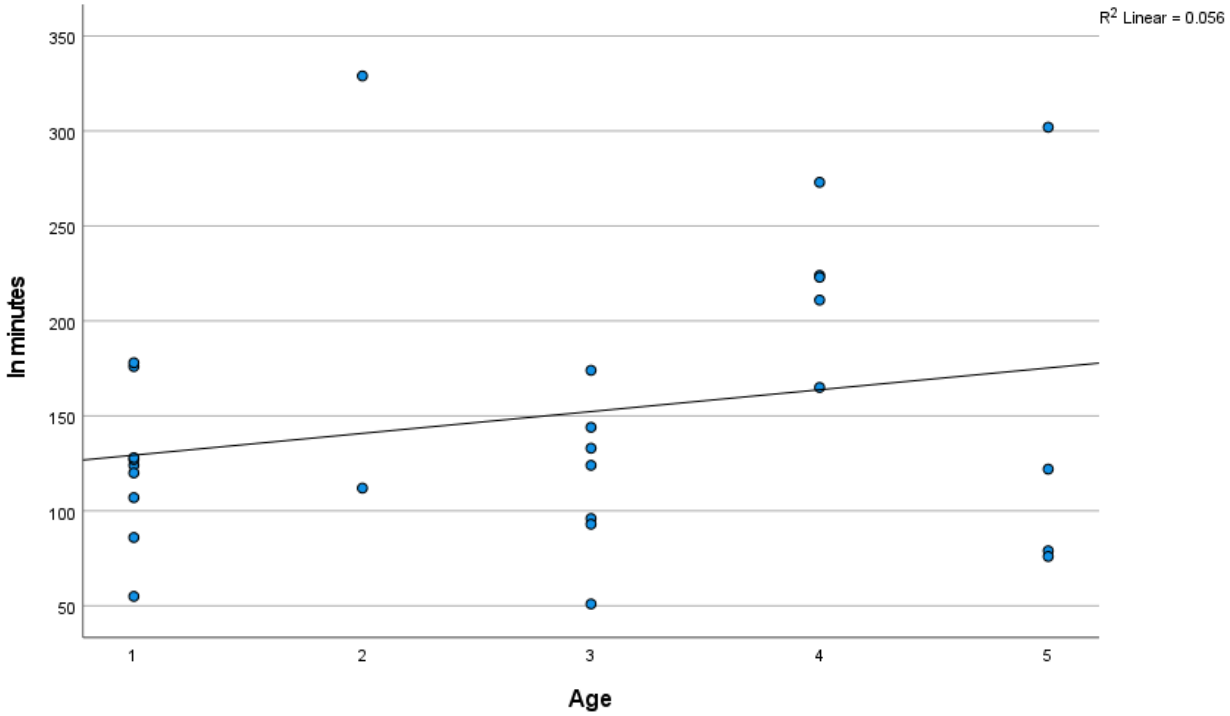
Table 3

Length of Stay Comparison

LOS	Mean LOS from the prior month of LC patients in minutes	Actual LOS in minutes of surveyed patients	Comparison as a Percentage
	180.63	108.973	40% less

Table 4

LOS in Relation to Age



Pain Control

The second objective was to achieve a pain score of less than 5 or at the patient's stated pain goal at discharge by 85% of patients. 77.8% rated their pain score at their initial goal of 5 or less at discharge, as shown in Table 5.

Table 5

Pain Goal Attainment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	22.2	22.2	22.2

	Yes	21	77.8	77.8	100.0
	Total	27	100.0	100.0	

Patient Preparedness

The last objective of this project was to achieve a 4-5 agree/strongly agree score on the Patient Preparedness Survey post video viewing by 85% of patients. A frequency was run in SPSS of each post-video question and percentages of 4-5 scores were calculated per question. See Table 6. A mean was then calculated of all percentages. A mean was attained from the cumulative percentage of each question, as shown in Table 6. A mean of 97.41% of patients rated each post video survey question a 4-5 agree/strongly agree score on the Patient Preparedness Survey.

Table 6

Response Rate of 4/5 Scores Post Video

Patient Preparedness Post Video	Percentage Score of 4 Agree	Percentage Score of 5 Strongly Agree	Cumulative Percentage
1. The education I have received so far was helpful and adequate.	29.6	66.7	96.3
2. The education I have received so far helped prepare me for my surgery.	25.9	63	88.9

3. The education I have received so far was clear and easy to read/understand.	25.9	74.1	100
4. Overall I am satisfied with the education I have received so far.	22.2	74.1	96.3
5. I understand the purpose and benefits of my planned surgery.	22.2	74.1	96.3
6. I feel prepared for what to expect after my surgery while I am in the postsurgical unit.	18.5	77.8	96.3
7. I feel prepared for what to expect after my surgery when I go home.	18.5	77.8	96.3
8. The educational information so far has answered my questions.	22.2	74.1	96.3
9. My doctors and nurses have spent enough time preparing me for my upcoming surgery.	25.9	74.1	100
10. Overall I feel prepared for my planned surgery.	18.5	81.5	100
Mean of all cumulative percentages			97.41

Outcome Measures

The COVID-19 pandemic has presented unique challenges for this project and as a whole within health care institutions. There was a significant decrease in the number of procedures performed as well as a decrease in staffing. These shortages led to a reduction in cases, available operating rooms, and longer than usual preparation time for patient surgeries. Each patient had to be tested prior to surgery for Covid-19. Incidental positive Covid-19

findings meant the patients required isolation pre-operatively or had their surgery canceled. Several temporary travel staff nurses were unaware of the project and stated they may have thrown away packets. It is unknown if these were completed or not and how they would have effected results.

Process Measures

When gaps are identified in care or outcome measures not met, it often leads to an analysis of system processes. Improving the process within a system eventually improves the chosen outcome (Scoville, 2015). Caring for patients involves many processes throughout their healthcare journey. Many of the processes are not measured or tracked, making it difficult to discern which activities are associated with positive outcomes. Process measures for pre-surgical education include pre-surgical office visit and education, time spent with the surgeon and other staff on education, and the type of education presented to the patient. Each of these processes creates opportunities to improve outcomes.

There was a cumulative 67.5% return rate of surveys. However, to achieve this percentage a significant amount of time was spent by the PI with each patient and staff. At this site, there isn't a standard amount of time each patient spends in each stage of the process. First cases tend to have the least amount of pre-operative time and those patients get moved to different areas prior to being taken to the OR. This is a deviation from other cases. The purpose is to make space available for the second operative scheduled case. This makes pre-operative teaching challenging due to the change in staff from one area to another. Afternoon cases tend to have the most pre-operative time, but it can lead to higher anxiety and frustration due the patient sitting in a room without food or water for long periods. This longer time makes education more convenient, but the patient can be less receptive.

Each surgeon independently educates the patient at their pre-surgical appointment and the amount of information and education varies. The current process of education is to provide the patient with a verbal explanation of the procedure and then a brochure produced by the American College of Surgeons on their LC procedure along with discussing risks, benefits, and alternatives. Since the amount of pre-surgical education differs among surgeons, this could have had an effect on results based on the number of patients from a particular surgeon.

Balancing Measures

When attempting to increase patient preparedness for discharge, a significant focus is placed on the time spent with the patient and the quality of education. There are factors such as cost, staffing, and other resources that need to be considered when discussing a change in the educational standard for the outpatient surgical patient. Time is a major factor in educating patients and something the pre-operative nurse lacks in many cases throughout the day. Extra time spent educating patients could potentially delay surgical times or necessitate that the hospital increase nursing staff to accommodate this time. However, the use of a video to assist in the education of patients frees up the nurse to complete their tasks with the patient while the patient is viewing the video. Another narrow focus of length of stay as a measure could result in pressure to discharge the patient too quickly. This could result in increases in emergency room visits, increased provider follow-up calls, and readmission rates, although there is no evidence of that with regards to this project. Cost associated with producing video education is another complication. There are multiple surgeries of different systems that would necessitate a dozen different videos. There is also an associated cost of providing secure access through the site's system server to the patient's individual online medical portal. However, despite these challenges, feedback from patients to staff was that they wished they had had this type of

education available prior to their surgical date. Several patients indicated they had done an internet search regarding their upcoming surgery and recovery after their initial surgical appointment and that had led to increased anxiety due to unclear and conflicting information found in that internet search.

Discussion

Healthcare Quality Impact

Systems thinking in healthcare is aimed at observing how things are interconnected and how each piece impacts one another. Outpatient procedures provide increased savings to the healthcare system and convenience for the patient by providing a shortened time from diagnosis to surgery. However, the efficiency of ASC settings in improving patient throughput and reducing costs, can impact the amount of time and resources dedicated for education. Research demonstrates that preoperative education leads to improved outcomes, yet found that only half of all adults comprehend their discharge instructions and the current system of written instructions falls short of meeting patient's educational needs and does not lead to increased patient quality or safety (Calsbeek et al., 2016; Tom et al, 2022; Wray, 2021). This projects demographic data, while made up of more female respondents, was evenly distributed among age groups and patients indicating a high school degree or higher of 92.6%, which correlates with the Missouri average of 90.6% (United States Census Bureau, 2021). Survey scores between pre and posttest were positively correlated however not statistically significant (r = .377, p =.053).

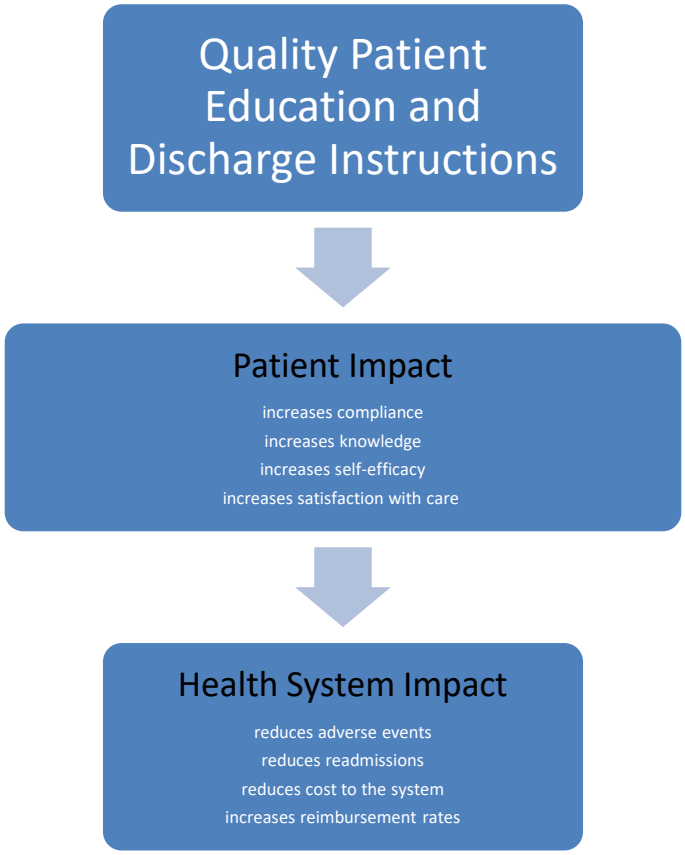
There was a significant average difference between pre and posttest composite scores (t_{26}= -5.761, $p < 0.001$). On average, pretest composite scores were 1.17 point lower than posttest composite scores (95% CI [-1.160, -.76]). Statistical significance might have been effected by the small patient sample.

This project demonstrated that the use of video education can impact both the patient and health system in a positive way. The video education was well received by patients and increased patient perceived preparedness and comprehension. The use of video education presents information in a way that is not biased based on education or literacy levels and leads to better patient comprehension. Project patients and staff who viewed the video expressed the perceived usefulness of the video in preparation for their surgery and many patients stated they wished they had had this information on the day of their pre-operative consultation. More than one patient commented on how the video format was much easier to understand than reading a lot of paper material.

Video education also provides a medium that does not require extensive or additional time with patients and does not add to the tasks staff must undertake. It has an impact on the health system by providing quality standardized instruction without expenditure of additional staff, resources, or time. In fact, technology allows for standardization of education and the ability for the patient to view material on demand and as many times as the desire. Education is essential to a patient's healthcare journey and will improve both quality and safety of the ASC setting. Prior research found that quality preoperative education improves surgical safety, improves patient satisfaction, and lowers preventable events (Calsbeek et al., 2016). Education reduces the occurrence of postoperative complications, as demonstrated in Figure 3, by establishing what to expect in regard to recovery, incision care, nutrition, and complications to watch for and when to contact their physician.

Figure 3

People and Systems Impact



Economic and Cost Benefits

In the current climate of escalating health care costs and the pressure to reduce those costs through meaningful outcomes, patient education presents itself as a low cost way to meet improvement goals. Research shows that education has a substantial impact on self-management, knowledge of their illness, improved quality of life, and the feeling of hope (Stenberg et al., 2018). Quality education also results in decreased hospital admissions, hospitalization, visits to emergency departments or general practitioners, increases in quality of

life (Stenberg et al., 2018), and leads to higher levels of self-efficacy and lower preventable costs from adverse events (Paterick et al., 2017). For every dollar spent educating patients, estimates are that between three and four dollars are saved (Habel, 2002). Projections of $69-100 million healthcare dollars are spent on health issues due to inadequate patient education in the form of adverse events and hospital readmissions (Farzianpour et al., 2014).

There are numerous challenges to increased education within the ambulatory care setting, chief among them is time. Video educational material available to the patient to view at home presents a low cost way to educate patients without straining staff, resources, or time. It also enables the patient to absorb the material and formulate meaningful questions to their healthcare providers and prepare them for self-care once discharged. Online accessible media education is both time and cost effective when considering the current standard of face-to-face education. The cost associated with incorporating video education would include production, integration into the online patient portal, and staff education on the new process.

Health care economics is a term used to describe how individuals, providers, insurers, government agencies, and other organizations drive the costs associated with healthcare services (Stobierski, 2021). Billing for a surgical procedure is divided into different areas. The surgeon bills under a Global surgical package charge which includes services normally provided by a surgeon before, during, and after a procedure (CMS, 2018). Anesthesia services are generally billed as time-based charge. The operating room and supplies is billed separately and based on the complexity of surgery and equipment and staff necessary. This can also be a time-based charge with different OR levels. Recovery time is also billed as a separate charge. At Cox South SDS, the clinical site for the project, patients receive a flat charge for the first 60 minutes in the PACU. Each additional 30 minutes is added to the charge. There is also a flat

charge for the first minute in the discharge area, with each additional 15 minute increment billed.

Total time in minutes spent post-surgery at this site was already lower than the national average. The average for the site prior to the project was approximately 180 minutes. The 2014 National Survey of Ambulatory Surgeries (NSAS) average length of stay for ambulatory care patients was 288 minutes, which was the most up-to-date calculation (Steiner et al., 2017). However, this project demonstrated an additional decrease in the amount of minutes a patient spends in the discharge area. This presents a cost savings for patients if they are well prepared for discharge prior to surgery. It could also demonstrate a reduction in cost of workforce necessary for the hospital, especially in the later evening hours where surgical numbers start to decrease. If patients are able to be discharged efficiently, then less staff is required.

Limitations

There are several limitations acknowledged in this project. The sample size was small and included only one facility, so the findings are not generalizable to all pre-operative patients. In addition, this project focused on patients undergoing a surgical procedure only for laparoscopic cholecystectomies. The small sample size may have biased survey results. Further study of different surgical patients in larger sample sizes and its effect on preparedness levels may help to generalize our results to other patient populations. The need to deliver the education in the pre-operative area prior to surgery also introduces the possibility that the education may not have been rushed. This may have led to lower participation rates or inconsistent answers by patients. Multiple other factors may have also led to lower patient response rates including staff education and knowledge of the project, lack of time preoperatively to complete the questionnaire, and timing of the education itself. Lastly,

performing a project while in the midst of a pandemic led to lower surgical rates, emphasis on emergent cases, decreased staffing levels, and increased policies and procedures within the hospital for outpatient surgical cases. All of these factors could have contributed to a decrease in the availability of potential recruitments.

Sustainability

Preoperative video education can be incorporated into the online patient portal system and used in the future to educate all ambulatory surgical patients. Since most of the video education is general in nature and does not change significantly over time, video based education would only require minimal updates. A video educational series could be expanded to include other procedures or medical equipment education. Since there is widespread use of the internet, smartphones, and medical apps by the majority of the population, even among older patients, implementation of a video based preoperative educational series for ambulatory care patients could be implemented broadly and with little cost (Wray, 2021). In the immediate timeframe, I anticipate the video will continue to be utilized in the pre and postoperative area by staff to adjunct discharge teaching for LC patients. The SDS area has a unit based council that could initiate an education committee to make recommendations for future educational videos and content. Working with the surgical educational staff in conjunction with different surgical specialty committees to expand the use of video education over the next year. This committee could also investigate outside resources that may be able to provide this service to the hospital at a cost. Since patient education is a billable charge, in addition to surgical services, I imagine much of the cost could be mitigated. I would also like to work with the surgical clinic staff to incorporate this into the pre-operative visit for the patient.

Recommendations

Practice Implications

Today, healthcare faces many challenges, including lack of time for quality patient care, high patient loads, and patients with increasing acuity levels (Caldwell, 2019). All of these factors strain the time and resources healthcare staff can allot to patient education. It has become evident with the challenges the Covid-19 pandemic brought to face-to-face provider interactions, that technology can be utilized effectively in treating patients (Tom et al., 2022). Technology-based approaches have been rapidly adopted during this time and modalities such as telemedicine have been recognized as a safe, effective, and economical (Tom et al., 2022). Video-based education can additionally add value into the healthcare process by standardizing education, allowing for education when the patient is ready to learn, and providing cost effective learning. As previously stated in the review of literature, well-educated patients are more compliant with treatment plans, more satisfied with their care, have less anxiety about healthcare needs, and have realistic expectations of treatment interventions (Salmond & Echevarria, 2017).

One of the fundamental aspects to holistic nursing care and an essential of the DNP program is patient education and advocacy. Nursing, specifically the DNP prepared nurse, must take the lead in the role of research based patient advocacy and education and explore new ways to better educate our patients in a cost effective manner. As nursing continues to define its' professional role and scope of practice, education of patients' needs to be at the forefront of delivering safe care and the DNP prepared nurse is the most qualified to lead the research to close gaps identified in care.

At this site, video patient education could be expanded to include all surgical procedures and after-care instructions along with videos on home medical equipment usage, such as

catheters. These could be combined to form a complete surgical education package, that along with written instructions. A video education series could be uploaded into the patient online portal for access to the patient at home after their initial surgical decision appointment and be made available during their preoperative time in SDS for caregivers to view as well. Education provided online would allow for significant others or caregivers to also view the educational series prior to the surgical day. This would improve patient preparedness for discharge, decrease cost, and ultimately lead to the goal of improved patients outcomes and satisfaction.

Policy Implications

Currently only written discharge teaching must be given and documented for each patient at the time of discharge as required per CMS. Written documentation must include post-operative care instructions, provided prescriptions if applicable, and physician contact information (CMS, 2020). The degree to the amount of information included varies widely. A standardized national or state policy associated with the quality of ambulatory education does not exist. There isn't a current policy on the supplementary discharge information a patient should be discharged with at the project site. Creating a policy at this site to include medication information sheets, incision care, and other vital discharge information should be discussed in the SDS Unit Council and would be easy to enact. A standardized policy of discharge would ensure each patient is presented with the information necessary to care for themselves after surgery.

Preoperative education is a relatively new area of research, especially in the ASC setting. Evaluation of patient education and resulting health and economic impacts can assist in guiding ways to utilize resources more effectively. Effectiveness of a program or intervention and cost often play a role in deciding between patient interventions. If video education can

demonstrate improved patient outcomes and reduce costs, then it will guide institutions in ways to better allocate resources. This project focused on one clinical site, however, it is possible that larger studies of video education in the ambulatory care setting could be expanded nationwide and include a variety of surgical specialties.

This project demonstrated that more research is needed in the ACS on the most effective way to educate patients, the best timing for that education, and increased nursing presence leading patient education research. The goal is that emphasis on patient education would lead to the integration of supplementary video education into the standard care pathway. Placing a focus on discharge education within the site would create a culture of safety that would ensure that patients leave well prepared for home care. Engaging surgical committees within the SDS to standardize education and discharge orders would foster an environment where patients would be provided a complete discharge package that would engage them no matter their health literacy or educational level. The next step in a future project of improved discharge teaching would be to expand the video series to include other common surgeries. Gathering data over an extended period of time to evaluate whether the video series ultimately improves patient satisfaction based on Press Ganey scores, lowers adverse events or readmissions, and increases communication between the healthcare staff and patient.

Dissemination

Site and DNP Committee Reporting

The clinical site including site champion, surgeons, department managers, and nursing staff were notified of project completion. Dissemination of findings to the site will be at the yearly research poster presentation day which is 4/20/22. This will take place virtually this year due to the pandemic. An invitation will be sent to key stakeholders to attend. There will be an

opportunity for viewers to ask questions of the PI about the project.

Professional Reporting

Dissemination for this project will be held on April 19th virtually for faculty, peers, and other invited attendees through University of Arkansas. Dissemination will also include uploading the project to Cox Health Scholar Works which is an online data repository for internal research and participation in the Poster Hall event at University of Arkansas prior to graduation.

Conclusion

There is a lack of research on the impact of patient education and preparedness in the ASC setting. Education given in multimodalities can engage patients with multiple learning styles and at many different health literacy levels, in turn improving patient safety, comprehension and satisfaction. Education leads to improved patient outcomes and reduced costs. This DNP project aimed to add knowledge to the nursing profession by highlighting the importance of education in relation to patient preparedness for surgery, recovery, and self-care. There was in increase in patient perceived preparedness for discharge, a reduction in the length of stay postoperatively, and attainment of stated pain goal at discharge with video based education. If patients are prepared for surgery, recovery, and self-care, then they are less likely to need additional discharge time, have decreased adverse events, and feel more confident when they return home. Further research should address the most effective modality of education in the ambulatory care setting, timing of education in relation to surgery, and explore how education impacts patient outcomes in this unique and growing healthcare environment.

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https://apps.who.int/iris/bitstream/handle/10665/252272/9789241511599-eng.pdf

Zebulon, W. (2020). Effects of video discharge instructions on patient understanding. A prospective, randomized trial. *Advanced Emergency Nursing Journal*, *42*(1), 71-78. https://doi.org/ 10.1097/TME.000000000000027

Appendix A

Educational Video

Learning Objectives

1. To improve knowledge and comprehension of the procedure.

2. To increase comprehension of how to care for oneself after discharge.

3. To improve knowledge of complications that one should notify the surgeon of.

4. To improve understanding of what to expect the day of surgery and going home.

5. To stress the importance of when to seek immediate care and follow-up care.

Outline

What is your gallbladder?

- Laparoscopic gallbladder removal brief information

What to expect in your pre-op room before your procedure

What to expect in recovery

- Pain
- Preparing to go home

Discharge Instructions

- After general anesthesia
- ***Pain***
- Nausea/Vomiting
- ***Activities***
- Eating and drinking
- Constipation/Diarrhea

- Incision care

When to call your doctor/surgeon or seek immediate medical care.

Follow-up care.

*** This video is intended to provide a general overview of your procedure, recovery, and care at home. It is not intended to serve as a substitute for professional medical care or a discussion between you and your surgeon about the need for a surgery or patient specific instructions at home after your surgery written by the surgeon. If you have questions about your operation, home care or subsequent follow up, please discuss them with your surgeon or nursing staff before your procedure or prior to discharge (American College of Surgeons, 2015; Society of American Gastrointestinal and Endoscopic Surgeons, 2019).

Appendix B

Preoperative Preparedness for Discharge Questionnaire

Please Rate the following	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat agree	Agree	Strongly Agree
1. The education I have received so far was helpful and adequate.						
2. The education I have received so far helped prepare me for my surgery.						
3. The education I have received so far was clear and easy to read/understand.						
4. Overall I am satisfied with the education I have received so far.						
5. I understand the purpose and benefits of my planned surgery.						
6. I feel prepared for what to expect after my surgery while I am in the postsurgical unit.						
7. I feel prepared for what to expect after my surgery when I go home.						
8. The educational information so far has answered my questions.						
9. My doctors and nurses have spent enough time preparing me for my						

upcoming surgery.						
10. Overall I feel prepared for my planned surgery.						

*Modified from the original Preoperative Preparedness Survey by Kenton et al. (2007).

What is your current age?

- 18-29
- 30-45
- 46-60
- 61-75
- 75+

What is your highest level of education?

- Did not complete high school
- High school graduate
- Some college
- College graduate
- Graduate school
- Prefer not to say

11. What is your gender?

- Male
- Female
- Prefer not to say

Appendix C

Postoperative Preparedness for Discharge Questionnaire

Please Rate the following	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat agree	Agree	Strongly Agree
1. The education I have received so far was helpful and adequate.						
2. The education I have received so far helped prepare me for my surgery.						
3. The education I have received so far was clear and easy to read/understand.						
4. Overall I am satisfied with the education I have received so far.						
5. I understand the purpose and benefits of my planned surgery.						
6. I feel prepared for what to expect after my surgery while I am in the postsurgical unit.						
7. I feel prepared for what to expect after my surgery when I go home.						
8. The educational information so far has answered my questions.						

9. My doctors and nurses have spent enough time preparing me for my upcoming surgery.						
10. Overall I feel prepared for my planned surgery.						

*Modified from the original Preoperative Preparedness Survey by Kenton et al. (2007).

Appendix D

Permission to Utilize Survey

Dr. Kimberly Kenton

Professor, Obstetrics & Gynecology and Urology

Division Chief & Fellowship Program Director, Female Pelvic Medicine & Reconstructive Surgery

Medical Director, Woman's Integrated Pelvic Health Program

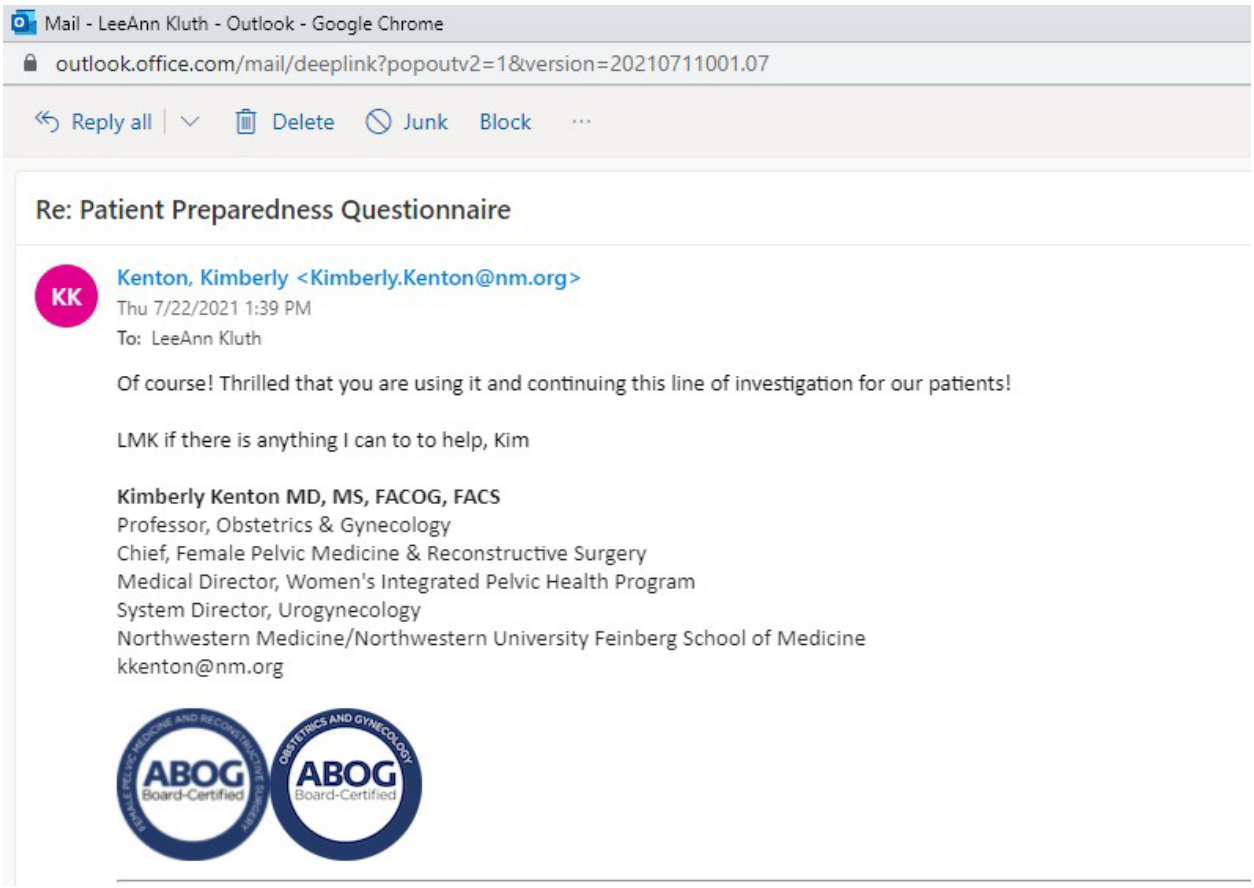
Northwestern Medicine/Northwestern University Feinberg School of Medicine

Dr. Kenton,

I am requesting written permission to use the Preoperative Preparedness Questionnaire - Table 2 in the research article Patient preparedness: an important predictor of surgical outcome. I plan to use the tool for my doctoral scholarly project through the University of Arkansas titled "Utilizing Technology to Improve Patient Satisfaction in the Perioperative Ambulatory Setting." This quality improvement project will take place at Cox Health in October-November 2021 in Springfield, Mo. I plan to publish my manuscript 2022.

Thank you,

LeeAnn Kluth, MSN, RN


Mail - LeeAnn Kluth - Outlook - Google Chrome
outlook.office.com/mail/deeplink?popoutv2=1&version=20210711001.07
Reply all
Delete
Junk
Block
Re: Patient Preparedness Questionnaire
KK
Kenton, Kimberly <Kimberly.Kenton@nm.org>
Thu 7/22/2021 1:39 PM
To: LeeAnn Kluth
Of course! Thrilled that you are using it and continuing this line of investigation for our patients!
LMK if there is anything I can to to help, Kim
Kimberly Kenton MD, MS, FACOG, FACS
Professor, Obstetrics & Gynecology
Chief, Female Pelvic Medicine & Reconstructive Surgery
Medical Director, Women's Integrated Pelvic Health Program
System Director, Urogynecology
Northwestern Medicine/Northwestern University Feinberg School of Medicine
kkenton@nm.org
ABOG
Board-Certified
ABOG
Board-Certified

Appendix E

Global AIM Statement

Write a Theme for Improvement:

_____

Global Aim Statement

Create an aim statement that will help keep your focus clear and your work productive:

We aim to improve: Patient satisfaction through increasing patient knowledge and readiness for discharge.

In: Cox South Same Day Surgery Department.

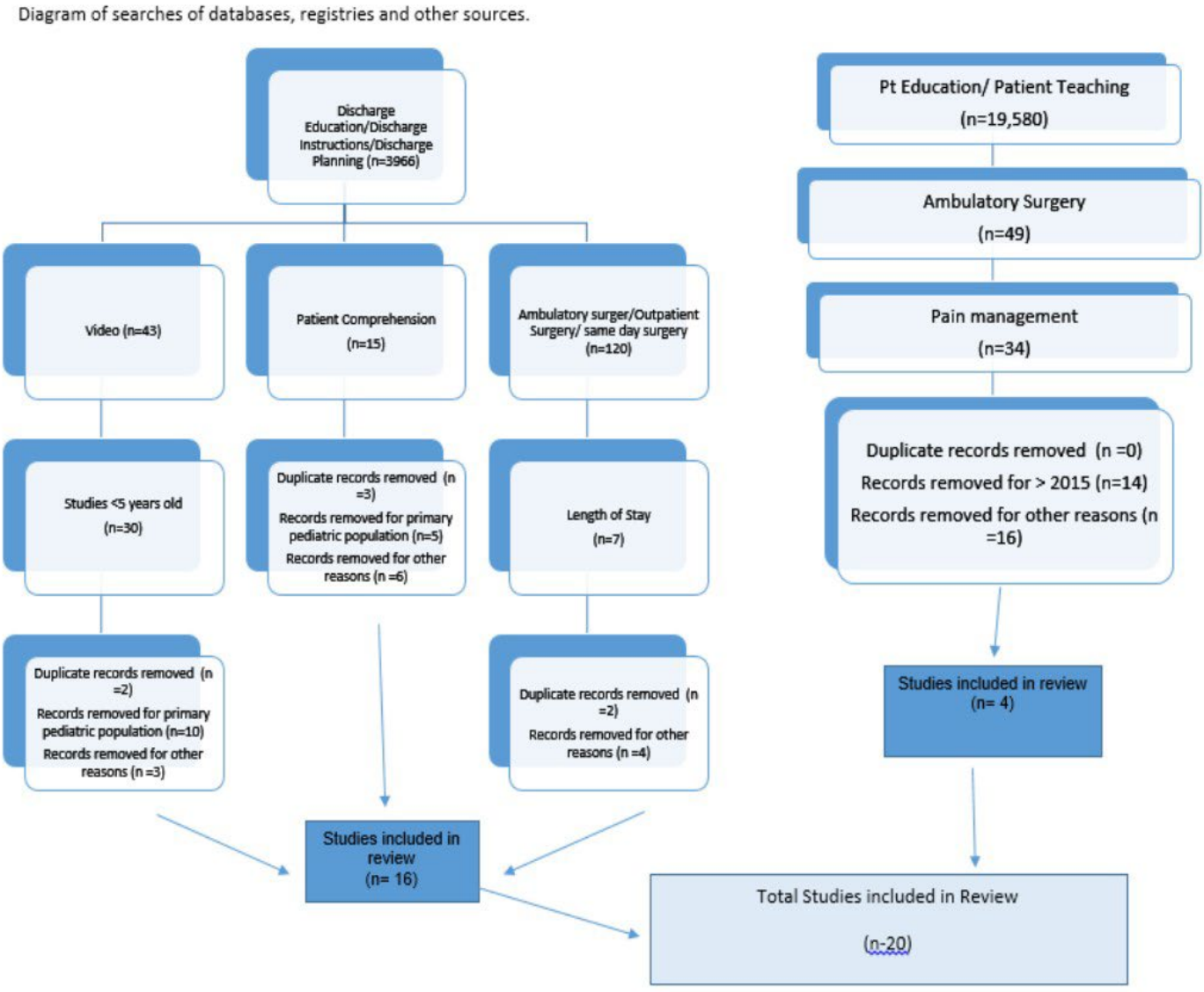
The process begins with: evaluating current standards of care, current policies, patient flow, and staff concerns.

The process ends with: providing standardized pre-operative education through the use of video education.

By working on the process, we expect: Improvement in the patients knowledge of discharge instructions, improved ability and confidence to care for oneself at home, improved patient satisfaction, and improved communication between staff and patient.

Appendix F

Review of Literature Flow Sheet



Appendix G

Review of Literature

Author	Year	Country study took place in	Theory guiding the study	Independent or Treatment Variable(s)	Dependent or Outcome Variable(s)	Design type	Sample (N =) Method	Data Collection tools	Brief Summary of Results	Strength of evidence
Atlas, Milanese, Grimmer, Barras, & Stephens	2019	Australia	Arksey and O'Malley Methodology	NA	NA	Systemic Review	n=26		There is extensive variability in the sources patients use to gather information prior to surgery. In person interaction with medical staff is the most common, leaving standardization of information data lacking.	III

Best, J., Musgrave, B., Pratt, K., Hill, R., Evans, C., & Corbett, D.	2018	USA	Quality-caring Model	Scripted Pain management education	Pain, perception and pain knowledge	Pre-post test	N=100	Follow-up phone call to study participants with scripted questions.	Pain education helpful in improving postoperative pain management. Patients reported feeling more confident with knowing what to expect.	IV
Carr, D., Saigal, R., Zhang, F., Bransford, R., Bellabarba, C., & Dagal, A.	2019	USA	No theory listed	Enhanced preoperative education care pathway	Length of stay and cost	Randomized controlled trial	N=626	mean length of stay and direct costs	Increased perioperative care which included improved care coordination, perioperative patient education, multimodal analgesia, and active preoperative warming decreased length of stay and cost.	II

Chang, S.C., Huang, C.Y., Lin, C.H., Tu, S.L., Chao, M.S., & Chen, M.H.	2015	USA	No theory listed	Comprehensive educational pamphlets and video education	Patient knowledge and skill level on NG tube feedings	Cohort	N=127	Patient question naire/ pre and post test	Use of a comprehensive educational pamphlet and video education significantly improved patient knowledge and skill level in regards to tube feedings prior to discharge.	III
Gonella, S., Delfino, C., Rolfo, M., Rizzo, A., Esposito, V., Berchialla, P., and Campagna, S.	2021	USA	No theory listed	Video based preoperative education intervention plus nurse led reinforcement discussion	Patient knowledge, self-efficacy and resilience	Cohort	N=97	Self-reported plus question naire	Providing a video based preoperative education intervention plus having a nurse led reinforcement discussion postoperatively resulted in an increase in patient knowledge of surgical procedure, and increase in self-reported efficacy levels, with no change in reported or measured resilience.	III

Green, J., & Bernhofer, E. I.	2018	USA	Knowles Theory of Andragogy	Multimodal education (pamphlet, video, written)	Patient knowledge	Randomized controlled trial	N=66	Pre-post test	Higher knowledge score on ability to identify and prevent thromboembolism in the multimodal education group. Subjects also stated they prefer teaching preoperatively instead of post.	III
Greene, K., Wyman, A., Scott, L., Hart, S., Hoyte, L., & Bassaly, R.	2017	USA	No theory listed	preoperative educational video	patient preparedness	single-blind randomized control trial	N=100	Questionnaire	The use of the video did not increase patient preparedness for surgery. Time spent with the patient by the healthcare team had a greater impact on scores than the video.	IV
Hoek, A., Van Der Hamer, M., Deelstra, C., vanBeeck, E.,	2017	USA	No theory listed	Education Video discharge teaching	Patients satisfaction	Cohort	N=150	Questionnaire	Video discharge teaching is a valuable addition to written and oral discharge teaching.	IV

Dippel, D, Haagsma, J and Rood, P.										
Holland, C., Foster, P., Ulrich, D., & Adkins, K.	2017	USA	No theory listed	Educational Video	Surgical site infections	Case report and series	N= all C-section patients over a 3 year period	Surgical site infection rates	The educational video resulted in a decrease of surgical site infections when compared to standard education with written material.	IV
Hovsepian, J., McGah, C., & O'Brien, C.	2017	USA	No listed theory	Discharge instructions given preoperatively	Patient satisfaction and information retention	Cohort	N=432	Patient survey	Providing written and video discharge teaching preoperatively resulted in an increase in patient satisfaction scores and increased preparedness for self-care scores	II

Kang, E., Gillespie, B. M., Tobiano, G., & Chaboyer, W.	2020	USA	No listed theory	No intervention		Case report	N=18	Patient telephone Interview	The quality of discharge education influences patient satisfaction, quality of education is variable, discharge recommendations are unclear, wanting access to information on demand, and desiring information early on and more frequently.	III
Newnham, H., Barker, A., Ritchie, E., Hitchcock, K., Gibbs, H., and Holton, S.	2017	worldwide	No theory listed			Systemic Review	N=30 studies		Utilizing technology to deliver discharge information is preferred by patients and improves understanding about their medical information and discharge instructions.	II

Odem-Forren, J., Reed, D., & Rush, C.	2018	USA	Individual and Family Self-Management Theory	No Intervention	Goal to elicit an understanding of frequent postoperative symptoms from laparoscopic cholecystectomy patients and their caregivers	A qualitative descriptive study	N=13	Focus group	Most common postoperative symptom was pain. Preferred to be educated on realistic pain expectations. Much of the discussion on postoperative pain was minimized. Other distressful symptoms included nausea and vomiting, questions about incision care, mobility, and elimination issues. Caregivers described stress and knowledge deficits as burdens of being a caregiver.	IV

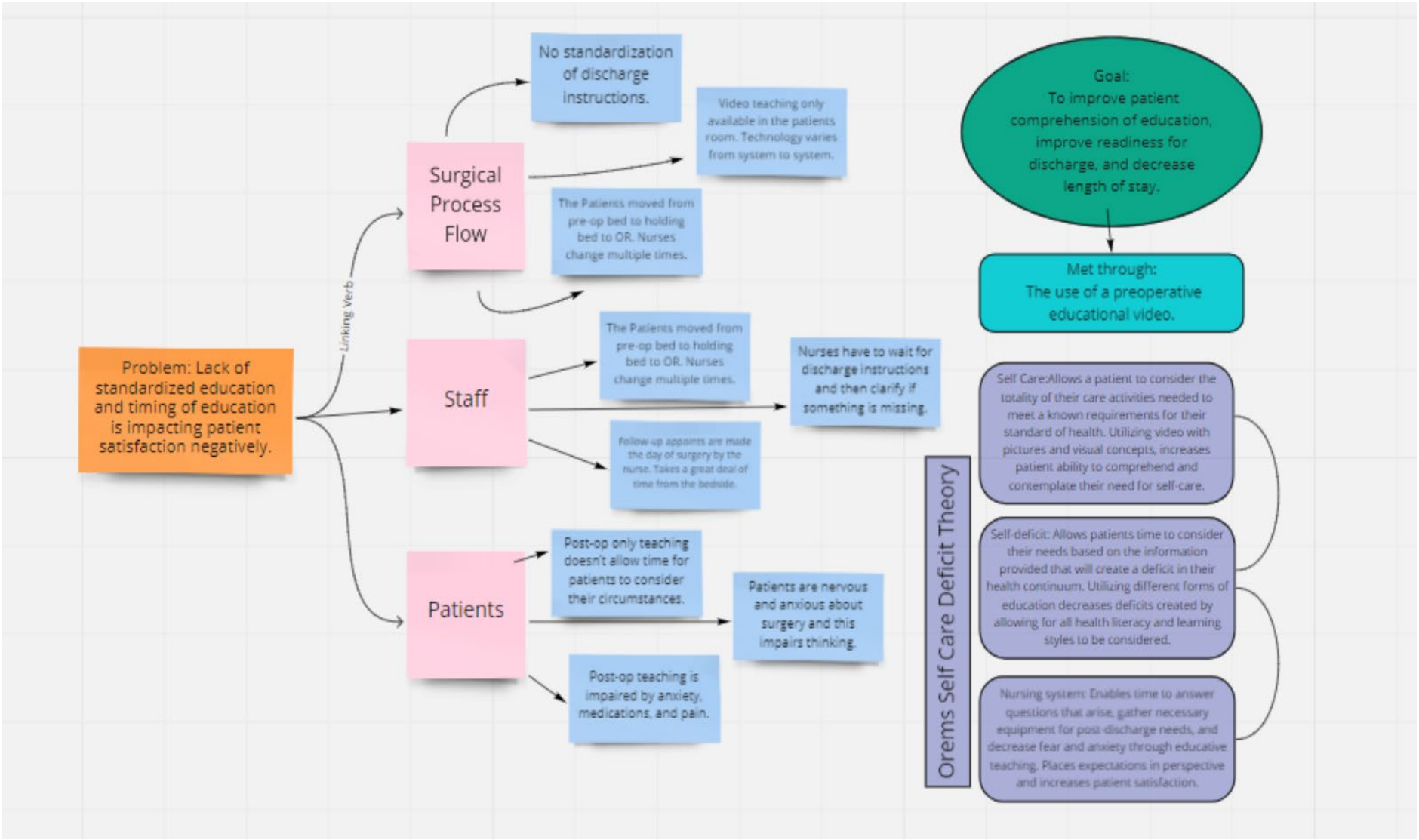
O'Donnell	2017	USA	The Iowa Model	1:1 verbal education on pain management and medications	Pain management knowledge and outcomes	Cohort	N=99	Question naire	Sadistically significant results were found in questions pertaining to knowledge of side effects, methods of pain management, and pain and mood. Results point to preoperative education improving pain perception and management in patients.	III
Rapp, A., Sun, M., Weissman, H., Perez-Cruet, M & Fahim, D.	2020	USA	No theory listed	Pre-operative education class	HCAHPS scores, postoperative pain, and length of stay	Cohort	N=229	Chart review	Pre-operative education did not improve post-operative pain scores, decrease length of stay or improve HCAHPS scores	IV

Resop Reilly, J. E., Tyczkowski, B., & Murley, S.	2019	USA	No theory listed	Pain education regarding pain management preoperatively	Pain satisfaction with postoperative pain	Cohort	N=17	Press Ganey survey scores on pain and satisfacti on	The mean pain management score in the pre-post intervention groups was 4.76 and 4.88. Reduction in patients perceptions of post-operative pain was statistically significant	IV
Sheele, J. M., Bhangu, J., Wilson, A., & Mandac, E.	2019	USA	No theory listed	Video discharge instructions	Information retention	Cohort	N=196	Patient Survey	The majority of patients preferred receiving discharge instructions and information in video or video plus written format over written format alone.	II
Soydaş Yeşilyurt, D., & Yildiz Findik, Ü.	2019	USA	No theory listed	Perioperative educational video	Anxiety levels	Cohort	N=70	Patient Question naire	Use of perioperative educational video decreased patients anxiety levels before surgery	II

Villamin, C., & Berg, K.	2018	USA	No theory listed	Discharge video	Patient satisfaction and confidence	Cohort	N=780	HCAHPS patient satisfactions survey scores	Patient satisfaction scores based on HCAHPS reported score were markedly improved post introduction of the educational video.	IV
Wilkin, Z. L.	2020	USA	No theory listed	Video discharge instructions	Patient understanding of discharge instructions	Prospective, randomized, controlled trial	N=60	Patient survey	Video discharge teaching improved patient understanding and retention of discharge instructions.	II

Appendix H

Concept Map


Problem: Lack of standardized education and timing of education is impacting patient satisfaction negatively.
Linking Verb
Surgical Process Flow
No standardization of discharge instructions.
Video teaching only available in the patients room. Technology varies from system to system.
The Patients moved from pre-op bed to holding bed to OR. Nurses change multiple times.
Staff
The Patients moved from pre-op bed to holding bed to OR. Nurses change multiple times.
Nurses have to wait for discharge instructions and then clarify if something is missing.
Follow up appoints are made the day of surgery by the nurse. Takes a great deal of time from the bedside.
Patients
Post-op only teaching doesn't allow time for patients to consider their circumstances.
Patients are nervous and anxious about surgery and this impairs thinking.
Post-op teaching is impaired by anxiety, medications, and pain.
Goal:
To improve patient comprehension of education, improve readiness for discharge, and decrease length of stay.
Met through:
The use of a preoperative educational video.
Orems Self Care Deficit Theory
Self Care:Allows a patient to consider the totality of their care activities needed to meet a known requirements for their standard of health. Utilizing video with pictures and visual concepts, increases patient ability to comprehend and contemplate their need for self-care.
Self-deficit: Allows patients time to consider their needs based on the information provided that will create a deficit in their health continuum. Utilizing different forms of education decreases deficits created by allowing for all health literacy and learning styles to be considered.
Nursing system: Enables time to answer questions that arise, gather necessary equipment for post-discharge needs, and decrease fear and anxiety through educative teaching. Places expectations in perspective and increases patient satisfaction.

Appendix I

IRB Approvals

UNIVERSITY OF ARKANSAS

To:	LeeAnn Kluth
From:	Justin R Chimka, Chair IRB Expedited Review
Date:	11/12/2021
Action:	**Exemption Granted**
Action Date:	11/12/2021
Protocol #:	2109360403
Study Title:	Improving Patient Discharge in the Ambulatory Surgical Setting with a Preoperative Educational Video

The above-referenced protocol has been determined to be exempt.

If you wish to make any modifications in the approved protocol that may affect the level of risk to your participants, you must seek approval prior to implementing those changes. All modifications must provide sufficient detail to assess the impact of the change.

If you have any questions or need any assistance from the IRB, please contact the IRB Coordinator at 109 MLKG Building, 5-2208, or irb@uark.edu.

cc: Thomas A Kippenbrock, Investigator

Cox Center for Research
3800 S. National Ave #540
Springfield, MO 65807
(417) 269-7114

DATE: December 1, 2021

TO: LeeAnn Kluth (lkluth@uark.edu)

STUDY TITLE: Improving Patient Discharge in the Ambulatory Surgical Setting with a Preoperative Educational Video

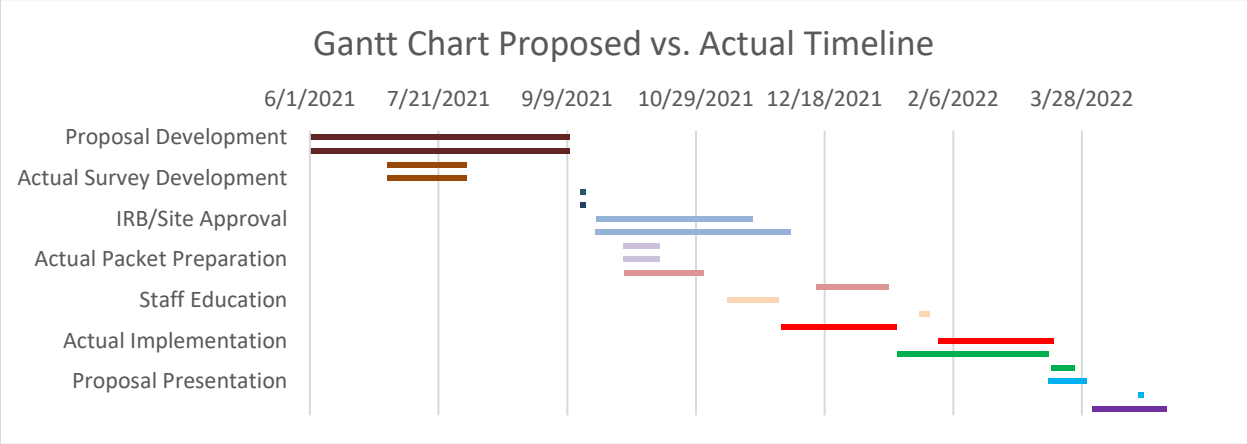
This project is exempt from IRB review as described in 45 CFR part 46.104(d)(2)(i) because it is a survey procedure in which the information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.

This means you may implement your project as described in the application. Any deviations or changes in implementation must be reported to the center for research as it may change the opinion above. You must also report any problems or complaints promptly to Cox' Center for research. Please inform the Center for Research at CRIRegulatory@coxhealth.com when the study is completed, or one year from the date above.

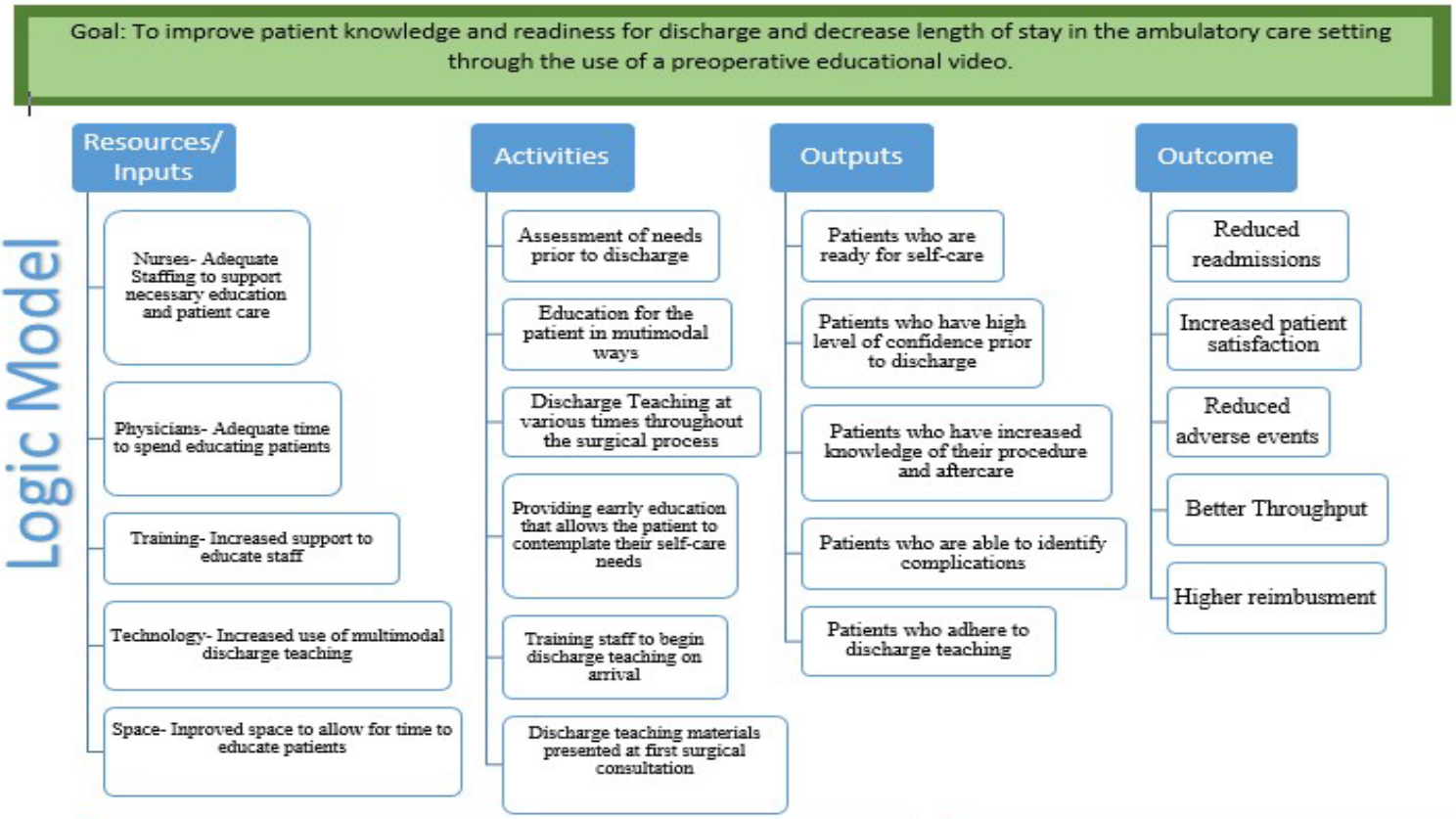
You may retain a copy of this letter for your records.

Chris Schulze

Appendix J


Gantt Chart Proposed vs. Actual Timeline
6/1/2021
7/21/2021
9/9/2021
10/29/2021
12/18/2021
2/6/2022
3/28/2022
Proposal Development
Actual Survey Development
IRB/Site Approval
Actual Packet Preparation
Staff Education
Actual Implementation
Proposal Presentation

Appendix K


Goal: To improve patient knowledge and readiness for discharge and decrease length of stay in the ambulatory care setting through the use of a preoperative educational video.
Logic Model
Resources/ Inputs
Nurses- Adequate Staffing to support necessary education and patient care
Physicians- Adequate time to spend educating patients
Training- Increased support to educate staff
Technology- Increased use of multimodal discharge teaching
Space- Inproved space to allow for time to educate patients
Activities
Assessment of needs prior to discharge
Education for the patient in mutimodal ways
Discharge Teaching at various times throughout the surgical process
Providing earrly education that allows the patient to contemplate their self-care needs
Training staff to begin discharge teaching on arrival
Discharge teaching materials presented at first surgical consultation
Outputs
Patients who are ready for self-care
Patients who have high level of confidence prior to discharge
Patients who have increased knowledge of their procedure and aftercare
Patients who are able to identify complications
Patients who adhere to discharge teaching
Outcome
Reduced readmissions
Increased patient satisfaction
Reduced adverse events
Better Throughput
Higher reimbusment
Assumptions:
Increased education will help throughput by decreasing time for reinforcement of education.
Education provided preoperatively will increase patient knowledge and comprehension.
Preoperative education will increase patient satisfaction.
Staff will spend less time educating the patient on new self-care activities and focus time on teach-back and clarifying questions.
Increased cost to produce videos will pay for itself with increased reimbursement rates.
External factors:
Physician buy-in to offering more preoperative education
the preoperative appointment.
Unfamiliarity with technology.
Budgetary concerns.
Staff time and training.
Need for additional technology.
Management support.
Some staff are resistant to change of any kind.
Worry that additional education will add to workload.

Appendix L

Recruitment Script

Hello (patient)_,

My name is LeeAnn Kluth I am conducting a voluntary study today to improve discharge comprehension and readiness in the same day surgical unit. You are being asked to participate in this voluntary research study about the effects a pre-operative educational video has on readiness for a particular procedure and ultimately on readiness for home self-care. I am an acute care nurse practitioner student in the doctoral program at the Eleanor Mann School of Nursing at the University of Arkansas. This study is being conducted as part of a doctoral graduate project. You were selected as a possible participant in this study because you are undergoing an elective LC today.

There are no known risks if you decide to participate in this research study. There are no costs to you for participating in the study and no compensation for participating. The information you provide will assist in determining if alternate forms of educational material provided prior to surgery effects readiness for discharge, pain goal attainment, and ultimately patient satisfaction. Your participation would include an initial pain goal score, pre-operative readiness survey, a short educational video to view, and a post video readiness survey. This will all be completed prior to your procedure. A final pain score will also be recorded at discharge. The questionnaire will take about approximately 5-10 minutes to complete and the video is approximately 7 minutes. The information collected may not benefit you directly, but the information learned in this study will provide general benefits to the same day surgical patient educational process.

This survey is anonymous. Do not write your name on the survey. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study.

Individuals from Cox Health and/or the Institutional Review Board may inspect these records if needed. Should the data be published, no individual information will be disclosed.

Your participation in this study is voluntary. By viewing the video and completing the survey you are voluntarily agreeing to participate. You are free to decline to answer any particular question you do not wish to answer for any reason. Declining to participate in this research study will not adversely affect any relationship with the University of Arkansas researchers, unit staff, or Cox Health.

If you have any concerns or questions about the study please contact:

Principle Investigator

LeeAnn Kluth

5704 N Vintage Dr.

Ozark, Mo. 65721

lkluth@uark.edu

Faculty Chair

Thomas A. Kippenbrock

University of Arkansas

1125 West Maple Street

Fayetteville, AR. 72701

479-575-4560

tkippen@uark.edu

If you have any concerns about your rights as a research participant, please contact:

Ro Windwalker

Human Subjects Compliance Coordinator

University of Arkansas

1125 West Maple Street

Fayetteville, AR. 72701

479-575-2208

irb@uark.edu

Appendix M

Instruction Sheet

If you agree to participate follow these steps:

1. Carefully read this instruction sheet

2. Fill out the **Preoperative Preparedness for Discharge** questionnaire

3. View the video- using your smartphone

    - Hold your device over a QR Code so that it's clearly visible within your smartphone's screen.

    -Two things can happen when you correctly hold your smartphone over a QR Code.

        1. The phone automatically scans the code.
        2. On some readers, you have to press a button to snap a picture, not unlike the button on your smartphone camera.

    -If necessary, press the button.

*** Presto! Your smartphone reads the code and takes you to the intended destination. Although it may take a few seconds on most devices.

-If you do not have a smartphone with you, an IPad will be provided so you can view the video. Simply let a staff member know.

5. When you have finished watching the video you will fill out the:

- **Postoperative Preparedness for Discharge** questionnaire

6. When you are done, place the questionnaires back in the packet and give to your nurse. You may keep the rest. The QR code is yours for viewing the video again or at home if you would like.

Thank you for your consideration

Appendix N

QR Code

Appendix O

Statement of Mutual Agreement

UNIVERSITY OF ARKANSAS
College of Education and Health Professions
Eleanor Mann School of Nursing

Appendix B: Statement of Mutual Agreement for DNP Guidance

DNP Student Name: __LeeAnn Kluth_____ Clinical Site or Agency: ____Cox Health_____

DNP Committee Chair: ___Dr. Kippenbrock____ Site Champion Name & Title: Jade Burgess, Med-Surg Educator, Educational Services

DNP Project Title: ___ Improving Patient Discharge in the Ambulatory Surgical Setting with a Preoperative Educational Video

Expected On-Site Activities: __. This project will utilize a pre-test/post-test survey to investigate changes in participants' state of preparedness for surgery and discharge prior to and after watching the video intervention. This project will measure length of stay in minutes from the time a patient enters the postoperative area until their official discharge time. This will be compared to the prior month's data of length of stay for laparoscopic cholecystectomy patients as a percentage change and compared to the national average. Stated pain score at discharge on the NRS will also be measured and compared with the patients stated pain NRS goal when queried on arrival to their preoperative room.

Agency Approval for Presentations and Publications:

- How agency will be referenced: __CoxHealth_____
- Approval granted to use agency name in presentations/ publications: ___yes_____
- Approval granted to use agency name in the University of Arkansas DNP Project Scholar Works online repository: ____yes_____
- Is IRB submission required at site? ____ Yes _X_ No

DNP Student Signature: LeeAnn Kluth Date: 10/1/21

Site Champion Signature Jade C. Burgess Date: 10/1/2021

1

Committee Chair Signature: Dr. Kippenbrock Date: October 01, 2021

Preceptor Signature: Date: 10/01/21