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Telephone Follow-Up to Reduce the Readmission Rate in Gynecologic Oncology Surgery Patients

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Telephone Follow-Up to Reduce the Readmission Rate in Gynecologic Oncology
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Abstract

Unplanned hospital readmissions are commonly viewed as a marker of poor quality care and result in increased costs for both healthcare institutions and patients. Factors associated with readmission for gynecological oncology patients can be related to the radical surgical interventions required for the management of their disease, as well as complex comorbidity profiles, surgical complexity, cancer stage, and perioperative complications. The purpose of this study was to explore and examine the impact of nursing-led telephone follow up on the reduction of the readmission rate in gynecologic oncology abdominal surgery patients following initial discharge post-operatively. A cross-sectional research study was used to examine the relationship between the use of post discharge follow-up calls (intervention group versus control group) and 30-day readmission (yes/no) using chi-squared test for all categorical variables, and two sample t-tests for continuous variables. Variables were compared between the experimental and control groups given the potential association with the outcome of interest (readmission), including age, body mass index (BMI), comorbidities, tobacco use, performance status using the Eastern Cooperative Oncology Group (ECOG) status, length of surgery, estimated blood loss, perioperative blood transfusion, formation of ostomy, and length of hospital stay of one day or greater than one day duration. There were no significant differences found between the control group and experimental groups and each variable. There are future implications of this study surrounding the profound importance of the involvement of nursing staff in improvement in discharge teaching, transitions of care, and the patient experience. Evidenced-based practices are needed to improve the health and safety of the patients we care for.

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CHAPTER I

Introduction

Hospital readmissions within 30 days of initial hospital discharge have been identified as an area of interest to reduce healthcare costs, as well as an opportunity to address the quality of care being delivered to patients. Unplanned readmissions are costly to both patients and the healthcare system in the United States (Henretta, Scalici, Engelhard, & Duska, 2011). The Centers for Medicare and Medicaid Services (CMS) use public reporting of readmission data and payment penalties as an incentive to encourage hospitals to reduce their readmission rates. More recently, CMS developed an all-condition, 30-day all-cause hospital-wide readmission measure (HWR) in an effort to target a higher percentage of hospital admissions and lower the hospital readmission rate (Rosen et al., 2016). All hospitals should explore readmission reduction strategies to minimize the negative impact of reimbursement penalties associated with 30 day readmissions. Nurse led telephone follow-up after discharge allows for an early assessment of the patient's status since discharge and offers an opportunity for clarification, additional education, guidance, and intervention based on the patient's response to designated questions (Miller & Schaper, 2015).

Significance

Gynecological malignancies are a group of cancers that affect the tissues and organs of the female reproductive tract. Nearly 106,000 women were diagnosed with a gynecological malignancy in 2016 (Society of Gynecologic Oncology [SGO], 2016). Gynecological cancers can arise from infectious disease, such as Human Papillomavirus (HPV); inherited genetic mutations, such as BReast CAncer Susceptibility Genes 1 and 2

(BRCA1, BRCA2) and Lynch syndrome; as well as, association with obesity, smoking, and Diethylstilbestrol (DES) exposure. The symptoms, diagnosis, treatment, and prognosis of gynecological malignancies vary depending on the site of origin.

Endometrial cancer is the most common gynecological cancer in the United States (SGO, 2016). While endometrial cancer may be associated with Lynch Syndrome, a higher percentage of endometrial cancer cases are associated with obesity, which can increase a woman's risk of developing endometrial cancer ten-fold. The growing obesity epidemic in the United States likely is reflected in the rise in endometrial cancer. In 2013, 50,560 women in the Unites States were diagnosed with a cancer of uterine origin, with 9,325 resultant deaths (Centers for Disease Control [CDC], 2016).

Nearly 70% of cervical cancers are caused by two high risk strains of HPV, HPV 16 and HPV 18 (CDC, 2016). Cervical cancer is considered a highly preventable form of gynecological malignancy in most Western countries given the screening tools, the pap smear, and the HPV test; as well as a vaccine to prevent HPV infections. When diagnosed early, cervical cancer is considered to be a highly treatable gynecological malignancy and is associated with a long survival and a good quality of life. In 2013, 11,955 women in the United States were diagnosed with cervical cancer, with 4,217 resultant deaths (CDC, 2016).

Ovarian cancer is the ninth most common gynecologic cancer and also the most lethal of gynecologic malignancies. Early diagnosis offers the greatest chance for successful treatment. Many ovarian cancers are diagnosed in later stage disease. A significant increase in the inherited risk of developing breast, ovarian, fallopian tube, and primary peritoneal cancers is associated with the inherited genetic mutations, BRCA 1

and BRCA 2 (SGO, 2016). Optimal cytoreduction, the removal of all visible disease and as many cancer cells as possible, at the time of surgery is linked to prognosis and overall survival. In 2013, 20,927 women in the United States were diagnosed with ovarian cancer, with 14,276 women succumbing to this disease (CDC, 2016).

Surgery plays a significant role in the treatment and management of gynecologic malignancies in both curative and palliative cases. Though minimally invasive surgery and laparoscopic surgery are prevalent, laparotomy remains a very common practice in advanced gynecological malignancy cases, large pelvic masses, complex gynecological conditions, and in instances of morbid obesity where minimally invasive techniques will not be successful. Patients with advanced gynecologic malignancies are at a higher risk for the need for bowel resection with ostomy formation at the time of surgery. Despite pre-operative teaching in the outpatient gynecology office prior to surgery, and discharge teaching and instructions provided by the inpatient nursing staff and the gynecologic oncology residents prior to leaving the hospital, these patients are at risk for hospital readmission related to post-operative complications.

Compared with women undergoing surgery for other causes, women with gynecological malignancies are more likely to be older, obese, and have other comorbidities, placing them at a higher risk for hospital readmission following surgery. Readmission is defined as a return to the hospital within 30 days of discharge from initial admission. Factors associated with readmission for gynecological oncology patients can be related to the radical surgical intervention required for ovarian and cervical cancer. Other factors to be considered that may increase a patients' risk of readmission following surgery for gynecological malignancy include complex comorbidity profiles, surgical

complexity, cancer stage, and perioperative complications (Wilbur et al., 2016). Following major abdominal surgery, the most common reasons for readmission are associated with gastrointestinal (GI) disturbances and surgical site wound infections (SSI), wound complication, failure to thrive, and wound dehiscence. Common GI disturbances following major abdominal surgery include ileus, small bowel obstruction, and complications associated with dehydration from high ostomy output. Surgical site wound infections can range from superficial wound infection to deep or organ space infection (Wilbur et al., 2016). Patients who are diabetic or morbidly obese can be at higher risk for post-operative wound infections and delayed wound healing.

Post-operative complications can result in hospital readmission, of varying length of stay dependent on reason for readmission, which can be costly to both patients and institutions. Readmission to the hospital may result in a delay in adjuvant treatment which can negatively impact patient outcomes. Financial burden can also be associated with readmission for both the patient and the institution. Wilbur et al. (2016) reported the most common reasons for readmissions for gynecological surgery patients to be GI disturbance, 43.3%, and SSI/wound complication, 29.8%, with a mean cost of readmission $25,416, and total inpatient cost of $4,523,959, related to the 177 readmissions that occurred in their study period.

There remains insufficient and small amounts of readmission data of gynecological oncology surgery patients, in regards to contributing factors, pre-operative risks that contribute to those readmissions, as well as post-operative interventions that may reduce the readmission rate. Poor transitions of care, whether that be to home or to a skilled nursing facility, can create additional hardships for these patients and their

families and result in readmissions (Miller & Schaper, 2015). Solutions to these problems are not clearly defined though the introduction of nurse-led follow-up telephone calls following discharge of these highly complex patients may allow for early identification of problems, additional opportunities for guidance and education, and earlier interventions based on the findings from the calls. Nurse-led telephone follow-up is an affordable, patient-centered focus to offer support after initial hospital discharge following surgery (Miller & Schaper, 2015). In addition to addressing a variety of problems that patients experience in the first few weeks following discharge from the hospital, telephone follow-up (TFU) can improve patient satisfaction and decrease anxiety and uncertainty (Braun, Baidusi, Alroy, & Azzam, 2008).

Problem Statement

In 2000, the Institute of Medicine (IOM) released a report describing the current state of the healthcare system, with statistics revealing poor safety and poor quality of care. A subsequent report was issued which challenged healthcare providers to improve the safety and quality of care provided. A gap was identified in the safe transitions of patients from one setting to another (IOM, 2000). Unplanned hospital readmissions have been associated with poor quality and safety by the Agency of Healthcare Research and Quality (AHRQ, 2010).

Unplanned readmissions have become a major focus of hospitals, physicians, and policy makers as a measure of quality and in an effort to contain rising health care costs in the United States. Readmissions are viewed as a marker for poor quality care and result in increased costs for both the healthcare system and the patient (Wilbur et al., 2016). The Centers for Medicare and Medicaid Services (CMS) began requiring public

reporting of readmission rates for most acute care hospitals in the United States in 2009. CMS then initiated a shift in improved coordination of transitions of care in October of 2012 with The Hospital Readmissions Reduction Program contained in the Affordable Care Act which penalized hospitals up to 3% of their Medicare payments over the course of the next three years (Girroti, Shih, & Dimick, 2014). The 30-day readmission rate has become a common performance indicator for hospitals. Financial penalties for readmission have since been developed for surgical procedures, therefore expanded beyond medical conditions. The program was set forth by CMS in an effort to control the rising inpatient hospital costs as well as to increase the value of medical care provided to its' beneficiaries. Unplanned readmission to the hospital affected nearly one-fifth of Medicare beneficiaries in 2004, costing an estimated $17.4 billion in Medicare expenditures (Urbach, 2014).

Women with gynecological malignancies are at an inherently higher risk for readmission following surgery secondary to perioperative complications, the advanced age of this patient population, and complex comorbidity profiles. Common perioperative complications resulting in readmission in this population include GI disturbances and SSI/wound complications or wound disruptions (Wilbur et al., 2016). With the early identification of women who are at risk for readmission, interventions and improvement in care coordination may aid in the reduction of hospital readmission.

Zhang et al. (2013) described nurse-led telephone follow-up following initial hospital discharge as a convenient method to monitor patients' progress following discharge home, and to address the psychological and educational needs of patients. They go on to describe the benefits of nurse-led follow up calls to include improvements in

self-efficacy, coping behaviors, self-care behaviors, and quality of life. Patients may

have unmet needs following discharge and early nurse-led telephone follow-up, prior to

follow-up in the office, may lead to early identification of problems and educational

needs and allow for interventions that may prevent readmission. It is beneficial for nurses

performing the calls to specialize in the field and to provide the most accurate answers

and make the appropriate referrals. Nurses performing telephone follow-up may also

provide reassurance and psychosocial support (Zhang et al., 2013). Nurse led-telephone

follow-up can be a convenient and affordable intervention that can further provide access

to care and improve patient satisfaction.

Purpose

The purpose of this study was to explore the reduction in readmission rates of

gynecologic oncology abdominal surgery patients with nurse-led telephone follow-up

following initial discharge following surgery. Gynecologic oncology surgical patients are

complex in nature representing a group of patients at high risk for readmission. Nurse-led

follow-up telephone calls were made to all gynecology abdominal surgery patients,

including laparotomies and laparoscopies, within 48 hours of initial hospital discharge

and again in five to seven days. The telephone calls served to evaluate patients and

identify potential post-operative complications, which allow for early intervention of

post-operative complications. There are many care transition programs that include post-

discharge calls as part of their intervention bundle, though there is inconclusive

information regarding the use of nurse-led post-discharge calls as part of an independent

intervention to reduce hospital readmission rates (Harrison, Auerbach, Quinn, Kynoch, &

Mourad, 2014). The potential implications of this study included decreasing post-

operative hospital readmission rates and healthcare costs, decreasing severity of adverse events, and enhancing patient satisfaction and knowledge of self-care. Improved awareness of the high risk nature of the patients may aid outpatient nurses in addressing any potential concerns and providing support, information, and additional education (Miller & Schaper, 2015). In addition, telephone follow-up allows for confirmation of patient appointments reducing the potential for loss to follow-up (LTFU).

Research Question

Current practice for gynecologic surgery patients includes pre-operative teaching with an outpatient oncology nurse in the outpatient office setting the day of signing consent for surgery. A pre-operative teaching sheet is provided for the patient to take home. Post-operative teaching is performed by the inpatient oncology nurse at the time of discharge. Post-operative instructions are provided for the patient to take home at the time of discharge, which includes a medication list with instructions on how to take medications. Patients are given a post-operative appointment to see the gynecologic oncologist in the office in 10 to 14 days following discharge. This hospital follow-up visit includes a physical exam, staple removal as appropriate, and review of the surgical pathology. However, prior to the appointment with the provider, a large number of patients call the triage nurse to discuss concerns such as GI disturbance, vaginal bleeding or discharge, and medication directions. Readmissions occur following surgery for multiple reasons to include post-operative SSI/wound complications and wound disruptions, ileus and other GI disturbances, dehydration and electrolyte imbalances, failure to thrive, and other causes. Nurse-led post-operative telephone follow-up is not utilized in the gynecology oncology office though evidence supports that women

undergoing surgery in the gynecologic oncology specialty are at increased risk related to age, comorbidities, and complexity of their surgical cases. This study aims to answer the following research questions:

1. What is the current readmission rate in gynecologic oncology patients?

2. What is the relationship between nurse-led telephone follow-up and readmission rates in gynecologic oncology patients requiring surgery?

Theoretical Framework

Sister Callista Roy's Adaptation Model of nursing served as the theoretical framework for this study. Roy's theory, developed in 1976, describes individuals as interrelated systems comprised of biological, social, and psychological natures. Roy (1976) defines a person as the recipient of nursing care. In this study, the person is the post-operative gynecologic oncology surgery patient who is receiving nurse-led telephone follow-up. Roy describes health as a dynamic state, fluctuating in nature and constantly adapting to the external environment (Roy & Andrew, 1986). The patient receiving post-operative telephone follow-up following hospital discharge is in an ill state, recovering from recent abdominal surgery, and experiencing the body's ability or inability to adapt perioperative and transition from one setting to another setting.

Nursing skills are needed when a patient's normal skills of coping are rendered ineffective in the presence of new or unusual stressors. The nurse can be an individual who specializes in the field of gynecologic oncology and can combine their knowledge and effective communication skills in providing telephone intervention. In addition, the nurse can offer reassurance to the patient and offer psychosocial interventions when appropriate. The combination of knowledge and skills is essential to providing the

appropriate telephone follow-up. Nursing is described as "a theoretical system of knowledge which describes process of analysis and action related to the care of the ill or potentially ill person" (Roy, 1976, p.20).

Roy describes an individual as adaptive in nature, coping with a dynamic environment of constant change. The environment is both the internal and the physical environment of the patient, the internal environment being the post-operative state and the external environment including the transition of care from one setting to another setting and any post-operative complications. According to Roy, the patient receives input from both the internal and the external environment which are divided into three types of stimuli: focal, contextual, and residual. The focus stimuli is the one that is most likely causing the behavior. In this study, the focus stimuli would be the recent surgery and postoperative state. Contextual stimuli are those that are contributing to the behavior. Residual stimuli are "factors which may be affecting the behavior but whose effects are not validated" (Roy, 1976, p. 22). The contextual and residual stimuli, may include post-operative complications, comorbidities, age, and potential need for readmission.

Roy (1976) describes the control processes of an individual as adaptive and some coping mechanisms are inherited or genetic and others are learned. The two coping subsystems are the cognator subsystem and the regulator subsystem. The cognator subsystem includes self-concept, role function, and interdependence as modes of adaptation while the regulator subsystem controls the physiologic response to stimuli and includes the neural, chemical, and endocrine responses. Following surgery, coping in both of these subsystems is disturbed. The cognator response is disturbed in relation to the emotional stress following surgery and potential malignancy that may or may not be

known, and the fear of adjuvant treatment side effects, poor quality of life, and loss of

control. The regulatory response is disturbed on the physiologic level as the body

recovers from surgery, and potentially mounts a defense in regards to GI disturbances,

SSI or wound complications, and/or other post-operative complications.

In this study the physiologic disturbances pose the greatest risk to the patient's

overall health and potentially lead to readmission, though failure to thrive related to stress

and uncertainty may also pose significant risks to the patient's well-being. The body may

respond to external stimuli following surgery in a positive or a negative manner. The

patient may respond positively with no post-operative complications or threat of

readmission following discharge. Other responses may be maladaptive and results in

post-operative complications and readmission to the hospital which will bring additional

stress related to financial burdens, as well as potentially delay adjuvant treatment. Roy's

model is displayed in Figure 1.
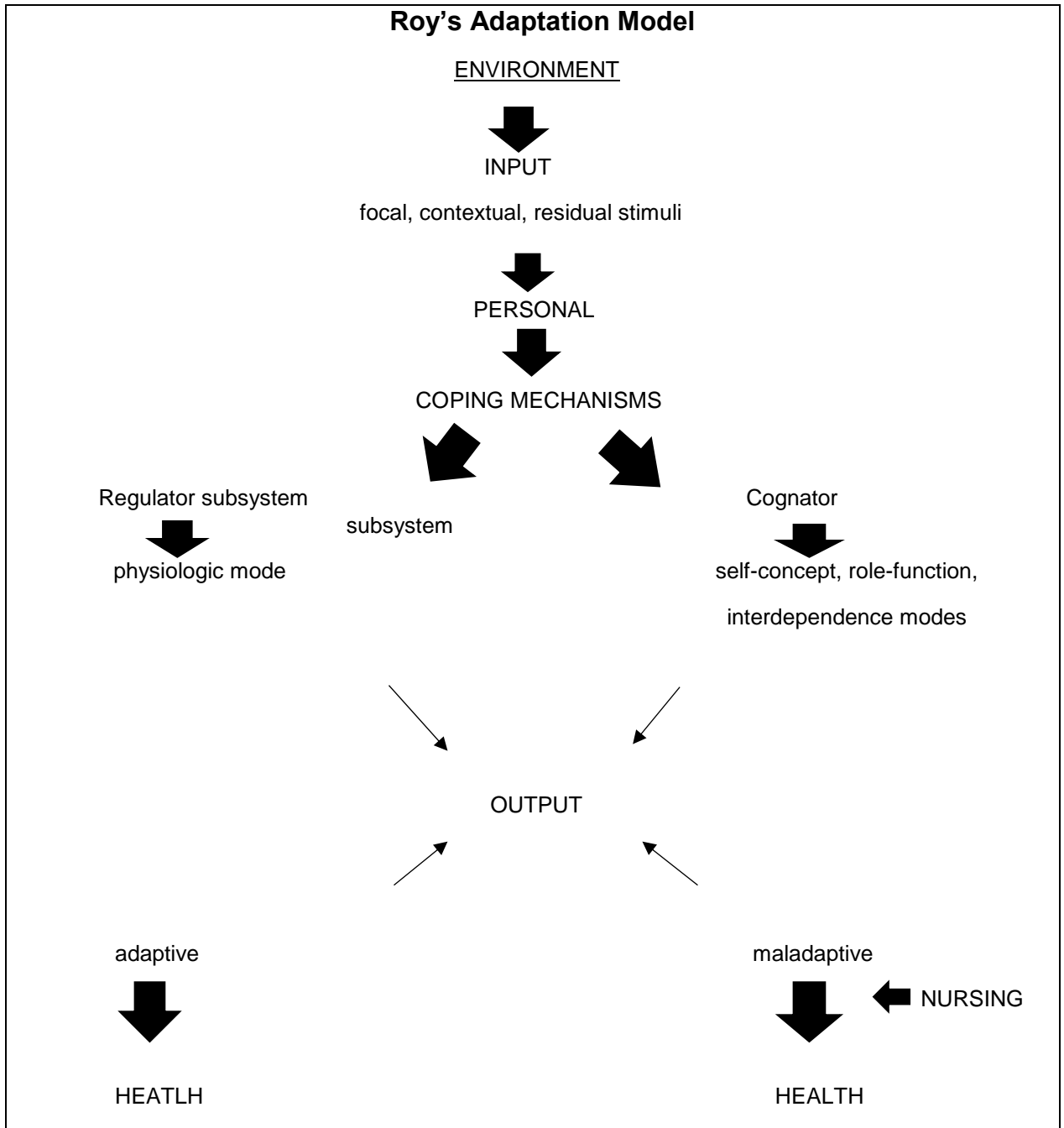
Figure 1. Roy's Adaptation Model.

Definition of Terms

Cytoreduction or cytoreductive surgery refers to the treatment of advanced ovarian cancer in which the goal of surgery is to attempt to remove as many of the cancerous cells as possible at the time of surgery. Optimal cytoreduction is linked to improved prognosis and outcomes (Wilbur et al., 2016).

Adjuvant therapy for oncology patients refers to surgery followed by chemotherapy or radiation therapy to help decrease the risk of cancer recurring. Adjuvant therapy should begin as soon after surgery as possible, though hospital readmissions and post-operative complications may delay the start of adjuvant therapy (Wilbur et al., 2016).

Surgical site infections (SSI) and wound dehiscence are potential complications following major surgery. SSI is an infection of the surgical site that occurs after surgery in the part of the body where surgery took place. These infections can sometimes be superficial and sometimes they involve deeper tissues and organs. Wound dehiscence is a surgical complication in which a wound opens along the surgical incision. Risk factors associated with wound dehiscence include age, diabetes, obesity, trauma, and poor knotting of sutures (CDC, 2016).

Diethylstilbestrol (DES) is a synthetic estrogen that was developed to supplement a woman's natural estrogen production. Health risks, including cancer, have been associated with DES exposure that include cancer (SGO, 2016).

BRCA 1 and BRCA 2 are genetic mutations that can increase the risk of malignancy. When an individual carries these genes, he or she is referred to as a carrier. BRCA 1 carriers have a 55-65% chance of developing breast cancer by age 70. BRCA 2

carriers have a 45% chance of developing breast cancer by age 70. BRCA 1 and BRCA 2 mutations account for approximately 15% of ovarian cancers (SGO, 2016).

Lynch syndrome is responsible for approximately 3-5% of endometrial cancers. Lynch syndrome is caused by an inherited mutation in one of five genes. Patients with Lynch syndrome have and increased lifetime risk of developing colon and endometrial cancer, as well as ovarian cancer (SGO, 2016).

The Human Papillomavirus (HPV) is a sexually transmitted virus that accounts for approximately 70% of cervical cancer cases (SGO, 2016).

Readmission is defined as an admission to a hospital within 30 days of discharge from the same hospital or another hospital (CMS, 2016).

Summary

Though the cause of hospital readmissions may be multifactoral, readmissions have a negative financial impact on health care systems and result in patient distress and dissatisfaction. CMS uses a 30 day window for readmission to penalize hospitals with higher than expected rates of readmission. Improved communication with patients to provide a more clear understanding of self-care following discharge, including education on medication compliance and follow-up appointments, can decrease the readmission and emergency department visit rate by as much as 30% according to a study published Jack (2009), funded by the Agency for Healthcare Research and Quality (AHRQ). Patients who have a better understanding of their medications, signs and symptoms of their disease, diet and lifestyle requirements, and follow-up appointments with their providers have a considerable advantage at being successful in regards to improved recovery and

staying out of the hospital. Deficiencies in transitions of care increase illness,

unnecessary hospital utilization, and associated costs (Jack, 2009).

CHAPTER II

Literature Review

Hospital readmissions following surgery are costly for both the patient, as well as the hospital. Furthermore, readmissions following surgery can reflect negatively on the quality of care that was delivered during admission. Hospitals face continual pressure to decrease the cost of care while increasing the quality of care that is delivered. Though there is ongoing debate as to whether hospital readmissions should be used as a measure of quality, CMS recently emphasized the importance of strategies to reduce readmissions with the implementation of substantial financial penalties through the Hospital Readmissions Reduction Program (HRRP). Experts have expressed concern that readmissions are not limited to quality metrics, volume, and process compliance, but are also impacted by the financial and social resources of patients and the complexity of their personal medical history. Focus is being drawn to how well hospitals prepare patients for transitions of care from one setting to another (Dimick & Ghaferi, 2015). Transitions of care can be challenging and stressful for both patients and their families. Regardless of an organization's readmission rate as compared to other similar institutions at the local and national level, continued vigilance is necessary to improve transitions of care for patients (Miller & Schaper, 2015).

A literature review was conducted through several databases including the Cumulative Index to Nursing and Allied Health Literature (CINAHL), The Cochrane Library, MEDLINE, PubMed, and the National Center for Biotechnology Information (NCBI) at the U.S. National Library of Medicine (NLM). The search limits included publications from 2007 to 2017 and those considered historical or foundational in nature if published prior to 2007. In addition, the search focused on high levels of evidence

including systematic reviews. Key terms for the search included *nurse-led telephone interviews, medication adherence, interventions, readmission reduction strategies, unscheduled visits, surgery complications, patient outcomes, quality, hospitalization, gynecologic oncology,* and *cancer.*

Costs Associated with Hospital Readmissions: Financial and Quality Implications

Readmissions not only impact patients and hospitals financially, but can also be a source of stress and dissatisfaction for patients. The time period that follows hospitalization is a vulnerable time for patients. Efforts and interventions should be explored to smooth the transition between inpatient and outpatient settings to prevent costly readmissions for patients and hospitals.

Morris, Deierhoi, Richman, Altom, and Hawn (2014) explored the relationship between the timing of surgical complications and hospital readmission. The significance of the study was the financial impact of readmission following surgery and the reflection on the quality of care delivered during the index hospitalization, measuring all-cause readmissions within 30 days. The objective evaluated the timing of readmissions associated with postoperative complications. This retrospective cohort study, performed from January 2005 to August 2009, as part of the National Veterans Affairs Surgical Quality Improvement Program assessed perioperative risk and outcomes data on the Surgical Care Improvement Project cohort of operations. The study reviewed a total of 59,273 major surgical procedures, which were performed across 112 veteran hospitals, and found an overall 30-day complication rate of 22.6% with a readmission rate of 11.9%. A significant number of the postoperative complications were diagnosed following discharge from the hospital, including one-third of all complications and one-

half of surgical site infections (SSI). Post discharge infections was associated with an increased risk of readmission. Efforts to prevent surgical readmissions should be focused on identifying potential quality issues during the index admission with some understanding of the types of readmissions that are potentially preventable and those that cannot be avoided (Morris et al., 2014).

A five year retrospective review was performed by Henretta et al. (2011) examining readmission to the gynecologic oncology service at the University of Virginia from 2004 to 2008 to determine the rate of readmission, the indications for those readmissions, whether or not the readmission was planned, and the associated costs. The five year retrospective audit reviewed all cause readmissions of gynecologic oncology patients. The abstracted data included demographics, dates of hospitalizations, the individuals' cancer history, indication for admission, and the costs associated with the admission. Over the five year period a total of 2,455 patients were admitted to the gynecologic oncology service with 324 hospital readmissions (13.2%) to the University of Virginia within 30 days of discharge from the index admission. The data revealed that the majority, 87.3%, were readmitted to the gynecologic oncology service, with 12.7% being admitted to other hospital services. The mean number of days for readmission was 12.2. Patients were admitted on average of 1.5 times following discharge from the index admission, with some experiencing up to 10 subsequent admissions within 30 days of the previous discharge. The median cost for readmission was $8,059 per admission, with a total cost of readmissions over the five-year period totaling $6,421,733. Some patients had planned readmissions for oncology treatment. Consideration was payed specifically to ovarian, uterine, and cervical cancer patients with the costs associated with

readmission for these diagnoses totaling $5,001,899. Of that total, unplanned

readmissions accounted for $3,632,780, representing 72.6% of the cost associated with

caring for these gynecologic oncology patients. The 13.2% readmission rate for the

University of Virginia was lower than the national rate for Medicare patients. There was

discussion that the rate of readmission for the institution may actually have been higher

than discovered in the study based on the large referral base and the potential for out of

town patients to be readmitted at their local hospitals and therefore absent from the data

analysis. Though those uncaptured readmissions would only make the cost associated

with readmission higher, which is further evidence to support the need for improvement

in efforts to decrease hospital readmissions. Readmissions are affecting the cost and

quality of care delivered and are in need of considerable attention (Henretta et al., 2011).

Evidence showed that timely follow-up for high risk patients following hospital

discharge from index admission can reduce readmissions. Jackson, Shahsahebi, Wedlake,

and Dubard (2015) investigated the timeliness of outpatient follow-up following hospital

discharge to reduce hospital readmissions given the varying complexity of different

disease processes. The study was conducted in an effort to provide intervention-planning

for the development of care coordination standards for the Community Care of North

Carolina (CCNC) Transitional Care Program. The data was obtained from statewide

North Carolina claims for discharged patients from April 2012 through March 2013. The

study revealed that approximately one half of Medicaid beneficiaries requiring

readmission within 30 days of the index hospital admission did not receive follow up in

the outpatient setting prior to readmission. It was hypothesized that risk assessment might

be beneficial to identify patients that would benefit from early follow-up following

discharge from the index admission. They constructed seven clinical risk strata based on the 3M Clinical Risk Groups (CRGs) and established expected readmission rates within each of the CRGs. Survival modeling was applied to identify groups that would benefit from outpatient follow-up within 3, 7, 14, 21, and 30 days of discharge from the index admission. Results concluded that the benefit from early follow-up varied in correlation to the baseline risks for readmission. Early outpatient follow-up was associated with statistically significant survival from readmission within each risk stratum by 14 days following discharge. The significance of early follow-up was greater in the higher risk strata patients, with the difference ranging from 12.0 to 19.2 percentage points (P < .001). Resources are best utilized when ensuring early follow up occurs for the highest risk patients (Jackson et al., 2015).

Costs associated with unplanned readmissions results in expense to both the patient and the health care system. Furthermore, readmissions can be interpreted as an indicator of poor quality care. Women with gynecological cancer are frequently older, have complex medical profiles, and require more extensive surgery putting them in a higher risk category for readmission. Wilbur et al. (2016) conducted a retrospective, concurrent cohort study of all surgical admissions to Johns Hopkins Hospital in Baltimore, Maryland during the period of January 1, 2013 to December 31, 2014. Data was collected on unplanned readmissions, excluding patients with planned readmissions for treatment to include surgery, chemotherapy, and/or radiation therapy. Data collection included the patients' demographics, medical comorbidities, psychosocial risk factors, and results obtained on the patients' individual hospital discharge screening survey. Factors associated with 30-day readmissions and the costs of those readmissions were

assessed. Results revealed an 11% readmission rate following index surgical admission, with a 20.9% readmission rate in the surgical subpopulation with a greater than one night hospital stay on index admission. The mean interval to readmission was 11.8 days, with a mean length of stay of 5.1 days. The mean cost of readmission was $25,416, with the highest cost for complications associated with the gastrointestinal system of $32,432, and a total cost for readmission during this study period of $4,523,959. Researchers concluded that readmissions in gynecologic oncology surgery patients had some correlation to the radical nature of surgeries performed, a score greater than or equal to five on the Charlson comorbidity score, language barriers, a mean household income in the lowest quartile, and a positive discharge screen. Wilbur et al. (2016) further noted that few studies have focused on gynecologic oncology surgery patients and that the financial penalties for readmissions, under the CMS Readmissions Reduction Program, necessitates the need for additional interventional studies aimed at decreasing the unplanned readmission rate in the gynecologic oncology surgery population (Wilbur et al., 2016).

Evidence suggested that there is a lack of standardized hospital discharge procedures and post discharge follow up. Given the rising costs and penalties associated with hospital readmissions, there is a need to focus on discharge interventions in the peri-discharge period to reduce post-discharge adverse events that result in emergency department visits, as well as readmissions. Jack (2009), conducted a two-group, randomized, controlled trial on English-speaking patients, over the age of 18 years, admitted to the medical teaching service of Boston Medical Center in Boston, Massachusetts to test the effects of an intervention which was designed to decrease

hospital utilization following discharge. Block randomization, with block sizes varying from six to eight, was utilized to determine usual care versus the intervention group. The intervention group consisted of a nurse discharge advocate working with patients during the course of their hospital stay to arrange follow-up appointments following discharge, review and reconcile medications, conduct patient education which was individualized to the patient which included an instruction booklet that was also sent to the patients' primary care provider (PCP). In addition, a clinical pharmacist contacted the patients via phone two to four days post discharge to review the discharge plan and medications. Emergency department visits and readmissions within 30 days of the index admission were measured, as well as patient reported preparedness for discharge and the frequency of primary care provider follow-up within the 30 day time period following discharge. Results of the study revealed that patients in the intervention group (n=370) had an overall lower rate of utilization of the hospital following discharge from index admission than those who received usual care (n=368), 0.314 vs. 0.451 visit per person per month with an incidence rate ratio of 0.675 [95% CI, 0.515 to 0.937]; $P = 0.014$). It was concluded that a group of interventions for discharge services reduced hospital utilization within the time period of 30 days following discharge. This study was limited in that it was performed in a single institution, as well as the necessity to rely on self-reported data from participants (Jack, 2009).

Some diagnoses for gynecologic oncology patients, such as ovarian cancer, are more common in women over the age of 65. As surgery remains a mainstay in the management of ovarian cancer, overall health status may correlate to surgical complications in these patients given their age and potential for increased risk of

postoperative complications. Courtney-Brooks et al. (2012) conducted a pilot study to determine if frailty is a predictor of surgical complications among elderly women who require gynecologic oncology procedures. This study, conducted at the University of Virginia, included a cohort of gynecologic oncology patients who were 65 years of age or older, and underwent surgery between March and December 2011. A five domain validated assessment tool was utilized to assess frailty with the 30-day post-operative complication rate serving as the main outcome measure. Secondary outcome measures included discharge to a skilled nursing facility or assisted-living facility, and hospital readmission within 30 days. To verify absence of exclusion criteria, past medical history and current medications were reviewed. A total of 37 women were enrolled with an average age of 73 years. All participants enrolled were retained in the study through the follow-up period. Of those enrolled in the study, 56% were deemed not frail, 27% intermediate frail, and 16% frail. Women deemed frail had significantly higher body mass index (BMI) and the rate of surgical complications in the 30-day window increased with the frailty. Four of these women had a complication in the 30-day post-operative period (p=.004), including two hospital readmissions. Frailty is associated with a higher BMI which indicated that low body weight is not indicative of frailty. The findings of this pilot study supported the concept of measuring frailty as a predictor of post-operative complications and morbidity in an effort to improve patient education, counseling, and offer more informed decision making (Courtney-Brooks et al., 2012).

Minimally invasive surgery, or robotic surgery, has become a standard practice in gynecologic oncology patients undergoing surgery for endometrial cancer. As readmission rates not only effect costs, but serve as a marker for the quality of care

delivered, there is increased attention placed on the improvement of discharge planning. Liang et al. (2013) conducted a study at the Ohio State University on all patients that underwent robotic surgical management for a diagnosis of endometrial cancer between January 1, 2006 and December 31, 2010 to describe the readmission patterns after robotic surgery for endometrial cancer and to identify risks resulting in the need for readmission to the hospital within 90 days of discharge from index admission. Data analysis consisted of patient characteristics, intraoperative data, and post-operative complications. Descriptive statistics were performed with comparison between the groups requiring readmission within 90 days and those with no readmission, utilizing Fisher's exact tests for categorical data and Student's t-tests for continuous data. A total of 395 patients were included in the study population. Thirty patients (7.6%) required readmission within 90 days of the surgical discharge from index hospital admission, with 365 patients (92.4%) requiring no readmission. The vast majority of those requiring readmission, roughly 75%, were readmitted within 30 days of index hospital discharge, with a mean interval of 9.5 days. The readmissions tended to be short stays, with a mean average of 2.5 days. The most common reasons for readmission included fever and vaginal discharge. A total of five patients out of the 30 that were readmitted following initial discharge required a second operation, related to vaginal cuff dehiscence and port site hernias. This study revealed that robotic surgery for endometrial cancer was associated with a 7.6% readmission rate with the most common diagnosis not identified as severe illnesses. Findings suggested that additional education surrounding the threshold for readmission may improve outpatient evaluation of possible robotic surgical complications and decrease readmission through early intervention (Liang et al., 2013).

Enhanced Recovery Pathways (ERP) have become part of perioperative management which requires standardization and cooperation within the healthcare team. The overall goal of ERP is to provide improvement in surgical recovery with shorter length of hospital stay, quicker return of normal bowel function, less deviations from standard narcotic and opioid therapy for pain management, early ambulation, and earlier advancement of oral nutrition. Nelson, Kalogera, and Dowdy (2014) performed a systematic literature search of ERP in gynecologic oncology in June 2014 via utilization of databases including PubMed, Medline, EMBASE, and The Cochrane Library. All study types were inclusive. They also contacted the Enhanced Recovery after Surgery (ERAS) Society for review of any unpublished protocols. Findings of this review included the common interventions in enhanced recovery pathways to restore normal bowel function more quickly, to ambulate patients more quickly, and to decrease length of hospital stay. There were seven investigations identified examining the role of enhanced recovery in the gynecologic oncology surgery population. Readmission rates in this population were not identified to be different than those who were not utilizing ERP. However, ERP has been shown to reduce costs and length of stay on index admission and is becoming the standard of care in a growing number of institutions (Nelson et al., 2014).

Effectiveness of transitions of care following post-acute care are necessary as part of readmission reduction strategies. In addition to readmission rates following index admission within 30 days, emergency department visits should be assessed as well. Vashi et al. (2013), conducted a prospective study of patients who were discharged from July 1, 2008 and September 31, 2009 from three large acute care hospitals in California, Florida,

and Nebraska. The study evaluated patterns of acute care following discharge for more than five million hospital admissions for more than four million adult patients. Results revealed that approximately 18% of hospital discharges resulted in an acute care visit within 30 days of discharge. This included emergency department (ED) visits, where patients were treated and subsequently released (9.75%), as well as hospital readmission (14.7%). The most common reason patients visited the ED was related to their index admission to the hospital. The study identified the need to include ED visits as a focus of post-discharge care and to determine what interventions were needed to decrease the number of ED visits in addition to the number of readmissions. The use of the ED as an outpatient source for follow-up post-discharge from acute care, contributes to the ongoing concerns surrounding ED overcrowding (Vashi et al., 2013).

Improvement in care transitions is one area of needed focus to decrease the number of hospital readmissions. Brock et al. (2013) reported outcomes related to a quality improvement initiative for care transitions to enhance care coordination and reduce all cause and 30 day readmissions. This large scale project was funded by CMS and engaged a large group of partners that could play a potential role in patient transitions of care to include hospitals, nursing homes, home care agencies, hospices, social service agencies, and clinicians. The implementation encompassed 14 geographic communities and 50 comparison communities from 2006-2008 and from 2009-2010. They implemented evidenced based improvements for care transitions with an associated decrease in the rate of all-cause 30 day readmissions per 1,000 Medicare beneficiaries. Although a significant reduction in the rate of 30 day readmissions was not observed, an

overall reduction among the community population of Medicare patients was considered noteworthy (Brock et al., 2013).

Tran et al. (2014) conducted a study on all women undergoing surgery for primary epithelial ovarian cancer at the Mayo Clinic in Rochester, New York between January 2, 2003 and December 30, 2011. The objective of the study was to assess perioperative factors associated with surgical site infections (SSI) and the impact of SSI on survival. This retrospective review used logistic regression models to identify factors associated with SSI. Based on inclusion criteria, 888 patients were deemed eligible for the study. Within this group, 96 patients (10.8%) developed a SSI within the first 30 days following primary surgery and intraoperative drains were placed in 94% of the 96 patients that ultimately developed a SSI. Of these 96 patients, 38% returned to the operating room for either repair of an anastomotic leak, an unrecognized enterotomy, debridement of a pelvic abscess, or repair of a wound dehiscence. Factors associated with SSI included history of gastrointestinal reflux, complexity of the primary surgery, and residual disease following primary surgery. The study determined that SSI are associated with a decrease in overall survival, and that many risk factors for the development of SSI are not modifiable. Pre-operative identification of those at high risk may prove beneficial for improved treatment planning (Tran et al., 2014).

Nursing Impact on the Readmission Rate

Nurse-led telephone follow-up after discharge from surgery has been utilized to enhance patient education, evaluate how patients are recovering after discharge, and to enhance patient satisfaction with their care. Burch (2012) conducted a study on nurse-led telephone follow-up after patient discharge from major colorectal surgery which included

an enhanced recovery protocol. An enhanced recovery protocol nurse prospectively called 200 patients within a four week window following hospital discharge. Predetermined questions including the topics of diet, mobility, wound healing, bowel or stoma function, and any contact with health professionals since the patient's discharge to home were asked via telephone. The calls were made before the post-operative appointment in the surgical clinic. Two hundred patients were contacted between January 2011 and March 2012. There were a total of 102 concerns reported by 94 of the patients. The main areas of concern were wounds, bowels, stoma care, stamina, and pain. Readmission rates were low and the majority of the concerns that were reported were able to be addressed on the call. Burch (2012) concluded that nurse-led telephone follow up is a suitable approach for the short-term follow up of this population of surgical patients on an enhanced recovery pathway.

Effort to improve transitions of care for patients following acute hospitalization are ongoing and tied to incentives from payers. Enhancing communication with patients and their families is a necessary part of that process to improve self-management and provide additional resources as needed. Telephone follow-up post-discharge is frequently reported as a cost-effective approach to improving such communication. Johnson, Laderman, and Coleman (2013) conducted a nonsystematic review of literature on the use of telephone follow-up (TFU) to improve transitions of care and reduce preventable readmissions. Three decision were determined to be an important part of the TFU program which included (1) Who should make the call, (2) Which information is essential, and (3) What is the optimal timing, frequency, and duration of the call? This process was examined as a part of a post-discharge bundle among hospitals participating

in the State Action on Avoidable Rehospitalizations (STARR) initiative. Findings of this study supported the need for continued exploration of TFU as a cost-effective approach to reducing readmission rates (Johnson et al., 2013).

The complexity of health care and the potential for patients to have significant disease burden while adjusting to their diagnoses can add to the stress and anxiety of patients and their families during care transitions from one setting to another. Avoidable readmissions are a significant problem that every hospital must address. Miller and Schaper (2015) conducted a project at a 325 bed teaching hospital servicing a 19-county area in southwestern Wisconsin, northeastern Iowa, and southeastern Minnesota. The organization developed a Transitional Care Steering Committee in an attempt to improve transitions of care for patients. The objective was to utilize clinical nurse leaders (CNLs) to improve patient understanding of and adherence to discharge instructions and avoid deterioration in the first days following discharge, in an effort to reduce avoidable readmissions. The intervention consisted of follow-up phone calls performed by the CNLs and continued support by the CNLs post discharge. Structured telephone questionnaires were utilized and high risk patients were identified via the LACE index tool (length of hospital stay (L), acuity on hospital admission (A), comorbidities (C), and number of emergency department visits in the six months prior to admission (E). The telephone calls by the CNL were conducted at 24 to 72 hours post-discharge and the questions were selected from the Transitional Care Post Discharge Assessment Tool. If provider assessment was warranted an algorithm was utilized by the CNL to determine the appropriate provider to assess the patients. Information was routed to that provider via the electronic medical record (EMR). High risk patients were nearly 2.5 times more

likely to require readmission and warranted additional telephone follow-up. Sixty six percent of the calls required the CNL to intervene in some manner, by either providing professional nursing advice or intervention on behalf of the patient. Improved awareness of patients with high risk status, as well as improved communication between inpatient and outpatient settings may help improve transitions of care in this population at-risk for readmission (Miller & Shaper, 2015).

The time period following hospitalization is a very vulnerable time for patients. There are a considerable number of care transition programs that include follow-up phone calls as part of a bundle to smooth transitions of care, though there is limited data evaluating post-discharge calls as an independent intervention. Harrison et al. (2014) conducted a retrospective observational study at a 600-bed medical service at the University of California San Francisco Medical Center (UCSFMC). The study was conducted to evaluate the true relationship between post-discharge phone calls and all-cause readmissions in a general medicine population. Participants included patients discharged home from UCSFMC between November 2010 and May 2012. These patients received two phone call attempts by a nurse within 72 hours of discharge home and a standard script was utilized by the nurse. There were a total of 4,115 patients who had a call attempted, and of that total 2,680 (65%) were able to be reached and 1,435 (35%) were unable to be reached. Patients that participated in this nurse intervention were less likely to be readmitted than those that did not participate. There were 5.8 % of patients readmitted who completed the telephone intervention, compared to 8.6% readmitted that did not answer the call and 8.3% readmitted that were never called. The effectiveness of post-discharge phone calls can be impacted by the ability of the patient to answer the call.

Programs need to focus additional efforts on improving telephone call success rate, while improving the quality of care delivered during the phone calls (Harrison et al., 2014).

As patients experience anxiety related to transitions of care, telephone follow-up can also offer improved patient satisfaction. Once home from the hospital patients have various obstacles that they did not face in the hospital that can interfere with compliance with discharge instructions. Braun et al. (2008) conducted a study to determine if a tight program of telephone follow-up (TFU) post-discharge could improve patient satisfaction, improve compliance, and reduce the readmission rate. The study took place in the Department of Internal Medicine in Haifa, Israel and included 400 patients. Patients were randomly divided into a TFU group and a control group. TFU was conducted at one week and one month following discharge. Three months later, both the control and the TFU group were recontacted. Results indicated an increase in satisfaction with the telephone follow-up group by 6-12%, and 87% of patients in the TFU group reported that having early contact by phone improved their satisfaction. Of the patients in the TFU group, 93% reported improvement in their symptoms, as compared with 84% in the control group. Regarding readmissions, a non-specific trend was noted in the TFU group, 26%, versus 35% in the control group, $P= 0.062$. The study concluded that TFU can improve patient compliance, and patient satisfaction with post-discharge care (Braun et al., 2008).

Radical surgeries can result in the need for ostomy formation. Patients with an ostomy often require additional time to adjust and learn ostomy care. Gynecological malignancies can result in the need for surgery that may require the formation of an ostomy. Patients with new ostomies can benefit from additional support, education, and follow-up. Zhang, Wong, You, and Zheng (2011) conducted a qualitative exploratory

study in a university cancer center based in China to explore the content of telephone follow-up conducted by an enterostomal nurse with patients who have been discharged home with a colostomy. People who are discharged home with a colostomy can encounter stoma-related problems and an effective intervention has been identified as nurse-led telephone follow-up to monitor the patients' progress and the need for intervention. The study evaluated 25 intervention phone calls to colostomy patients in the time frame of January 2009 to August 2009. The themes of the conversations that were identified via the phone intervention were education of stoma care, access to stoma care, encouraging patients to perform stoma self-care, resuming normal living, and general post-operative complications. The results identified that colostomy patients can experience a wide range of difficulties following their discharge home, but many concerns can be appropriately and effectively managed via telephone follow-up. There was evidence to support patients have unmet needs following their discharge home and telephone follow-up offers an opportunity for support and additional education. The study offered insight into themes identified as opportunities for additional education and a qualitative content analysis offers guidance for nurses in discussing care of the stoma with patients, as well as offering a framework to develop additional protocols and standards of care when educating patient in regards to stoma care (Zhang et al., 2011).

Much focus is directed at the best approach for monitoring patients in regards to possible problems following discharge from the hospital. Sayin and Kanan (2010) conducted a randomized descriptive study at a university hospital in Istanbul, Turkey of breast cancer surgery patients to determine if patients discharged early after breast surgery have a need for counseling by telephone from a surgical nurse, and what health

questions do these patients ask a surgical nurse by telephone. The sample for the study

included 174 patients that were staying in the hospital one night prior to discharge. The

study identified that a high rate of patients asked to receive telephone counseling, 55.2%.

Of all the patients who did receive telephone counseling. 77.1% had complications, with

43.1% of those being wound infections or inflammation, 28.1% had a seroma, and 5.2%

suffered from lymphedema. It was shown in the study that symptom management and

anxiety related to adaptation followed by telephone can make home care easier. The

study concluded there was significant data to warrant the need for nurses to extend their

counseling of patient following discharge from index admission, but in order to

generalize results, similar research will need to be conducted on a larger group (Sayin &

Kanan, 2010).

Strengths and Limitations of Literature Summary

There is a large volume of data regarding the need for improvement in

readmission rates and hospital readmission reduction programs. Some studies have been

performed at single institutions or require a larger sample size in order to make

generalizations to other institutions. Nurse-led telephone follow-up has been proven by

evidenced based research to make an impact on readmission reduction programs where it

has been established, but standardly telephone follow-up is part of a readmission

reduction bundle and there is little data on telephone follow-up as a stand-alone

intervention.

Summary

The complexity of the gynecologic oncology surgical patients presents a patient at high risk for readmission in many instances related to the radical nature of surgery, ostomy formation, and early-onset of adjuvant treatment to include chemotherapy and radiation which may further compromise the patient. The literature offers extensive evidence supporting the need for pre-operative risk assessments of these complex patients and references multiple validated tools for conducting such an assessment.

CHAPTER III

Methodology

This chapter outlines the research design, setting, sample, protection of human subjects, instruments, and data analysis used to conduct this research study.

Research Design

This study was designed to determine the current readmission rate in gynecologic oncology patients and the relationship between nurse-led telephone follow-up and readmission rates in gynecologic oncology patients requiring surgery. The study evaluated unplanned hospital readmissions following initial admission on the gynecology oncology service at a single academic medical center. This was a cross-sectional research study where information regarding the control group was obtained through a retrospective chart review. Information regarding the intervention group was collected prospectively through chart review. The time frame for data collection for both the study and the control group was the same.

Setting

This study was conducted in a Cancer Institute, in the outpatient setting, on the campus of a large research and teaching hospital with greater than 700 beds, located in the Upstate of South Carolina. The gynecology oncology service of the Cancer Institute conducts surgery on this campus. The gynecologic oncology sub-specialty is dedicated to caring for a unique set of cancers which only affect women. This subspecialty focuses on cancers that affect the female reproductive tract to include the cervix, uterus, ovaries, fallopian tubes, vagina, and vulva. There are three gynecologic oncology surgeons in this practice, whose skills include open surgical resection as well as the use of minimally

invasive robotic surgery, and the administration of chemotherapy, for the management of patients diagnosed with a gynecologic malignancy.

Sample

This study consisted of 100 participants. Fifty participants were in the experimental group and 50 participants were in the control group. Inclusion criteria for participation was that participants must be female patients on the gynecologic oncology service and at least 18 years of age. Participants in the control group underwent surgery between July 1, 2016 and August 25, 2016 and did not receive discharge follow-up phone calls. Participants in the experimental group underwent surgery between July 3, 2017 and September 14, 2017 and did receive discharge follow-up phone calls.   In addition, participants must have had inpatient abdominal surgery via laparotomy or a minimally invasive robotic approach for a known or suspected gynecologic malignancy, regardless of race or ethnicity. Exclusion criteria included vaginal, vulvar, and all other outpatient surgeries given the intent of the study was to evaluate the impact of nurse-led follow-up phone calls on the readmission rate.

Protection of Human Subjects

This study was submitted to the research facility's and the educational institution's Institutional Review Board (IRB) for approval. Participation in this study involved minimal risk. Verbal consent (Appendix A) was obtained for participation in the study. No identifiable subject data was reported in the outcomes.

Instruments

The literature review identified that hospital-based transitional care interventions are being utilized to smooth transitions for patients from the inpatient setting to the

outpatient setting. There has been increased focus on post-discharge phone calls to aid in the reduction of avoidable readmissions. Although there has been a significant rise in the use of post-discharge phone calls as part of care transition bundles, studies evaluating post-discharge calls as an independent intervention have been limited and therefore frequently inconclusive (Harrison et al., 2014).

The Re-Engineered Discharge (RED) Toolkit (Appendix B) was developed by The Boston University Medical Center (BUMC), and funded by The Agency for Healthcare Research and Quality (AHRQ); the National Heart, Lung, and Blood Institute; and, the National Institutes of Health (Jack, 2009). The toolkit was developed to assist hospitals that were seeking support and guidelines in order to optimize successful implementation. The Project RED program is a nationally recognized, best practice that has demonstrated the ability to reduce all-cause 30-day readmissions (Jack, 2009). The results have been reproducible among multiple hospitals across the United States which demonstrates the reliability of the tool. Mitchell et al. (2016) recruited 10 hospitals to implement the RED program and provided training for the implementation staff using the RED Toolkit. Eight out of ten hospitals reported improvement in 30-day readmission rates following RED implementation. The RED Toolkit includes a telephone survey to assist teams in collecting data from patients. The telephone survey does not capture all the data needed to calculate all the measures listed in the tool, but can be individualized by users to reflect the priorities and goals of the institution. A number of survey items were developed for the hospital survey of patients' experience of care, and have been validated as part of the Consumer Assessment of Healthcare Providers and Systems (CAHPS) development process.

Though several tools exist, the post-discharge follow up phone call tool from the RED toolkit is well described in the literature. The RED post-discharge follow-up phone call tool addresses call attempts and if the patient was successfully contacted. The tool addresses diagnosis and health status; new problems since discharge and how addressed; medications and any problems with adherence; clarification of follow-up appointments; coordination of post-discharge home services, if applicable; and, any additional problems. By identifying problems early the PM has the opportunity to intervene and potentially prevent a visit to the emergency department, or a readmission.

Data Collection Procedure

The researcher collected data on both the control group and experimental group. Participants in the control group were obtained by retrospective chart review. Participants in the experimental group were obtained by review of the surgery schedule for three gynecologic oncologists and attendance of the weekly gynecologic oncology tumor conference. Hospital and office charts were reviewed to identify patients with risk factors that increase the possibility of readmission within 30 days of surgery to include age, body mass index (BMI), and presence of multiple comorbidities, tobacco use, and poor performance status using the Eastern Cooperative Oncology Group (ECOG) status (Appendix C). The comorbidities specified will include diabetes, hypertension, heart disease, and renal disease. Intraoperative factors will include length of surgery, estimated blood loss, perioperative blood transfusion, and formation of ostomy. The post-operative factor evaluated will be length of stay of one day or greater than one day duration.

The sample size was 50 surgery patients for the gynecology oncology service. Participants were invited to participate during their pre-operative teaching visit. In an

effort to maximize participation, flyers were posted at the nursing station as a reminder to notify the project manager (PM) when potential surgery patients are identified. In addition, the PM will review the gynecologic oncologists surgery schedules, attend the weekly gynecologic oncology tumor conference, and meet with the nurses and physician providers weekly to identify any patient that will be scheduled for surgery.

In the outpatient gynecology oncology office setting, post hospital discharge telephone follow-up calls have not been part of routine care. Rather, patients receive pre-operative teaching in the office prior to surgery and post-operative discharge teaching from the resident physicians and inpatient nurses prior to discharge. Pre-operatively patients are provided with a telephone number that allows access to a triage nurse 24 hours a day for problems that may be encountered. Typically, patients will embrace an opportunity for additional follow-up and early identification of problems when they are dealing with a new cancer diagnosis and are uncertain of what to be monitoring.

- The project manager (PM) reviewed the surgery schedule for three gynecologic oncologists for the week and the coming weeks. In addition to this, the PM attended the weekly gynecologic oncology tumor conference where surgeries for the coming week were presented, as well as discussed patients with the gynecologic oncologists and their nurses to identify any new surgical candidates or cases that may have been added for surgery during the week. For patients that are identified by the PM, the gynecologic oncologists and their nurses were asked to notify the PM once the patient has arrived in the office.

- The PM met individually with potential patients to provide information on the purpose of the post discharge phone calls and to review with the patient the

voluntary nature of participation. Time was allowed for the patient to ask
questions and have those questions answered, obtain verbal informed consent, and
obtain the appropriate contact number(s) for the patient if the patient should
choose to participate.

- The PM evaluated the clinic and hospital electronic medical record (EMR) for
  each enrolled participant and collected clinical data for potential risk factors for
  readmission within 30 days of initial discharge.

- The initial telephone call was made within 48 hours of discharge from initial
  admission at which time the patient underwent abdominal surgery, performed by
  one of the gynecologic oncologists. A subsequent phone call was made within
  five to seven days of the initial call. The questionnaire utilized during the call will
  be the post discharge follow-up call tool from the Re-Engineered Discharge
  (RED) Toolkit.

- During the calls, patients were asked about their current health status and any new
  problems since discharge. Medications and follow-up appointments were
  reviewed, coordination of care with any outside agencies such as home health was
  discussed, and patients were re-educated on how to contact the office and what
  signs and symptoms to monitor for which would warrant a call to the office or
  possibly a visit to the outpatient clinic.

- Throughout the enrollment period, the PM monitored the progress of enrollment
  of participants and periodically met with physician providers and their nursing
  staff to ensure maximum patient awareness.

- Final telephone follow up calls were made and final data collection was completed.

- Data analysis occurred through review of the readmission rate for gynecologic oncology patients' in the control group and the intervention group.

Data Analysis

Two time periods were evaluated for this study representing two groups: those who did not receive a post-discharge follow-up call (control group) versus those who received a post-discharge follow-up call (intervention group). An excel spreadsheet was created to record the data collected. The categorical variables were reported as frequency (percentages), and the continuous variables were reported as Mean (standard deviations). The baseline patient characteristics of both groups were compared using chi-square test for categorical variables, and two sample t-tests for continuous variables. The aim of the baseline characteristics comparison was to describe the degree to which the two groups were matching with respect to their demographic characteristics and personal health factors.

The relationship between the use of post discharge follow-up calls (intervention group versus control group) and 30-day readmission (yes/no) was explored using chi-squared test. Variables were compared between the experimental and control groups given the potential association with the outcome of interest (readmission), including age, body mass index (BMI), comorbidities, tobacco use, performance status using the Eastern Cooperative Oncology Group (ECOG) status, length of surgery, estimated blood loss, perioperative blood transfusion, formation of ostomy, and length of hospital stay of one day or greater than one day duration.

The significance level for the analysis was set at $p \leq 0.05$. The statistical analysis was carried out using SAS Enterprise Guide, version 7.1 (SAS Institute, Cary, NC).

Summary

Hospital readmissions represent a potential source for recoverable healthcare expenditures, improvement in the quality of care delivered, and improved patient satisfaction. Gynecologic oncology patients may be readmitted following surgery for any number of causes to include, but not limited to, surgical site infections, gastrointestinal complications, pelvic abscess, pulmonary embolism, and other cardiopulmonary complications. Evidenced based risk stratification should be incorporated for patients while in the hospital. Quality initiatives should be focused on care transitions from the inpatient setting to the outpatient setting. Improvement of discharge education and the use of outpatient resources should be incorporated to effectively reinforce teaching and appropriate follow-up to decrease readmission rates and improve patient care (Liang et al., 2013).

CHAPTER IV

Result

The purpose of this study was to determine the current readmission rate in gynecologic oncology patients and the relationship between nurse-led telephone follow-up and readmission rates in gynecologic oncology patients requiring surgery. This chapter presents an overview of the findings.

Sample Characteristics

A total of 100 patients, 50 in the control group and 50 in the experimental group, of the gynecologic oncology service were included in this study. Of all participants (n=100), the average age was 56.5 (sd=14.28). Participants had an average BMI of 30.24 (sd=8.95). Comorbities included morbid obesity (n=29, 29%), diabetes (n=32, 32%), hypertension (n=40, 40%), heart disease (n=20, 20%), kidney disease (n=6, 6%), and tobacco use (n=39, 39%). ECOG status included 80 (80%) participants at a grade 0, 19 (19%) participants at a grade 1, and 1(1%) participant at a grade 2.

Intraoperative characteristics included length of surgery as 2 hours and 15 minutes, estimated blood loss of 50mL (sd=139.47), 1 (1%) participant required a perioperative blood transfusion, and 1 (1%) participant has an ostomy.

Postoperative characteristics included 73 (73%) participants requiring a length of stay greater than one day, with 10 (20%) participants being readmitted within 30 days. All of the patients included in the study underwent abdominal surgery via laparotomy or minimally invasive surgery to include laparoscopy or robotic assisted laparoscopy, requiring at least a one night stay in the hospital. Of the 100 participants, 75 patients underwent laparotomy and 25 patients underwent minimally invasive surgery.

Sample Characteristics of Control Group

Participants (n=50), in the control group, who did not receive a post-discharge telephone follow-up, had an average age of 54 (sd=15.43). Participants had an average BMI of 29.48 (sd=9.87). Comorbities included morbid obesity (n=16, 32%), diabetes (n=17, 34%), hypertension (n=20, 40%), heart disease (n=9, 18%), kidney disease (n=3, 6%), and tobacco use (n=22, 44%). ECOG status included 38 (76%) participants at a grade 0 and 12 (24%) participants at a grade 1.

Intraoperative characteristics included length of surgery as 2 hours and 15 minutes, estimated blood loss of 50mL (sd=95.20), and 1 (2%) participant required a perioperative blood transfusion.

Postoperative characteristics included 35 (70%) participants requiring a length of stay greater than one day, with 5 (20%) participants being readmitted within 30 days.

Sample Characteristics of Experimental Group

Participants (n=50), in the experimental group, who did receive a post-discharge telephone follow-up, had an average age of 60 (sd=12.80). Participants had an average BMI of 30.72 (sd=8.03). Comorbities included morbid obesity (n=13, 26%), diabetes (n=15, 30%), hypertension (n=20, 40%), heart disease (n=11, 22%), kidney disease (n=3, 6%), and tobacco use (n=17, 34%). ECOG status included 42 (84%) participants at a grade 0, 7 (14%) participants at a grade 1, and 1 (2%) participant at a grade 2.

Intraoperative characteristics included length of surgery as 2 hours and 17 minutes, estimated blood loss of 75mL (sd=111.38), and 1 (2%) participant had an ostomy.

Postoperative characteristics included 38 (76%) participants requiring a length of stay greater than one day, with 5 (20%) participants being readmitted within 30 days.

Readmission Rates

This research study was designed to improve patient outcomes by decreasing the 30-day readmission rate through nurse led telephone follow-up for early identification of problems. The readmission rate for post-operative, abdominal surgery patients, of the gynecology oncology service in 2016 was 8%. Fifty patients were contacted via telephone at two time points: 24 to 48 hours following initial discharge after surgery and again 5-7 days after the initial call. Two time periods were evaluated for this study representing two groups: those who did not receive a post-discharge follow-up call (control group) versus those who received a post-discharge follow-up call (experimental group). An excel spreadsheet was created to record the data collected. There were five readmissions in the intervention group and five readmissions in the control group, yielding a readmission rate of 20% for each group.

Patients were profiled that required readmission. This may help to target those patients in the future that may be at high risk for readmission and therefore should receive calls to assess their recovery. The following observations were made in comparing each variable:

- Hypertension (HTN) was more prevalent among those who were re-admitted.
- One patient required an ostomy in the dataset, and this patient was re-admitted. This was found to be statistically different, though given the small size of the dataset the overall significance cannot be established.

- HTN, tobacco use, age, and pre-operative diagnosis were the most useful variables in predicting readmission.

- All patients that were readmitted had laparotomies.

Data Analysis

The experimental group and the control group were compared on all variables provided. Two independent sample t-tests were performed to compare the continuous variables between the control group and the experimental group. The control group and the experimental group were homogenous. The mean age for the control group was 53.9; the mean age for the experimental group was 58.3; and, they were found to not be statistically different with a p-value of 0.12. The mean BMI for the control group was 32.11; the mean BMI for the experimental group was 31.71; and they were found to not be statistically different with a p-value of 0.82. The mean length of surgery (minutes) for the control group was 132.0 minutes; the mean length of surgery for the experimental group was 146.0 (minutes); and the means were not found to be statistically different with a p-value of 0.14. The mean estimated blood loss (EBL) for the control group was 95.2 ml; the mean EBL for the experimental group was 119.3 ml; therefore, the means were not statistically different with a p-value of 0.39. Using a level of significance of 0.05, the two populations appear to be homogeneous for each variable (p-values all larger than 0.05).

A chi-square test for independence was performed for categorical variables, comparing the frequency of occurrence of hospital readmission. It was hypothesized that each value may impact a patients' risk of readmission following surgery. No significant deviation from the hypothesized values were found ($X2(1) = 1.000$, $p > .05$). The

frequency of individuals who were morbidly obese in the control group (16) and the experimental group (12) were not found to be statistically different with a p-value of 0.37. The frequency of diabetes mellitus in the control group (17) and the experimental group (15) was not found to be statistically significant with a p-value of 0.67. The frequency of hypertension in the control group (20) and the experimental group (20) was not found to be statistically significant with a p-value of 1.00. The frequency of heart disease in the control group (9) and the experimental group (11) was not found to be statistically significant with a p-value of 0.62. The frequency of kidney disease in the control group (3) and the experimental group (3) was not found to be statistically significant with a p-value of 1.00. The frequency of tobacco use in the control group (22) and the experimental group (17) was not found to be statistically significant with a p-value of 0.31. The frequency of peri-operative blood transfusion in the control group (1) and the experimental group (0) was not found to be statistically significant with a p-value of 0.31. The frequency of ostomy formation in the control group (0) and the experimental group (1) was not found to be statistically significant with a p-value of 0.31. The frequency of the length of surgery for the control group compared to the experimental group was not found to be statistically significant wit a p-value of 0.50. The frequency of ECOG status of grade 0, 1, or 2 was not found to be statistically significant with a p-value of 0.28. The frequency of the pre-operative diagnosis of the control group compared to the experimental group was not found to be statistically different with a p-value of 0.33. Using a level of significance of 0.05, the two populations appear to be homogeneous for each variable (p-values all larger than 0.05).

Summary

The results of this study failed to reject the null hypothesis and conclude that the difference between the control and experimental group was not significant. Possible explanations for the lack of significance are discussed in chapter five.

CHAPTER V

Discussion

Hospital readmissions are perceived as an indicator of the quality of patient care delivered, and warrants an increased awareness in the medical community. A reduction in hospital readmissions gives us the ability to not only improve the quality of care delivered to our patients but also allows us to preserve precious health care resources. By identifying predictors of hospital readmission we can then formulate a strategy to reduce readmissions (Henretta et al., 2011).

Women with gynecological cancers are at an inherently higher risk for perioperative complications and readmission, when compared to other female surgical patients, given their advanced age, comorbidity profiles, and the complex care they require. Early hospital readmissions are common and costly in surgical oncology populations. Readmission reduction programs are being expanded beyond medical conditions to include surgical populations (Wilbur et al., 2016).

Nurses contacting patients via telephone early in the surgical recovery process offers an opportunity to help guide recovery. This allows the nurse to provide continuity of care, assess the patient's status postoperatively, and offer guidance and further teaching. Furthermore, it is an opportunity to assess the patients' perception of care, treatment, and provision of services. Many patients can encounter problems during the first days and weeks following discharge from the hospital. Patients may feel uncertain and anxious without medical staff support. Physicians can overestimate the ability of their patients to grasp and retain information provided by the health care team. Telephone follow-up offers a simple and accessible tool for improving communication between the

patient and medical providers after discharge, increasing patient satisfaction and compliance with recommendations of the physician provider (Braun et al., 2008).

Implication of Findings

The purpose of this study was to determine the impact of nurse-led telephone follow-up on the readmission rate of post-operative patients of the gynecologic oncology service. Though the study did not show statistical significance in the readmission rate of those in the control group versus those in the experimental group, there are important implications for future research and investigation regarding transitions of care, value added to the patient experience, loss to follow-up, and establishment of risk adjustment for the gynecologic oncology patient requiring surgery. At the time of discharge, many patients are eager to leave the hospital and may not retain information reviewed in discharge instructions or may not ever read printed materials provided at that time.

The transition of care from the hospital to the patient's home is a major challenge. There needs to be seamless communication between what has occurred in the hospital and what happens after discharge. Poor transitions of care often times result in poor health outcomes. Partnering with home health services following discharge and assessing the need for earlier outpatient follow up based on the risk adjustment of the patient for readmission should both be considered. The phone calls highlighted an area of needed improvement in discharge planning and teaching. A comprehensive discharge plan is needed to prepare patients to care for themselves at home and prevent visits to the emergency department and readmissions within 30 days of initial discharge. A comprehensive discharge plan should include hospital staff organizing follow-up care and services, timely communication of discharge information, medication reconciliation, education of patients and caregivers using the teach-back method, prompt follow-up

visits with providers in the outpatient setting, and nursing follow-up calls occurring one to three days after initial discharge to address any patient questions, concerns regarding symptoms and medications, and to reinforce teaching to the patient and their family.

The questionnaire utilized in the nursing led follow up calls is part of the Re-engineered discharge toolkit from Project RED. The Re-engineered discharge was an intervention that was conducted at Boston Medical Center from 2003-2004. This was proven to be an effective hospital to home program in an effort to reduce readmissions and poor outcomes. Future studies could look at all components of the Project RED instead of focusing solely on follow-up calls.

Application to Theoretical/Conceptual Framework

Sister Callista Roy's Adaptation Model of nursing was utilized as the framework for this study. The three concepts of her model include the human being, adaptation, and nursing. According to Roy, the goal of nursing is to promote adaptation of the patient during times of illness and health in four modes including physiological, self-concept, role function, and interdependence. Nursing judgement determines the presence or the absence of maladaptation and they can focus on the stimuli that are influencing the patients' maladaptive behavior. In order to provide high quality care, nursing must not be rigid but flexible to the needs of the individual patient and their individual circumstances. The nurse is then able to take action to promote adaptation.

Roy (1976) defines a person as the recipient of nursing care. In this study, the person is the post-operative gynecologic oncology patient who is in an ill or compromised state of health due to recent surgery, +/- the presence of malignancy, and experiencing internal and external stressors in this regard. Nursing judgement is needed

to determine if the patient's coping skills are effective in the presence of these unusual stressors associated with a post-operative state and transitioning from the hospital to the home. The nurse can guide the patient through symptom management and coping and self-concept that may be associated with surgical wounds and possible formation of an ostomy. Nursing judgement can also assess the adaptation to the emotional stressors associated with a cancer diagnosis and the fear of treatment and its side effects, potential for alteration in quality of life, and loss of control. Roy described health as a dynamic state, fluctuating in nature and constantly adapting to the environment (Roy & Andrews, 1986). The nurse-led follow-up calls allow the nurse the opportunity to assess the patient's adaptation to a change in their environment from an acute care setting to the home environment and the ability to care for oneself independently.

Limitations

This research study used a sample of patients from one practice site and was conducted over a very short timeframe. The project included patients of the gynecologic oncology service who were undergoing abdominal surgery requiring admission to the hospital of at least one night duration. The limited sample size did not allow for further stratification of benign versus malignant pathology, the stage of disease at the time of surgery, or if optimal tumor debulking was obtained. These variables could contribute to increased risk of 30 day readmission.

During the study the gynecological oncology service adopted the Enhanced Recovery after Surgery Protocol (ERAS) which may have impacted the findings. Enhanced recovery protocols are designed to decrease surgical stress; optimize patients before, during, and after surgery; and, result in faster postoperative recovery. The protocol, initially used in colorectal surgery, includes elements of early resumption of

oral intake, early mobilization postoperatively, pain control with non-narcotic agents, and early return to activities of daily living (Burch, 2012).

Implications for Nursing

Nurses have a critical impact on the quality of care provided in the inpatient setting. A significant portion of discharge education, care coordination, and transitions of care are heavily dependent on the nursing staff. Readmission and patient satisfaction are both performance indicators linked to reimbursement. There are barriers for nurses regarding discharge teaching and planning that include lack of time, work pressures, priority to clinical care rather than discharge teaching, lack of communication with physician provider about follow up, and transfers/discharges that occur on the weekend. The radical nature of surgeries performed by gynecologic oncologists, advanced age of patients, and presence of multiple comorbidities may indicate a higher risk of readmission in this population. Nurse-led telephone follow-up may still represent an opportunity for smoother transitions of care, improved patient satisfaction, and reduction in risk of loss to follow-up.

Recommendations

Healthcare organizations are charged with improving the quality of care and the safety of care provided while decreasing the overall length of hospital stay and preventing readmissions within 30 days of discharge. There is profound importance of the involvement of nursing staff in improvement in discharge teaching and education and post- discharge follow up to prevent avoidable visits to the emergency department and hospital readmissions. Future studies should focus on improvement in discharge teaching, transitions of care, and the patient experience which nursing can directly

impact. Further data would be beneficial in establishing risk adjustment for gynecological oncology patients proceeding to surgery.

Conclusion

This research study was designed to improve patient outcomes following surgery with early identification of problems, via nurse-led telephone follow-up in order to reduce the 30 day readmission rate. During the telephone calls, the nurse re-educated the patients on signs and symptoms of infection to monitor for, reviewed bowel function and addressed bowel regimens as appropriate, and discussed the importance of frequent ambulation and medication adherence with blood thinners and medications for pain, inflammation, and/or antibiotics. The findings for this study, when comparing the experimental and control group were homogenous. However, in performing the calls there was a large finding of patients that were not aware of their follow-up appointments which offered an opportunity to provide that information and prevent loss to follow-up. A significant number of patients also exhibited limited knowledge in their post-operative restrictions and further education was provided. Patients expressed being thankful for the calls and it offered them an opportunity to express concerns or clarify information and this researcher believes it has the potential to positively impact patient satisfaction in regards to communication with the health care team.

Telephone follow-up is an effective method of offering patient-centered care within and organization. High quality patient education by oncology nursing staff can offer patients reassurance of symptom management, help reduce loss to follow-up by ensuring patients are aware of scheduled follow-up appointments in the office, minimizing visits to the emergency department and reducing hospitalizations. Providing

evidence of positive financial implications of evidenced based practice will result in support from healthcare organizations. In order to demonstrate the cost savings that result from improving the management of post-operative patients, it would be beneficial to include a cost-benefit analysis in the implementation plan for future projects.

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APPENDIX A
Consent

Dear Patient,

Purpose: You are being asked to participate in a research study to determine the relationship between nurse-led telephone follow-up and readmission rates of gynecologic oncology patients requiring surgery. This research is being conducted by Karla Fernandez, a MSN student at Gardner-Webb University and an employee of the Greenville Health System.

Procedure: You are scheduled for surgery with the gynecologic oncology service. You will receive teaching prior to surgery, as well as prior to being discharged home from the hospital. All surgeries involve risks of complications. We would like to make a telephone call to you 24-48 hours after discharge from the hospital to see how you are feeling and if you are having any problems or concerns. We will discuss any concerns you are having, if you are taking prescribed medications, signs and symptoms to monitor, confirm follow up appointments, and make adjustments or recommendations if needed. Five to seven days later, we would like to call you again to see if you are having any additional concerns, or if prior reported concerns have improved.

Voluntary Participation: Participation in this research study is completely voluntary. If you agree to allow us to call you after discharge, we will ask that you provide a specific telephone number for us to call. If you do not wish to participate, please know that you may contact us at any time through the nurse telephone number provided to you in your patient information packet should you have any questions or health concerns.

Confidentiality: It will be necessary to obtain your name and telephone number to allow us to contact you after discharge. We will also be tracking your readmission data through chart reviews. Your information will remain protected on the researchers work computer that is password protected. Data will be de-identified and aggregated with all participant data. After completion of the study, all data will be given to the Hunt School of Nursing for storage for three years in a secure location.

Risks & Benefits: There are no risks associated with participation in this research study. The perceived benefit is that the nurse-led telephone follow-up will prevent an unplanned readmission to the hospital within the first 30 days after your surgery. If you have questions, or want more information, please contact the primary researcher, Karla Fernandez at (864) 404-2010 or you may contact the thesis advisor, Dr. Tracy Arnold at (704)406-4359. If you have any concerns about your rights, how you are being treated, or complaints regarding this study, benefits, or risks associated with being in this study please contact the Gardner-Webb University Institutional Review Board at 704-406-4724.

Consent to Participate: If you would like to participate in this research study, please provide your name and a telephone number. W**e** will contact you 24-48 hours after discharge from the hospital, and 5-7 days later.

Name: _____

Telephone Number: _____

APPENDIX B
Re-Engineered Discharge Toolkit

RED Discharge Preparation Workbook

Patient Name _____   **MRN** _____   **DOB** _____

Room # _____

Date of admission _____

	Language preference	**Interpreter/Translation Needed (Y/N)**
Spoken communication		
Written materials		
Phone communication		

Fill out Contact Sheet for patient, proxy, and caregiver contact information.

MEDICAL TEAM _____

Attending: _____
Pager # _____

_____
Pager # _____

_____
Pager # _____

Case Manager: _____
Pager # _____

Language Services: _____
Pager # _____

Family worker: _____
Pager # _____

Pages to Team:

Pager: _____ Time: _____ C/B?: Y N	Pager: _____ Time: _____ C/B?: Y N	Pager: _____ Time: _____ C/B?: Y N
Pager: _____ Time: _____ C/B?: Y N	Pager: _____ Time: _____ C/B?: Y N	Pager: _____ Time: _____ C/B?: Y N
Pager: _____ Time: _____ C/B?: Y N	Pager: _____ Time: _____ C/B?: Y N	Pager: _____ Time: _____ C/B?: Y N
Pager: _____ Time: _____ C/B?: Y N	Pager: _____ Time: _____ C/B?: Y N	Pager: _____ Time: _____ C/B?: Y N

DE Time: (Record time spent on patient's case)

Date: _____ DE: _____ Total: _____	Date: _____ DE: _____ Total: _____	Date: _____ DE: _____ Total: _____
Date: _____ DE: _____ Total: _____	Date: _____ DE: _____ Total: _____	Date: _____ DE: _____ Total: _____
Date: _____ DE: _____ Total: _____	Date: _____ DE: _____ Total: _____	Date: _____ DE: _____ Total: _____

Floor Nurse: (Name of patient's nurse)

Date: _____ Nurse: _____	Date: _____ Nurse: _____	Date: _____ Nurse: _____
Date: _____ Nurse: _____	Date: _____ Nurse: _____	Date: _____ Nurse: _____
Date: _____ Nurse: _____	Date: _____ Nurse: _____	Date: _____ Nurse: _____

Contacts with family/caregiver

Date: _____ Nurse: _____	Date: _____ Nurse: _____	Date: _____ Nurse: _____
Date: _____ Nurse: _____	Date: _____ Nurse: _____	Date: _____ Nurse: _____
Date: _____ Nurse: _____	Date: _____ Nurse: _____	Date: _____ Nurse: _____

Date	Outstanding Patient Teaching/Information	Date Addressed

1. Diagnoses

Admitting Dx: _____

Comorbidities: _____

Discharge Dxs _____

2. Followup Appointments

PCP Appointment

_____ **Patient has PCP?** If NO, Preferences (gender, location)? _____

Patient requests for PCP appt (weekdays, time of day): _____

PCP Name	Day / Date / Time
Clinician to see at appt (if not PCP)	**Location**
	Address/Floor: Phone #: Fax #:

Does patient have transportation to PCP appt?

_____ Yes ___ No _____ Transportation options discussed:

Team appt. requests: _____

Additional Appointments, Tests, or Lab Work to be done POSTDISCHARGE

****Attach Additional Appointment Sheet if Needed****

Day / Date / Time	Phone and Fax #	Reason / Test / Lab
	Ph: Fax:	
Provider	**Location (Address, floor)**	
How patient will get to appointment		

Day / Date / Time	Phone and Fax #	Reason / Test / Lab
	Ph: Fax:	
Provider	**Location (Address, floor)**	
How patient will get to appointment		

Day / Date / Time	Phone and Fax #	Reason / Test / Lab
	Ph: Fax:	
Provider	**Location (Address, floor)**	
How patient will get to appointment		

Day / Date / Time	Phone and Fax #	Reason / Test / Lab
	Ph: Fax:	
Provider	**Location (Address, floor)**	
How patient will get to appointment		

Day / Date / Time	Phone and Fax #	Reason / Test / Lab
	Ph: Fax:	
Provider	**Location (Address, floor)**	
How patient will get to appointment		

3. Medicine

Allergies _____ No known allergies _____

Allergy	Patient Confirm (Y/N)	If No, Explain	Allergy	Patient Confirm (Y/N)	If No, Explain

4. Pharmacy

Uses hospital pharmacy? Yes _____ No _____

Community Pharmacy Name	Phone #, Street Address, City

Pt. plan to pick up meds upon d/c: _____

Pt. requests pill box? Yes _____ No _____ Pill box given? Yes _____ No _____

5. Diet and Exercise

Discharge diet	

Pt. needs diet info. _____

Exercise/Activity Restrictions	

6. Substance use

Substance	Stage of Change	Patient Report	Current Treatment or Interested in Treatment?
Alcohol			
Tobacco			

7. Durable medical equipment needed at home?: No _____ Yes _____

If pt. checks blood sugar with glucometer, how many times daily? _____

New durable medical equipment ordered: Yes _____ No _____

Type _____

Company name: _____ Contact: _____

Address: _____ Phone: _____

Delivery date: _____

Type _____

Company name: _____   Contact: _____

Address: _____   Phone: _____

Delivery date: _____

8. Current or New Outpatient Services (ex. VNA, PT)? _____

Service _____

Company name: _____   Contact: _____

Address: _____   Phone: _____

Date scheduled: _____

Service _____

Company name: _____   Contact: _____

Address: _____   Phone: _____

Date scheduled: _____

Service _____

Company name: _____   Contact: _____

Address: _____   Phone: _____

Date scheduled: _____

9. Outstanding Tests/Labs

Tests /Labs Pending	Date Conducted	Results Expected	Who Will Follow Up on the Result

Final teaching completed? Yes _____ Done by: DE _____ Other _____ No _____

Reviewed what to do about problems? Yes _____ No _____

Patient understanding confirmed? Yes _____ No _____

Medicines reconciled with patient and medical team prior to final teaching? Yes _____ No _____

National guidelines checked prior to final teaching? Yes _____ Date: _____ No _____

AHCP given and reviewed by DE with patient?   Yes _____ Time spent: _____minutes DE_____

     No _____ Date mailed: _____

If mailed, was patient called by DE to review AHCP? Yes _____ Date: _____ DE _____ No _____

Communication/Notes

Contact Sheet

If possible, pull information from patient's medical record. Confirm correct information with patient. Identify the best time of day or days to reach the patient and other contacts.

Patient Name: _____

OK to send letter (Y / N)

Address
Street _____ Apt # _____

City, State _____ ZIP Code _____

Email address _____

Preferred spoken language: _____

Interpreter needed? (Y/N) _____

Preferred phone number: __ home __ cell phone __ work

Home Phone: (   )_____   OK to leave message? (Y/N) ___

Best time to call: _____

Cell Phone: (   ) _____   OK to leave message? (Y/N) ___

Best time to call: _____

Work Phone: (   ) _____   OK to leave message? (Y/N) ___

Best time to call: _____

Contacts

Name of Contact 1: _____

Relationship: _____
Caregiver? (Y/N) __
Proxy? (Y/N) __
Designated to receive followup phone call? (Y/N) __
Notes: _____

_____

Preferred spoken language: _____

Interpreter needed? (Y/N) _____

Preferred phone number: __ home __ cell phone __ work

Home Phone: ( )_____   OK to leave message? (Y/N) ___

Best time to call: _____

Cell Phone: ( ) _____   OK to leave message? (Y/N) ___

Best time to call: _____

Work Phone: ( ) _____   OK to leave message? (Y/N) ___

Best time to call: _____

Contacts

Name of Contact 2: _____

Relationship: _____
Caregiver? (Y/N) __
Proxy? (Y/N) __
Designated to receive followup phone call? (Y/N) __
Notes: _____

_____

Preferred spoken language: _____

Interpreter needed? (Y/N) _____

Preferred phone number: __ home __ cell phone __ work

Home Phone: ( ) _____   OK to leave message? (Y/N) ___

Best time to call: _____

Cell Phone: ( ) _____   OK to leave message? (Y/N) ___

Best time to call: _____

Work Phone: ( ) _____   OK to leave message? (Y/N) ___

Best time to call: _____

Postdischarge Followup Phone Call Documentation Form

Patient name: _____

Caregiver(s) name(s): _____

Relationship to patient: _____

Notes: _____

Discharge date: _____

Principal discharge diagnosis: _____

Interpreter needed? Y N Language/Dialect: _____

....

Prior to phone call:

Review:

    Health history
    Medicine lists for consistency
    Medicine list for appropriate dosing, drug-drug and drug-food interactions, and major side
        effects
    Contact sheet
    DE notes
    Discharge summary and AHCP

Call Completed: Y N

With whom (patient, caregiver, both): _____

Number of hours between discharge and phone call: _____

Consultations (if any) made prior to phone call:

    ❑ None
    ❑ Called MD
    ❑ Called DE
    ❑ Called outpatient pharmacy
    ❑ Other: _____

If any consultations, note to whom you spoke, regarding what, and with what outcome:

_____

_____

Phone Call Attempts

Patient/Proxy

Phone Call #1: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined/busy/rescheduled/other:

Phone Call #2: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined/busy/rescheduled/other:

Phone Call #3: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined/busy/rescheduled/other:

Phone Call #4: Date & Time:_____   Reached: Yes/No

Alternate Contact 1

Phone Call #1: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other:

Phone Call #2: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other:

Phone Call #3: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other:

Phone Call #4: Date & Time:_____   Reached: Yes/No

Alternate Contact 2

Phone Call #1: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other:

Phone Call #2: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other:

Phone Call #3: Date & Time:_____   Reached: Yes/No

    If No (circle one): ans. machine/no answer/not home/declined to provide information/busy/other:

Phone Call #4: Date & Time:_____   Reached: Yes/No

A. Diagnosis and Health Status

Ask patient about his or her diagnosis and comorbidities

- ❑ Patient confirmed understanding
- ❑ Further instruction was needed before patient confirmed understanding

If primary condition has worsened:

- ❑ What, if any, actions had the patient taken?

    - ❑ Returned to see his/her PCP (name): _____
    - ❑ Called/contacted his/her PCP (name): _____
    - ❑ Gone to the ED/urgent care (specify): _____
    - ❑ Gone to another hospital/MD (name): _____
    - ❑ Spoken with visiting nurse (name): _____
    - ❑ Other: _____
    - ❑ What, if any, recommendations, teaching, or interventions did you provide?

If new problem since discharge:

- • Had the patient:

- ❑ Contacted or seen PCP? (name):_____
- ❑ Gone to the ED/urgent care? (specify): _____
- ❑ Gone to another hospital/MD? (name): _____
- ❑ Spoken with visiting nurse? (name):_____
- ❑ Other?:_____

- • Following the conversation about the current state of the patient's medical status:
    - • What recommendations did you make?

    - ❑ Advised to call PCP (name):_____
    - ❑ Advised to go to the ED (specify): _____
    - ❑ Advised to call DE (name):_____
    - ❑ Advised to call specialist physician (name):_____
    - ❑ Other: _____

    - • What followup actions did you take?

        - ❑ Called PCP and called patient/caregiver back
        - ❑ Called DE and called patient/caregiver back
        - ❑ Other:

B. Medicines

- • Document any medicines patient is taking that are NOT on AHCP and discharge summary:

_____

- Document **problems** with medicines that are on the AHCP and discharge summary (e.g., has not obtained, is not taking correctly, has concerns, including side effects):

  Medicine 1: _____

  Problem: _____

  ❑ Intentional nonadherence
  ❑ Inadvertent nonadherence
  ❑ System/provider error

  - What recommendation did you make to the patient/caregiver?

    ❑ No change needed in discharge plan as it relates to the drug therapy
    ❑ Educated patient/caregiver on proper administration, what to do about side effects, etc.
    ❑ Advised to call PCP (name):_____
    ❑ Advised to go to the ED (specify): _____
    ❑ Advised to call DE (name):_____
    ❑ Advised to call specialist physician (name):_____
    ❑ Other: _____

    - What followup action did you take?

    ❑ Called hospital physician and called patient/caregiver back
    ❑ Called DE and called patient/caregiver back
    ❑ Called outpatient pharmacy and called patient/caregiver back
    ❑ Other: _____

  Medicine 2:_____

  Problem: _____

  ❑ Intentional nonadherence
  ❑ Inadvertent nonadherence
  ❑ System/provider error

  - What recommendation did you make to the patient/caregiver?

    ❑ No change needed in discharge plan as it relates to the drug therapy
    ❑ Educated patient/caregiver on proper administration, what to do about side effects, etc.
    ❑ Advised to call PCP (name):_____
    ❑ Advised to go to the ED (specify): _____
    ❑ Advised to call DE (name):_____
    ❑ Advised to call specialist physician (name):_____
    ❑ Other: _____

- What followup action did you take?

❑ Called hospital physician and called patient/caregiver back
❑ Called DE and called patient/caregiver back
❑ Called outpatient pharmacy and called patient/caregiver back
❑ Other: _____

Medicine 3:_____

Problem: _____

❑ Intentional nonadherence
❑ Inadvertent nonadherence
❑ System/provider error

- What recommendation did you make to the patient/caregiver?

❑ No change needed in discharge plan as it relates to the drug therapy
❑ Educated patient/caregiver on proper administration, what to do about side effects, etc.
❑ Advised to call PCP (name):_____
❑ Advised to go to the ED (specify): _____
❑ Advised to call DE (name):_____
❑ Advised to call specialist physician (name):_____
❑ Other: _____

- What followup action did you take?

❑ Called hospital physician and called patient/caregiver back
❑ Called DE and called patient/caregiver back
❑ Called outpatient pharmacy and called patient/caregiver back
❑ Other: _____

C. Clarification of Appointments

Potential barriers to attendance identified: ❑ Y ❑ N

List: _____

Potential solutions/resources identified: ❑ Y ❑ N

List: _____

Alternative plan made: ❑ Y ❑ N Details: _____

Clinician/DE informed: ❑ Y ❑ N Details: _____

D. Coordination of Postdischarge Home Services (if applicable)

Document any postdischarge services that need to be checked on and who will be doing that (caller/patient/caregiver).

E. Problems

Did patient/caregiver know what constituted an emergency and what to do if a nonemergent problem arose?

❑ Yes   ❑ No

If no, document source of confusion:

F. Additional Notes

G. Time

Time for reviewing information prior to phone call: _____

Time for missed calls/attempts: _____

Time for initial phone call: _____

Time for talking to other health care providers: _____

Time for followup/subsequent phone calls to patient: _____

Time for speaking with family or caregivers:_____

Total time spent: _____

Caller's Signature: _____

APPENDIX C
ECOG Performance Status

GRADE	ECOG PERFORMANCE STATUS
0	Fully active, able to carry on all pre-disease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work
2	Ambulatory and capable of all selfcare but unable to carry out any work activities; up and about more than 50% of waking hours
3	Capable of only limited selfcare; confined to bed or chair more than 50% of waking hours
4	Completely disabled; cannot carry on any selfcare; totally confined to bed or chair
5	Dead

*Oken M, Creech R, Tormey D, et al. Toxicity and response criteria of the Eastern Cooperative Oncology Group. *Am J Clin Oncol.* 1982;5:649-655.

Developed by the Eastern Cooperative Oncology Group, Robert L. Comis, MD, Group Chair.*