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Care Coordination: Using a Nurse Navigator in an Endoscopy Unit

Submitted in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice at
Eastern Kentucky University

By

Judith L. Poe

Winchester, KY

2018

Abstract

Compliance with colorectal cancer (CRC) screening in Kentucky is low. This is substantiated by Kentucky having the highest rate of new CRC cases in the nation and being the fourth highest in CRC-related mortality. Kentucky's colorectal screening rate in 2012 was 62.9%. The incidence rate for colorectal cancer in Kentucky is 49.2 per 100,000 which is the highest rate in the United States. Patient navigation has shown promise in increasing compliance with CRC screening and reducing health disparities. The adoption of a patient navigation model in an endoscopy unit can increase efficiency, reduce patient cancellations and same day no show rates, provide patient education, and increase patient, physician and staff satisfaction. The purpose of this paper is outline the process for creating a business plan which will provide evidence to support a nurse navigation model in an endoscopy unit.

Keywords: colorectal cancer screening, navigation, efficiency, endoscopy

Care Coordination: Using a Nurse Navigator in an Endoscopy Unit

By

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Care Coordination using a Nurse Navigator in an Endoscopy Unit

The incidence of colorectal cancer (CRC) and the lack of cancer screening follow-through is well documented (American Cancer Society, 2015; Centers for Disease Control and Prevention (CDC), 2013). Kentucky has the highest rate of new CRC cases in the nation and fourth highest rates of CRC-related mortality (The Kentucky Colon Cancer Screening Advisory Committee, 2013).

In 2001, the Commonwealth of Kentucky created an action plan to address adherence to cancer preventive services and health disparities. The plan is revised quarterly at the Kentucky Cancer Consortium meetings which keeps the data current and relevant to Kentuckians. Several of the strategies listed in the *Kentucky Cancer Action Plan* (CAP) are focused on providing education to patients regarding colorectal cancer screening. One recommended intervention is the utilization of patient navigators to increase follow-through with CRC screening.

Background and Significance

The United States Preventive Services Taskforce (USPSTF) recommends screening for CRC beginning at age 50 and continuing until age 75 using one of the following diagnostic tests; fecal occult blood testing (FOBT), flexible sigmoidoscopy or colonoscopy. However, the 2012 Behavioral Risk Factor Surveillance System (BRFSS) survey revealed that 65.1% of the U.S. population had completed their recommended screening for CRC; this was a slight increase from 65% in 2010 (CDC, 2014).

Context of the Problem

CRC is the third most common cancer diagnosed and second leading cause of cancer related deaths in the United States for men and women combined (American Cancer Society, 2015). Barriers to CRC screening which are complex, include cost of care, low health literacy, fear of cancer diagnosis and primary care physician not recommending screening (DeGroff, et al, 2014; Dietrich et al, 2013).

Percac-Lima et al., (2008) and Nickel et al., (1998) revealed a need for patient navigators and health counselors to assist patients with needed health care services through education, reduction of access barriers and utilization of appropriate healthcare resources. Access to primary and preventive health care services is fundamental in reducing mortality and morbidity by ensuring early detection of disease and treatment of health issues (Lebrun & Shi, 2011).

Scope of the Problem

Tremendous progress has been made to reduce CRC incidence and mortality but low rates of CRC screening continue to be a concern (Raul, Menon, Burness, & Breslau, 2012). The American Cancer Society (2015) estimated there would be 93,090 new cases of colon cancer and 39,610 new cases of rectal cancer in United States. Siegel et al. (2014) estimated about 2,170 Kentuckians would be diagnosed with CRC and a mortality rate of 850 in 2014.

Consequences of the Problem

Kentucky's CRC screening rate in 2012 was 62.9% (CDC, 2014). The incidence rate for CRC in Kentucky is 49.2 per 100,000 which is the highest rate within the United States (CDC, 2014). According to the CDC, CRC has a 5-year relative survival rate of 90% when cancer is found early. Less than 40% of colorectal cancers are found early because screening rates are low.

In 2012, the financial burden of a primary diagnosis of CRC in Kentucky was over \$52,000 and totaled more than \$110 million for the year (The Kentucky Colon Cancer Screening Advisory Committee, 2013). Federal and state governments are stretched financially and adding the burden of subsidizing insurance for the under or non-insured will only increase the budgetary deficit. The Affordable Care Act (ACA) impacted Kentucky legislation related to CRC screening. The ACA left a loop hole for many insurers which were in place prior to the final approval of this act allowing the payers to deny payment for CRC screening, especially colonoscopies which change from diagnostic to

therapeutic (American Cancer Society, 2015). Kentucky (2015) legislative bills; Senate Bill (SB) 61 and House Bill (HB) address the barriers to CRC screening requiring insurers to pay for CRC screening regardless of the billing code or other procedures performed in the same clinical encounter and as part of ongoing CRC prevention (LegiScan, 2015).

Evidence-based Intervention

The intervention was a business plan (Appendix F) for a nurse navigator model for an endoscopy unit. The nurse navigator would reach out to the patients and families via a phone call to reinforce the importance of keeping an appointment for CRC screening and provide teaching related to any procedures. Patient navigation programs should focus on reducing patient-specific barriers to accessing and obtaining health care and be centered on patients' individual needs and circumstances (DeGroff, et al, 2014; Dietrich et al, 2013)

Healthcare literacy has a major influence on the patient's understanding of the need for preventive care. Education and coaching are resources which can be used to motivate patients to seek preventive services including CRC screening (Brouse, et al, 2003). Research supports the use of a nurse navigator to influence patients' compliance with preventive healthcare services which can impact CRC mortality.

Purpose of the Project

The purpose of the project was to develop a nurse navigator program for an endoscopy unit in a tertiary healthcare system. The nurse navigator program was designed to improve access to healthcare specialists i.e. gastroenterologists, to ensure a seamless experience across the care continuum, adopt evidence-based practices to improve the predictability in patient outcomes and optimize the efficient delivery of advanced subspecialty care which are objectives in the strategic plan (UK HealthCare 2015-2020 Strategic Plan, 2015). Patient navigation shows potential in increasing adherence to CRC cancer

screening and reducing health disparities; however, it is a complex intervention to operationalize in healthcare (DeGroff, Coa, Morrissey, Rohan, & Slotman, 2014).

The expected outcomes are decreased procedural cancellations and “no shows”, improved colon prep quality, and increased patient, staff and physician satisfaction. The introduction of a nurse navigator to aid the patient through our complex healthcare system would decrease the barriers to CRC screening.

Theoretical Framework

The Precaution Adoption Process Model

The Precaution Adoption Process Model (PAPM), which was developed from the Transtheoretical Model and first introduced by Weinstein (1988) and applied to assess the effectiveness of using a patient/nurse navigator to influence compliance with CRC screening (Hester et al, 2015). PAPM focuses on health behavior change and uses social learning approaches to health behavior. PAPM uses awareness, intention and past health behavior to define seven discrete stages through which people may pass as they proceed toward the process of adopting a health behavior. The seven stages are unaware, unengaged, undecided, decided not to act, decided to act, acting, and maintenance (de Vet, de Nooijer, Oemena, de Vries & Brug, 2008).

A nurse navigator can be used to influence patients in each of the stages of PAPM based on the healthcare setting. In Stage one, the patient is unaware of the recommendations for CRC screening; the intervention could be educational materials or primary care practitioner consultation. In Stage two the patient is aware but unengaged and in Stage three, the patient is engaged and thinking about completing CRC screening. Educational interventions for stages two and three would be the same as stage one. In Stage four, the patient has decided to not complete CRC screening; the nurse navigator would mail educational materials or phone the patient to reinforce the importance of CRC screening. The patient in

stage five has decided to complete CRC screening but not made an appointment; the nurse navigator could intervene by assisting the patient in scheduling an appointment. Stage six encompasses the patient's decision to complete CRC screening; the nurse navigator would provide the patient and/or family the prep instructions and answer any additional questions related to screening. Stage seven is maintenance; the nurse navigator's role would be sending reminder letters to patients.

A survey conducted as part of a randomized controlled study used the PAPM to evaluate patients' readiness related to CRC screening and tailoring interventions based on the assigned stage. The survey concluded that the PAPM was useful to define individual beliefs, attitudes, and barriers to CRC screening (Costanza et al., 2015).

Swanson's Theory of Caring

Kristin Swanson's Theory of Caring is a middle range theory developed in 1991 and was used to guide the development of the business plan. The five processes of Swanson's Theory of Caring are knowing, being with, doing for, enabling and maintaining belief (Swanson, 1993).

Knowing is the nurse's comprehension of how an event will affect a patient such as the recommendation by the patient's physician to have a CRC screening exam. Being with implies being present for the patient. Open communication, listening and empathy are examples of how a nurse is being with the patient when there is anxiety related to the CRC screening. Doing for is anticipating the patient's or family's needs such as education related to the CRC screening. Enabling involves facilitating the patient to complete the CRC screening. Maintaining belief ensuring patients and families understand the need for the screening and possible implications if they do not follow through with the CRC screening.

The healthcare organization's nursing professional practice model is based on Swanson's Theory of Caring. The nursing profession care model provides the nurses the autonomy to provide optimal patient care:

***"Caring:** I believe that patient/family-centered care is our core element of nursing.*

***Knowing and Being with:** I am accountable to myself, my patients, my team, my organization and my profession for my decisions and actions.*

***Doing for:** I am a leader committed to evidence-based practice, a safe environment and quality outcomes.*

***Enabling:** I am empowered to ask, act and decide.*

***Maintaining Belief:** I am inspired to learn, innovate and excel."*

Literature Review

A literature search was conducted using ProQuest Nursing and Allied Health Source, CINAHL, and Medline. Multiple articles were found during the search to support the proposed project using the keywords; colorectal cancer screening, navigation, efficiency, endoscopy.

Integrative review

Christie et al. (2008) conducted a prospective randomized controlled trial to determine whether a patient navigator enhanced CRC screening by colonoscopy in minorities. All patients had completed a visit with their primary care physicians and received a referral for screening colonoscopy. The clinical trial was set at a local community health center (Settlement Health) in New York.

The trial had a small sample size (n=21) of patients; men and women age >50, who were asymptomatic for gastrointestinal symptoms and needed CRC screening. The control group (n=8) received no intervention with a patient navigator while the intervention group (n=13) received an intervention of a phone or in-person educational interview from the patient navigator. The investigators used Fisher's exact test and Chi-squared analysis to analyze the data. The results showed 53.8% of navigated patients completed screening colonoscopy versus 13% of non-navigated patients ($p=0.085$). The success of the navigator intervention was assessed by medical chart review for documentation of

completion of screening colonoscopy at three and six months. Sixty-three percent of non-navigated patients refused screening colonoscopy, compared with only 23% in the navigated group.

The primary outcome measure was whether the patients had completed their screening colonoscopy. Secondary outcome measures included the quality of the preparation in the patient navigation group, patient satisfaction with navigation services. Limitations of this study were the small sample size and difference in colonoscopy completion rates did not meet statistical significance between navigated and non-navigated patients. The trial did not assess specific aspects of navigation that may have influenced the patients' decisions to undergo screening. Strengths of the study included data to support in effectiveness of a patient navigator in increasing screening colonoscopy rates in low-income minorities.

Dietrich et al. (2013) conducted a randomized controlled trial to explore whether telephone outreach, delivered by Medicaid managed care organization (MMCO) staff, could increase colorectal cancer (CRC) screening among publicly insured urban women. This was a large study in eleven federally funded Community Health Centers, five municipally funded diagnostic and treatment centers, and four private practices in New York City.

The sample which consisted of 2,240 MMCO insured women, aged 50 to 53 years, who received care at a participating practice and were overdue for CRC screening. The randomization was done at a ratio of 1:3, resulting in 562 women assigned to the intervention group and 1,678 women assigned to the control group. Data analysis was conducted using odds ratios (ORs) with 95% confidence intervals from multivariate logistic regression model and bivariate outcomes using an unadjusted χ^2 test. The absolute difference in screening rates between intervention and usual care women ranged from 1.1% (OR= 1.02, 95% CI, 0.76-1.38) to 13.7% (OR= 1.98, 95% CI, 1.39-2.82). Screening rates were 6% higher in the intervention arm and a significant adjusted overall OR of 1.32 (95% CI, 1.08-1.62). The

intervention group screening rates were between 11.7% and 25.6% higher than usual care group with an overall increase of 15.1% ($p < .001$). A limitation to this study was the inability to generalize results to a wider population. Strengths of the study were the large sample size and the focus on increasing CRC screening among an underserved and difficult to reach population.

Green et al. (2014) completed a follow-up randomized controlled trial within the larger Systems of Support to Increase Colorectal Cancer Screening Study (SOS). The purpose of the study was to test the hypothesis that nurse navigation would increase the completion of colonoscopy after a positive screening test. The investigators utilized Wagner's chronic care model as the conceptual framework for their study. The study setting was 21 primary care medical centers in western Washington State.

This trial included a sample of 140 participants 50 to 74 years old with a positive FOBT or sigmoidoscopy. Data analysis was completed using logistic regression and predictive margins were estimated probabilities adjusted across the covariate distribution in the sample. The differences between groups are reported as relative risks and risk differences with 95% confidence intervals. The number of patients completing follow-up within six months were 56 in usual care group and 64 in intervention group.

Weaknesses of this study was the small sample size and the differences among the groups were not statistically significant. Strengths of the study included rate of colonoscopy completion within six months was higher in the navigation group than the usual care group.

Menon et al. (2011) tested the hypothesis that participants receiving telephone-based tailored education or motivational interviewing had higher colorectal cancer screening completion rates compared to usual care. The investigators used The Health Belief Model and Transtheoretical Model of Change as the conceptual framework of the study. Participants were assigned by block randomization to one of three groups: control, tailored counseling, or motivational interview. This study setting was

three US sites: two large Midwestern medical centers (a Veteran's Administration Medical Center and an academic health center) and one Southeastern medical center.

The sample group was 515 patients who were 50 years or older; having had no personal or family history of colorectal cancer; but were non-adherent with stool blood test, sigmoidoscopy and colonoscopy. Participants who completed a colorectal cancer screening test post-intervention was 11.8% (usual care), 23.8% (tailored counseling), and 18.5% (motivational interview; $X^2 [df=4] = 7.80$, $p < .05$). Participants in the tailored counseling group had 2.2 times the odds of completing post-intervention colorectal cancer screening than did the participants in the usual-care group (AOR=2.2, 95% CI 1.2, 4.0). Participants who reported having a physician recommend a screening test had just over two times greater odds of completing post-intervention screening than those who reported no physician recommendation (AOR=2.3, 95% CI 1.3, 3.8).

Weaknesses of the study were the significant difference by race/ethnicity across study groups and study personnel not being in the clinics long enough to establish a rapport with patients. A strength was the 70% study response rate.

Greiner et al. (2014), conducted a randomized controlled trial to determine the effectiveness of an education intervention on completion of fecal immunochemical test (FIT) or screening colonoscopy. Participants were randomized to one of two intervention groups: implementation intentions (I-I) condition (Experimental group); or a generic education condition (Comparison group). The implementation intentions group received education and information on colorectal cancer screening and answered planning questions based on their readiness level specific to colorectal cancer screening. The conceptual framework, PAPM, was used to support and test this theoretically based (I-I) intervention for improving CRC screening among unscreened adults in urban safety-net clinics in a Midwestern

metropolitan area. The generic education group received the same education and information on colorectal cancer screening as the I-I group but did not receive the planning questions.

The trial had a sample of 468 participants aged ≥ 50 years, who were due for CRC screening either screening colonoscopy or FIT. The participants' median age was 57 years; 42% were non-Hispanic African American, 28% non-Hispanic white, and 27% Hispanic. About half (48%) completed a CRC screening test (of those screened, 53% completed a FIT and 47% completed a colonoscopy).

Participants who received I-I (Experimental group) were more likely to complete CRC screening than those in the comparison group (54% to 42%, AOR=1.91, 95% CI=1.26, 2.89). The primary study outcome measure was completion of either a FIT or screening colonoscopy. Other self-reported variables included; cancer fatalism, perceived self-efficacy, PAPM stage, perceived risk of getting CRC, insurance coverage, education, employment, marital status, having a regular physician, heart disease, cancer, high blood pressure, asthma, and diabetes. It was unclear how the burden of symptomatic disease affected these groups

Some limitations to this study were unintended bias and failure of the hospital endoscopy scheduling department to provide consistent Spanish speaking scheduling support to participants. Strengths of the study were sample size and cost of test not being a barrier.

Interventional review

Chambers et al. (2016) used the John Hopkins Nursing Evidence-based Practice Model to implement an electronic colonoscopy order set. The practice model assisted the nurses and organization through the problem-solving process to bring reliable and valid research to the bedside. The quality initiative sample was 38 inpatients at the Virginia Commonwealth University Medical Center. The interventions for the project included an electronic order set for bowel preparation, patient education, nurse education, and physician education. One of the first steps in this intervention was creating a

culture of change. The investigators created a multidisciplinary team of stakeholders to be the champions for the proposed interventions. The change in practice of using an electronic order set for colonoscopy which included bowel prep was piloted for seven days on one patient unit.

The team provided education to the nurses and physicians on the designated pilot unit. The education consisted of a pre-assessment of staff knowledge, review of electronic order set and PowerPoint presentation demonstrating the proper way to prep a patient for a colonoscopy. During the pilot five patients were scheduled for a colonoscopy of which three had orders entered electronically. The three patients had excellent to good bowel prep. The two patients who had written paper orders had good bowel prep but had a previous colonoscopy. These results showed the use of electronic order set to be credible and presented an opportunity for organizational change.

Retrospective chart reviews of the patients receiving the interventions were conducted. The data used to measure the impact of the interventions were quality of bowel preparation and utilization of the electronic order set. The quality of bowel preparation was documented on a written form completed by the physicians after the procedure.

The intervention improved the quality of colon preparation and reduced canceled procedures in an endoscopy unit. The implementation of the order set provided potential savings for the hospital which attributed to improvements in the bowel preparation processes. The results also increased efficiency within the endoscopy unit, reduce patient cancellations and same day no show rates.

The electronic order set was used to order the procedure for 61.5% ($n = 24$) of the 38 patients. Sixty-six percent ($n=26$) of the patients received pre-procedure education, with six (23%) of these patients having failed colonoscopies. Thirteen (33%) of the patients who did not receive pre-procedure education and eight (61%) had failed colonoscopies.

A multicomponent quality improvement program using Andersen's (2008) Behavioral Model of Health Services Use was used by Kalayjian et al. (2015) to improve attendance rates and colon preparations in a multispecialty endoscopy suite. The quality initiative was a result of increasing nonattendance or "no shows" on the day of a scheduled procedure and poor colon preparations rates which contributed to inefficiency, wasted resources, and increased costs in the endoscopy suite. The investigators noted nonattendance rates ranging from 21% to 29%. They examined patient factors associated with nonattendance using a retrospective case control study. Their research revealed younger patients (< 60 years), screening appointment, and insurance type were associated with nonattendance or "no show".

The study sample was 130 patients ranging in age from 18 to 87 years with an overall mean of 55 years who had a screening colonoscopy at the multispecialty endoscopy suite at Metro Health Medical Center in Cleveland, Ohio, a 500-bed facility. A multidisciplinary team used brainstorming to determine the factors contributing to the decline in attendance and bowel preparation rates. The team placed identified issues into four domains: system issues, staffing issues, patient issues, and nurse-specific issues.

Several obstacles were identified; patients leaving appointments without written instructions, multiple bowel preparation routines which contributed to miscommunication and confusion, and difficulty contacting the patient for pre-procedure instructions. The multidisciplinary team identified solutions to the multiple obstacles in the domains. The recommended interventions included (a) a default bowel preparation; (b) linking the referral order with the printed preparation instructions in the electronic health record (EHR); (c) linking the procedure order in the EHR directly to the patient's pharmacy; (d) patient instructions were updated and expanded; (e) addition of prerecorded telephone preparation instructions; (f) procedure instructions were added to the clinic's website; (f)

reestablishment of a direct endoscopy nurse–patient phone line for procedure-related questions; and (g) a 24-hour hospital nurse line availability for after-hour patient questions.

Measurement of the interventions was accomplished through prospective reviews of daily schedule, development of an automatic process for statistics requested from information services (IS) and documentation in the EHR “LOS110 for unnecessary appointment” to capture poor preparation rates. The team collaborated with informatics to incorporate additional documentation to capture the name of the procedure that was cancelled, reason for the cancellation, whether written instructions were received, and whether the patient received a pre-procedure call.

Analysis of the data revealed a 39% improvement in attendance rate post-reminder call, non-attendance rates less than 30%, successful colon preparation rates equal to or greater than 95%. Nursing pre-procedure phone calls did provide an opportunity to review prep instructions and provide patient education on importance of screening colonoscopy. Reminder phone calls were not a predictor of nonattendance.

Project SCOPE (Suffolk County Preventive Endoscopy) Project was created to provide a feasible method for an academic medical center (Stony Brook University Medical Center) to provide high-quality screening colonoscopy for low-income populations (Lane, Messina, Cavanagh & Andersen, 2013).

The project’s target population were uninsured and underinsured patients of the Suffolk County Department of Health Services ten community health centers. During a 40-month period, 800 colonoscopies were performed. The perception of the staff of endoscopy services at the health center prior to any interventions was that patients rarely kept their appointments and that inadequate bowel preparation was the norm. Patient issues identified during the assessment phase of the project were (a) language barriers; (b) lack of family support; (c) socioeconomic constraints; (d) low health literacy; and

(e) transportation barriers. The team used these issues to choose quality improvement interventions which included (a) telephone visit with preventive medicine physician pre-procedure to assess comorbidities; (b) patient education; and (c) bilingual patient navigators for facilitation and reinforcement of patient education. The expected outcomes post-intervention were reduction of cancellations and reinforcement of education.

The patient navigators contributed to the success of the project by assisting the patients in removing the barriers identified during the assessment phase, providing intensive training in bowel preparation, and delivering language-appropriate services to overcome health illiteracy. Data analysis reveals a low no-show rate of 3% and >90% adequate bowel preparation which were the expected outcomes.

Nuss et al. (2012) evaluated the Louisiana Fit Colon Program (FITCo). The purpose of the project was to demonstrate that the combination of patient navigation and providing patients with an easy-to use CRC screening option as an effective method that potential colorectal cancer screening programs can deploy in similar populations of un- and under-insured adults. The interventions were introduced in seven federally qualified health centers and three state hospitals.

The target population (n= 975) was patients which were at average risk for CRC; age 50–64 years old; under- or uninsured; low-income and non-compliant with any CRC screening recommendations. Patient navigation was a primary intervention provided to the participants in the study. The outcomes of the interventions were patient education and identification of barriers: individual, community and environment.

The success of the quality improvement project was measured with descriptive statistics to describe demographic characteristics. The chi-squared and independent samples t-tests were used to determine differences between prior screenings, demographic groups and returned FIT tests. An

analysis of variance test was used to determine differences between age groups and returned FITs. Patients between the age ranges 50–54 and 55–59 were more likely to be non-compliant than those between the ages of 60 and 64 years ($p < .05$). A correlation between previous screening and FIT compliance ($p < .05$) was evident. Overall 88% of the participants were compliant with the FIT testing (N=854).

Fiscella et al. (2011) performed a quality improved project at a safety-net practice caring for underserved patients. The purpose of the intervention was to examine the impact of a multimodal intervention on mammography and CRC screening rates.

The participants were 40 to 74 years old without any form of insurance in a large family medicine safety-net practice in upstate New York who were past due for receipt of either mammography or CRC screening (n=323). Patient navigation occurred through outreach with letters, phone calls or interaction during patient visits by medical assistants were the interventions implemented.

Review of chart documentation for completion of breast cancer or colorectal cancer screening was conducted. Findings showed that the intervention tripled odds of cancer screening. Screening rates increased for colorectal cancer screening which was 28% in the group receiving the intervention versus 10% for patients not receiving the intervention initially. Table 1 provides a summary of the literature review (Appendix A).

Agency

Setting

The clinic setting for the project was a multi-facility healthcare provider for the Commonwealth of Kentucky. A tertiary healthcare organization serving greater than 600,000 people annually in both the inpatient and outpatient hospital settings. This healthcare organization impacts the promotion of wellness for eastern Kentucky and beyond.

There are two endoscopy units within the organization and both provide CRC cancer screening. These endoscopy units perform approximately 10,000 gastroenterology procedures annually. The community hospital endoscopy unit is primarily an outpatient setting in which 90 percent of the CRC screening colonoscopies are performed. The tertiary medical center is more inpatient focused therefore the proposed intervention will primarily focus on community hospital setting with the opportunity to expand to the other facility.

Target Population

The target population for the nurse navigator model was patients scheduled for endoscopy procedures including CRC screening at the healthcare agency. The agency's community hospital endoscopy unit treats patients 18 years of age and older.

Congruence of Capstone Project to Organization's mission, goals and strategic plan

The organization's strategic plan, *Strategy 2020*, has four chapters. The chapters support the organization's mission and goals; growth of complex care, strengthening partnership networks, value-based care and payments and strategic enablers. The foundation of the strategic plan is patient-centered care.

The organization created new marketing strategy using the key words: "*The Power of...*". Key words used in the strategic plan for Digestive Health Services include: *forefront, collaborative, patient-centered, research-driven, comprehensive and advanced* in their departmental vision statement (UK HealthCare 2015-2020 Strategic Plan, 2015).

The project supported the foundation of patient-centered care in organization's strategic plan by providing a connection with the patients which provides a personalized experience at key moments during the patient journey. The project will improve access to specialists i.e. gastroenterologists, ensure a seamless experience across the care continuum, adopting evidence-based practices which will improve

the predictability in patient outcomes and optimize the efficient delivery of advanced subspecialty care which are objectives in the strategic plan (UK HealthCare 2015-2020 Strategic Plan, 2015).

Stakeholders

The key stakeholders of the project included but are not limited to: Chief Operating Officer, Chief Medical Officer, Chief Nursing Officer, Peri-operative Services Administrator, medical directors of the endoscopy units, nurse leaders of the endoscopy units, Access Center (schedulers) leadership, and direct patient care staff. Some of these stakeholders are distanced from the daily operations of the endoscopy units and patients affected but they each play a crucial role in the success of the proposed change.

Statement of Mutual of Agreement

A statement of mutual of agreement was obtained with the project agency. A description of the project was provided for the project agency and appropriate signatures obtained (Appendix B).

Project Design

The project was a business plan to support designing a nurse navigation model in an endoscopy unit. The expected outcomes were decreased procedural cancellations and “no shows” by 10%, improved colon prep quality by 10%, and increased outpatient satisfaction "personal issues" to 90.7 from baseline of 90.0. The introduction of a nurse navigator to aid the patient through our complex healthcare system would decrease the barriers to CRC screening such as low health literacy, lack of transportation before and after the procedure, language barriers and socioeconomic issues.

The organization's administration and nurse leaders were informed of the project. The key stakeholders were of the change and the impact their support will make on the quality of care and outcomes to the patients.

An outline of the objectives, literature search to support the best practice change, outcome measurement and business plan were developed. The key objective of the nurse navigation program was to provide patient education to support the completion of the recommended CRC screening. Other objectives of the program were reduced patient cancellations and same day "no show" rates, increase patient satisfaction, staff inefficiencies, and staff and physician satisfaction.

Project Methods

Description of evidence-based intervention

The project was a business plan using financial and evidence-based information to support a nurse navigator model in an endoscopy suite. The intervention was a presentation to key leaders at the healthcare organization. The intervention was completed on April 11, 2018 at the senior nurse leaders meeting.

Procedures

IRB submission process. Intuitional Review Boards (IRB) are in place to protect subjects and ensure ethical research during studies or quality improvement projects in facilities. An exempt IRB proposal was submitted to the organization's Intuitional Review Board and approval obtained on January 9, 2018 (Appendix C). An exempt IRB proposal is submitted when human subjects are not involved and patient identifying information is coded to ensure there is no information breach. The project was presented to the Nursing Research Council at the organization and approval obtained (Appendix D). An IRB modification proposal was submitted at the direction of the Nursing Research Council and approval obtained on February 23, 2018 (Appendix E).

Measures and Instruments. In this turbulent time of healthcare finance; a delicate balance must be created between patient outcomes and healthcare costs. An endoscopy nurse navigator is one strategy to contribute to reaching this balance.

Implementation. A business plan was developed and presented to senior nursing leaders at the agency on April 11, 2018. These leaders included the Chief Nursing Officer and Assistant Nurse Executives. The business plan was summarized in a PowerPoint presentation (Appendix G). The nurse leaders provided feedback on the presentation especially stressing to be clear that the navigator role needs to be a nurse based on the research. Each attendee was also given a copy of the business plan to review and provide further feedback as appropriate. The future goal would be implementation of a nurse navigator model using the evidence provided.

Data Collection. Data was extracted from chart reviews, surgery scheduling database and financial software programs to support the development of a nurse navigator model. The data included demographic data to determine at risk populations, case cancellations and no shows, reasons for case cancellations and lost revenue.

Data analysis. Demographic information from patients which have cancelled or no showed for their CRC screening procedure was analyzed to identify at risk populations. Data was analyzed using SPSS v21. The financial information related to case cancellations and no shows was analyzed to determine recoverable revenue. Tables A-E display the analysis of the data.

Table A

Bowel prep quality

Documented results	Frequency	Percent
NA	15	10
Excellent	76	5.3
Good/adequate	881	61.2
Fair/inadequate	286	19.9
Poor/40% obscured or greater/unsatisfactory	127	8.8
Adequate to identify polyps 6mm	52	3.6
Missing	2	.1
Total	1439	100.0

Table B

Cancellation Reasons

Reason	Frequency	Percent
Patient no show – day of	154	39.8
Cancelled by patient day of	31	8.0
Cancelled by patient 12-72 hrs	85	22.0
Cancelled by patient >72hrs	117	30.2
Total	387	100.0

Table C

Age of patients not completing screening colonoscopy

Age (years) Range	Frequency	Percent
50 - 55	147	38.1
56 - 60	122	31.6
61 - 65	71	18.4
66 - 70	33	8.5
71 - 75	14	3.6
Total	387	100.0

Table D

Gender of patients not completing screening colonoscopy

Gender	Frequency	Percent
Female	218	56.3
Male	169	43.7
Total	387	100.0

Table E

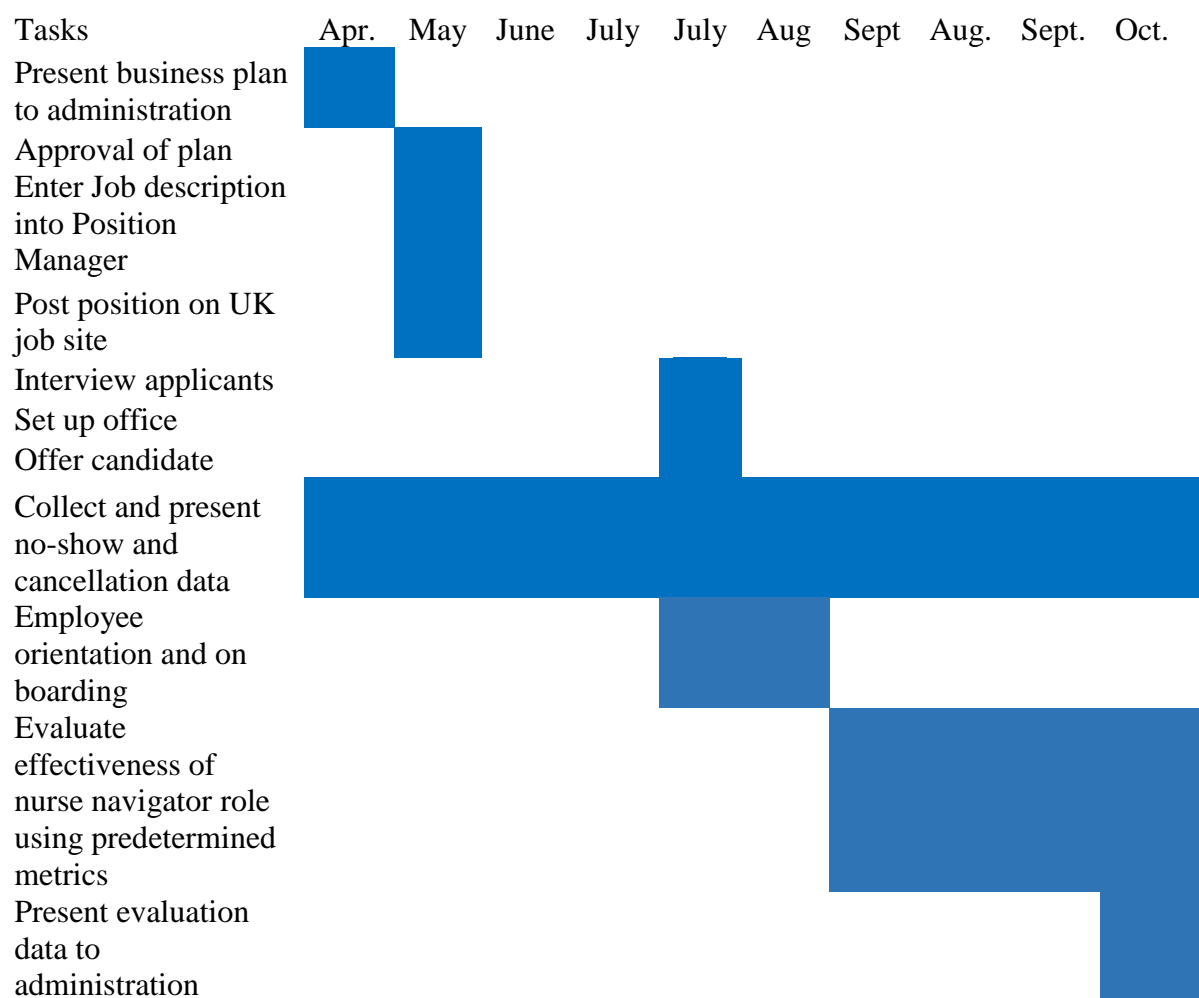
Race of patients not completing screening colonoscopy

Race	Frequency	Percent
African American	93	24.0
Asian	4	1.0
Caucasian	288	74.4
Native American	2	.5
Total	387	100.0

Timeline of Project Phases

The GANTT chart below outlines the timeline of the project which included implementation of the project i.e. presentation of the business plan. The next step is obtaining approval for the nurse navigator position.

Proposed Timeline for Endoscopy Nurse Navigator



Resources

Resources needed for this proposal included access to demographic and financial data. SPSS v21 software was used to analyze the collected data. There are no budgetary or personal needs to create the business plan.

Feasibility for Sustainability

Nurses and nurse leaders play a pivotal role in promoting CRC screening and reducing cancer mortality. Healthcare literacy also has a major influence on the patient's understanding of the need for preventive care. Education and coaching are resources which can be used to motivate patients to seek preventive services including colorectal cancer screening.

Utilization of the Precaution Adoption Process Model which focuses on health behavior change and social learning approaches to health behavior supports the future implementation of the business plan for a nurse navigation program. The feasibility for sustainability will be demonstrated by the recovery of lost revenue and the improved efficiency of a full procedure schedule.

Discussion and Implications

The project evolved from an inquiry to find a healthcare disparity in Kentucky in which nurses could have an impact. Patient-level interactions such as one-on-one education, screening reminders and reducing barriers to preventive measures have been effective in CRC screening rates (Domingo & Brown, 2017).

Project limitations included: (1) uncertainty if implementation of the nurse navigator program will gain approval, and (2) limited feedback from the nursing leaders after presentation. There is limited information on which nurse specific interventions lead to an increase CRC screening rates (Domingo & Brown, 2017). However, the literature review and the analyzed data demonstrated the value of additional interventions to increase CRC screening compliance at healthcare organization.

Summary

Implementing a targeted approach such as nurse navigation can impact CRC screening compliance by providing education about the process and addressing barriers to compliance (Asgary et al, 2015; Kalayjian et al., 2015; DeGroff, et al, 2014; Dietrich et al, 2013). Access to primary and preventive health care services is fundamental in reducing mortality and morbidity by ensuring early detection of disease and treatment of health issues (Lebrun & Shi, 2011). This project did heighten the awareness of the impact of CRC in the state of Kentucky and provided a nursing intervention to influence compliance with CRC screening.

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Appendix A

Table 1. Literature Review

Summary of Literature Review				
Citation (Full APA)	Study Purpose	Design/ Method	Sample/ Setting	Findings
<p>Christie et al. (2008). A randomized controlled trial using patient navigation to increase screening among low-income minorities.</p> <p><i>Journal of the National Medical Association</i>, 100 (3), 278-284. Retrieved from http://eds.a.ebscohost.com.libproxy.eku.edu/</p>	<p>The purpose of the study was to determine whether a patient navigator (PN) can help overcome the organizational barriers low-income minorities face in trying to obtain screening colonoscopy.</p>	<p>RCT prospective clinical trial; designed to determine whether a patient navigator enhances colorectal cancer (CRC) screening by colonoscopy in minorities who completed a visit with his/her primary care physician and received a referral for screening colonoscopy.</p>	<p>N=21 patients men and women age >50, who were asymptomatic for gastrointestinal symptoms, were in need of screening local community health center (Settlement Health) in New York state</p>	<p>53.8% of navigated patients completed screening colonoscopy versus 13% of non-navigated patients (p=0.085)</p> <p>Sixty-three percent of non-navigated patients refused screening colonoscopy, compared with only 23% in the navigated group.</p> <p>One-hundred percent of navigated patients were very satisfied with navigation services.</p> <p>Eighty-six percent of navigated patients had an excellent or very good colon prep; however, there was no difference in preparation quality between groups (p=0.10).</p> <p>The effectiveness of the navigation on the outcomes was assessed by medical chart review for documentation</p>
<p>Dietrich et al. (2013). Telephone outreach to increase colon cancer screening in Medicaid managed care organizations: A randomized controlled trial. <i>Annals of Family Medicine</i>, 11(4), 335-343. Retrieved from http://eds.a.ebscohost.com.libproxy.eku.edu/</p>	<p>The purpose of this study was to explore whether telephone outreach, delivered by Medicaid managed care organization (MMCO) staff, could increase colorectal cancer (CRC) screening among publicly insured urban women.</p>	<p>RCT The primary outcome was number of women screened for CRC during the 18-month intervention, assessed using Medicaid claims.</p>	<p>N=2,240 MMCO-insured women, aged 50 to 53 years, who received care at a participating practice and were overdue for CRC screening,</p> <p>1,678 were assigned to the usual care arm, and 562 women were assigned to the intervention arm.</p> <p>Eleven federally funded Community Health Centers, 5 municipally funded diagnostic and treatment centers, and 4 private practice in New York City</p>	<p>Screening rates 6% higher in the intervention arm and a significant adjusted overall OR of 1.32 (95% CI, 1.08-1.62)</p> <p>Absolute difference in screening rates between intervention and usual care women ranging from 1.1% at MMC03 (OR= 1.02,95% CI, 0.76-1.38) to 13.7% at MMC02 (OR= 1.98,95% CI, 1.39-2.82)</p> <p>Intervention group screening rates were between 11.7% and 25.6% higher than usual care group with an overall increase of 15.1% {P <.001}</p>

<p>Green et al. (2014). Results of nurse navigator follow-up after positive colorectal cancer screening test: A randomized trial. <i>Journal of American Board of Family Medicine</i>, 4(27), 789-795. doi: 10.3122/jabfm.2014.06.140125</p>	<p>The purpose of the study was to test the hypothesis that nurse navigation would increase the completion of colonoscopy after a positive screening test.</p> <p>This study was follow-up trial within the larger Systems of Support to Increase Colorectal Cancer Screening Study (SOS) conducted from August 2008 through June 2012</p>	<p>RCT</p> <p>Investigators were blinded to outcomes until all data was collected.</p>	<p>N=140 participants 50 to 74 years old with a positive FOBT or sigmoidoscopy</p> <p>21 primary care medical centers in western Washington State</p>	<p>Patients completing follow-up: 56 usual care and 64 had nurse navigation.</p> <p>Percentage of patients completing follow-up : (95% CI) usual care 80.8 (71.7–89.9) and Nurse navigation 91.0 (84.1–97.8) .10</p> <p>Relative risk (95% CI): usual care 1.0 (referent) and nurse navigation 1.13 (0.97–1.28)</p> <p>Risk difference (95% CI): usual care Referent and nurse navigation 10.1 (-1.5 to 21.7)</p>
<p>Menon et al. (2011). A randomized trial comparing the effect of two phone-based interventions on colorectal cancer screening adherence. <i>Annals of Behavior Medicine</i>, 42(3), 294-303. doi:10.1007/s12160-011-9291-z</p>	<p>This study's purpose was to test the hypothesis that participants receiving telephone-based tailored education or motivational interviewing had higher colorectal cancer screening completion rates compared to usual care.</p>	<p>RCT</p> <p>Participants were assigned by block randomization to one of three groups: control, tailored counseling, or motivational interview.</p>	<p>N=515</p> <p>50 years or older; having no personal or family history of colorectal cancer; and being non-adherent with stool blood test, sigmoidoscopy and colonoscopy.</p> <p>Three US sites: two large Midwestern medical centers (a Veteran's Administration Medical Center and an academic health center) and one Southeastern medical center</p>	<p>Participants who completed a colorectal cancer screening test post-intervention was 11.8% (usual care), 23.8% (tailored counseling), and 18.5% (motivational interview; $\chi^2 [df=4] = 7.80, p < .05$).</p> <p>Participants in the tailored counseling group had 2.2 times the odds of completing post-intervention colorectal cancer screening than did the participants in the usual-care group (AOR=2.2, 95% CI 1.2, 4.0)</p> <p>Participants who reported having a physician recommend a screening test had just over two times greater odds of completing post-intervention screening than those who reported no physician recommendation (AOR=2.3, 95% CI 1.3, 3.8).</p>
<p>Greiner et al. (2014). Implementations intentions and colorectal screening. <i>American Journal of Preventive Medicine</i>. 47(6), 703-714. doi:10.1016/j.amepre.2014.08.005.</p>	<p>The purpose of the study was to test a theoretically based "implementation intentions" (I-I) intervention for improving CRC screening among unscreened adults in urban safety-net clinic</p>	<p>RCT</p> <p>Participants were randomized to one of two intervention groups: an implementation intentions condition (Experimental group); or a generic education condition (Comparison group)</p> <p>All clinic staff and healthcare providers were blinded to group assignment and not aware of the content differences between the two groups</p>	<p>N= 468 participants aged ≥ 50 years, due for CRC screening</p> <p>9 safety-net clinics in a Midwestern metropolitan area</p>	<p>Mean age of 57 years, and was 42% non-Hispanic African American, 28% non-Hispanic white, and 27% Hispanic.</p> <p>48% completed a CRC screening test (of those screened, 53% completed a FIT and 47% completed a colonoscopy)</p> <p>Participants who received I-I (Experimental group) were more likely to complete CRC screening than those in the Comparison group (54% to</p>

				42%, AOR=1.91, 95% CI=1.26, 2.89).
Christie et al. (2008). A randomized controlled trial using patient navigation to increase screening among low-income minorities. <i>Journal of the National Medical Association</i> , 100 (3), 278-284. Retrieved from http://eds.a.ebscohost.com.libproxy.eku.edu/	The purpose of the intervention project was to improve bowel preparation for inpatients having a colonoscopy	Intervention project using John Hopkins Nursing Evidence-based Practice Model	N= 38 Inpatients on 4 units at the Virginia Commonwealth University Medical Center.	Electronic order set was used 61.5% (n=24) Patient education was given 66% (n=26) Nurse education in-service attendance was 70% (n=128) 31.5% (n=12) had failed procedures due to poor bowel preparation Length of stay decreased to 3.37 days post intervention compared to 5 days pre-implementation There was a 46.1% decrease in patients with poor bowel preparation post intervention. Decrease in cost of \$2050 per patient day
Kalayjian et al. (2015). Improving adherence to screening colonoscopy preparation and appointments. <i>Gastroenterology Nursing</i> . 38(6), 408-416. doi: 10.1097/SGA000000000000194	The purpose of the quality improvement project was to identify patients with a high risk for non-attendance and subsequent strategies to enhance patient care processes.	Multicomponent Quality Improvement program using Andersen's (2008) Behavioral Model of Health Services Use.	N=130 Multispecialty endoscopy suite at Metro Health Medical Center in Cleveland, Ohio (500 bed facility)	39% improvement in attendance rate post reminder call Maintained nonattendance rates less than 30% Successful colon preparation rates equal to or greater than 95% Reminder phone calls were not a predictor of nonattendance Nursing pre-procedure phone calls did provide an opportunity to review prep instructions and provide patient education on importance of screening colonoscopy
Lane et al. (2013). Delivering colonoscopy screening for low-income populations in Suffolk county. <i>Cancer</i> , 119(15), 2842-2848. doi: 10.1002/cncr.28160	The purpose of the project was to demonstrate a feasible method for an academic medical center to provide high-quality screening colonoscopy for low-income populations.	Project SCOPE (Suffolk County Preventive Endoscopy) Project	N=800 The primary target population were uninsured and underinsured patients of the Suffolk County Department of Health Services 10 community health centers.	Low no-show rate of 3% and >90% adequate bowel preparation
Nuss et al. (2012). Applying the social ecological	The purpose of the project, Louisiana Fit Colon Program (FITCo), was to prove that the combination of patient navigation and providing	The Social Ecological Model (SEM) was used as the framework for the program.	N=975 Participants were at average risk for CRC; age 50–64 years old; under- or uninsured;	88% of the participants were compliant with the FIT testing (N=854)

<p>model to evaluate a demonstration colorectal cancer screening program in Louisiana. <i>Journal of the Health Care for the Poor and Underserved</i>. 23(2012), 1026-1035. Retrieved from http://libproxy.eku.edu</p>	<p>patients with an easy-touse CRC screening option is an effective method that potential colorectal cancer screening programs can deploy in similar populations of un- and under-insured adults.</p> <p>The intervention was introduced in seven federally qualified health centers and three state hospitals.</p>		<p>low-income and non-compliant with any CRC screening recommendations.</p>	
<p>Fiscella et al. (2011). A multimodal intervention to promote mammography and colorectal cancer screening in a safety-net hospital. <i>Journal of the Nation Medical Association</i>. 103(8), 762-768. Retrieved from http://eds.a.ebscohost.com.libproxy.eku.edu/</p>	<p>The purpose of the intervention was to examine the impact of a multimodal intervention on mammography and colorectal cancer (CRC) screening rates in a safety-net practice caring for underserved patients.</p>	<p>A clinical effectiveness trial of an evidence- based intervention was used for this process improvement project.</p>	<p>N=469 Participants were 40 to 74 years old without any form of insurance in a large family medicine safety-net practice in upstate New York which were past due for receipt of either mammography or CRC screening (n=323).</p>	<p>The screening rates increased for colorectal cancer screening which was 28% in the group receiving the intervention versus 10% for patients not receiving the intervention initially.</p>

Appendix B



Eastern Kentucky University
Department of Baccalaureate and Graduate Nursing
Doctor of Nursing Practice Program

Statement of Mutual Agreement for Capstone Project

The purpose of a Statement of Mutual Agreement is to describe the agreement between a designated clinical agency and the DNP student regarding the student's Capstone Project.

I. General Information

Student Name: Judith L. Poe
Project Title: Across the Care Continuum: Endoscopy Nurse Navigator
Agency: University of Kentucky Healthcare
Agency Contact: Kathy Isaacs, PhD

II. Brief description of the project

- Evidence-based intervention
- Expected project outcomes (products, documents, etc.)
- On-site Activities (DNP student role, required meetings, access to agency records, non-disclosure expectations)
- Products resulting from DNP Capstone Project with potential market value.
Any products produced from collaboration with the agency must be discussed with the student, Capstone Advisor, and appropriate agency representative. The ownership of intellectual property rights must be determined prior to the implementation of the project.

The purpose of the project is to develop a patient navigator program for the endoscopy departments at University of Kentucky (UK) Healthcare using research, literature and data. The expected outcome is a program proposal for a nurse led patient navigator program to present to the target population i.e. UK Healthcare administration.

On-site activities will include meetings with perioperative leadership to develop of nurse navigator job description, program structure and business plan. Data will be obtained from financial system and perioperative/endoscopy scheduling system. The financial data will include program development costs i.e. office space, staff. Data from the



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perioperative/endoscopy scheduling system will include patient demographics such as age, address, sex and case cancellations and same day no shows.

There will be no products developed with a market value.

Student Name: Judith L. Poe

Project Title: Across the Care Continuum: Endoscopy Nurse Navigator

III. Agreement of written and oral communication

- Reference to clinical agency in student's academic work, publications, and presentations
- Restrictions on discussion of any project or agency details
- Formal agency approval needed for any publicly shared findings

IV. Required Signatures:

Judith L. Poe
Student

5-24-2017
Date

[Signature]
Capstone Advisor
[Signature]
Agency Representative

5-24-2017
Date

Appendix C



Office of Research Integrity
IRB, RDRC

Initial Review

Approval Ends

January 7, 2019

IRB Number

17-0760-P1G

TO: Judith L Poe, RN

Eastern KY University Department of Baccalaureate and
Graduate Nursing 7 Redwing Dr. Winchester, KY 40391

FROM: Medical Institutional Review

Board (IRB) SUBJECT: Approval of

Protocol Number 17-0760-P1G DATE:

January 9, 2018

On January 8, 2018, the Medical Institutional Review Board approved your protocol entitled:

Care Coordination using a Nurse Navigator in an Endoscopy Unit

Approval is effective from January 8, 2018 until January 7, 2019 and extends to any consent/assent form, cover letter, and/or phone script. If applicable, attached is the IRB approved consent/assent document(s) to be used when enrolling subjects. **[Note, subjects can only be enrolled using consent/assent forms which have a valid "IRB Approval" stamp unless special waiver has been obtained from the IRB.]** Prior to the end of this period, you will be sent a Continuation Review Report Form which must be completed and returned to the Office of Research Integrity so that the protocol can be reviewed and approved for the next period.

In implementing the research activities, you are responsible for complying with IRB decisions, conditions and requirements. The research procedures should be implemented as approved in the IRB protocol. It is the principal investigators responsibility to ensure any changes planned for the research are submitted for review and approval by the IRB prior to implementation. Protocol changes made without prior IRB approval to eliminate apparent hazards to the subject(s) should be reported in writing immediately to the IRB.

Furthermore, discontinuing a study or completion of a study is considered a change in the protocol's status and therefore the IRB should be promptly notified in writing.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" from the Office of Research Integrity's IRB Survival Handbook web page [<http://www.research.uky.edu/ori/IRB-Survival-Handbook.html#PIresponsibilities>]. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site [<http://www.research.uky.edu/ori>]. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at (859) 257-9428.

see blue.

315 Kinkead Hall | Lexington, KY 40506-0057 | P: 859-257-9428 | F: 859-257-8995 |
www.research.uky.edu/ori/



WAIVER OF AUTHORIZATION APPROVAL LETTER

In Compliance, with section 164.512(i)(2)(iv)(C) of the HIPAA privacy rules, a representative from Medical IRB # 1 has reviewed the use of Protected Health Information (PHI) by expedited review.

The IRB protocol# **17-0760** meets the criteria for the waiver of authorization according to 164.512(i)(2)(ii), which are as follows:

The use or disclosure of protected health information involves no more than a minimal risk to the privacy of the individual based on:

-An adequate plan to protect the identifiers from improper use/disclosure

-An adequate plan to destroy the identifiers (if feasible) at the earliest opportunity consistent with the research justification unless health, research or legal justifications to retain the identifiers.

-An adequate written assurance that the PHI will not be reused or disclosed to any other person unless required by law, authorized oversight or as permitted by the following subpart :

-the research could not practicably be conducted without the waiver or alteration;

and

-the research could not practicably be conducted without access to and use of the PHI.

Douglas Oylar

Digitally signed by Douglas Oylar
DN: cn=Douglas Oylar, c=UK, Health/Care,
ou=Pharmacy, email=doug.oylar@uky.edu, c=US
Date: 2018.01.03 12:06:53 -0500

IRB Chairman or Designee signature

Date

seeblue.

170760P1G
Care Coordination using a Nurse Navigator in an Endoscopy Unit

Verified "Consent Authorized" N			Trained: Date:		DunnChad:	Citi :	Other Test	Authorized
PI	Poe	Judith	Y	01/23/16	N	N	N	
						Unassigned		
		EKU 1410				RN		
KP	Clements	Mary	Y	05/06/16	N	N	N	N
		mary.clements@eku.edu ECU				Faculty advisor		
		CITI; aka Mary Whitaker				Ed.D., MSN		
KP	Isaacs	Kathy	Y	09/26/17	N	Y	Y	N
		kbisaa2@uky.edu				Preceptor		
		HIPAA 11/16/08; E-ROC 7/8/16				RN, PhDc		

Appendix D



February 20, 2017

Dear Ms. Poe,

Your proposal entitled, "Care Coordination using a Nurse Navigator in an Endoscopy Unit" was reviewed during our February 14th meeting of the Nursing Research Council at the University of Kentucky Medical Center, and we are happy to report that your proposal has been approved. If you have not yet obtained approval for your research through the University of Kentucky Institutional Review Board (IRB), you must complete this process as well.

The Nursing Research Council reviews all proposals to conduct scientific inquiry that involve UK nursing staff in an effort to assess for a number of indicators: to determine the feasibility of conducting the proposed research, to establish the level of support from nursing management or administration to conduct the research, to determine the applicability to nursing, to evaluate protection of human subjects, and to assess the completeness of the proposal. If your proposal is amended in any way such that the methods or procedures are modified significantly, your proposal must be re-submitted for review by this Council.

Please contact me if you need further assistance, have questions, or wish to discuss anything.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Holden".

Dan Holden, RN, BSN, OCN Chair, Nursing Research Council

Office of the Executive Vice President for Health Affairs

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Appendix E



Office of Research Integrity
IRB, RDRC

Revised Research Description

Modification Review	Approval Ends	IRB Number
	January 7, 2019	17-0760-P1G

TO: Judith Poe, RN
Eastern KY University Department of Baccalaureate and
Graduate Nursing 7 Redwing Dr. Winchester, KY 40391

FROM: Institutional Review Board (IRB)

SUBJECT: Approval of Modification Request for Protocol

17-0760-P1G DATE: February 23, 2018

On February 23, 2018, the Institutional Review Board approved your request for modifications in your protocol entitled:

Care Coordination using a Nurse Navigator in an Endoscopy Unit

If your modification request necessitated a change in your approved informed consent/assent form(s), attached is the new IRB approved consent/assent form(s) to be used when enrolling subjects. [Note, subjects can only be enrolled using informed consent/assent forms which have a valid "IRB Approval" stamp, unless waiver from this requirement was granted by the IRB.

Note that at Continuation Review, you will be asked to submit a brief summary of any modifications approved by the IRB since initial review or the last continuation review, which may impact subject safety or welfare. Please take this approved modification into consideration when preparing your summary.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" from the Office of Research Integrity's Guidance and Policy Documents web page [<http://www.research.uky.edu/ori/human/guidance.htm#PIresp>]. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site [<http://www.research.uky.edu/ori>]. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at (859) 257- 9428.

see blue.

315 Kinkead Hall | Lexington, KY 40506-0057 | P: 859-257-9428 | F: 859-257-8995 |
www.research.uky.edu/ori/

An Equal Opportunity University

Appendix F

Business Plan: Endoscopy Nurse Navigator

Judith L. Poe

Eastern Kentucky University

04-11-2018

Executive Summary

Patient centered care is the overarching umbrella of the University of Kentucky (UK) Healthcare's strategic plan, *Rationalizing Healthcare in Kentucky* (UK HealthCare 2015-2020 Strategic Plan, 2015). The process for scheduling patients for their screening colonoscopy is conducted through a call center, instructions are sent via e-mail and reminder robocall is sent a few days prior to the procedure. The current process has resulted in numerous cancellation, no shows or poor-quality bowel prep.

Patient navigators have proven to increase patient compliance and satisfaction (DeGroff et al., 2014). The current opportunity is to create an endoscopy nurse navigator who would reach out to each patient scheduled for a screening colonoscopy to develop a therapeutic relationship. The nurse would reinforce the importance of the procedure, review health history and bowel preparation instructions. The nurse-patient relationship will decrease procedural cancellations, no-shows or poor-quality bowel prep.

The outcome of the nurse navigator role will improve the process so patients will achieve a successful completion of their colonoscopy. The outcome measures for the nurse navigator role and process include a 10% decrease in cancellations and no shows and 10% decrease in patients seen with poor bowel prep quality.

Business Plan: Endoscopy Nurse Navigator

Business Description

Colorectal cancer (CRC) is the third most common cancer diagnosed and second leading cause of cancer related deaths in the United States for men and women combined (American Cancer Society, 2015). Compliance with CRC screening in Kentucky is low. This is substantiated by Kentucky having the highest rate of new CRC cases in the nation and being the fourth highest in CRC-related mortality (The Kentucky Colon Cancer Screening Advisory Committee, 2013). Kentucky's colorectal screening rate in 2016 was 70.1% (The Kentucky Cancer Consortium, 2018). The incidence rate for colorectal cancer in Kentucky is 49.2 per 100,000, which is the highest rate within the United States (CDC, 2014).

The United States Preventive Services Taskforce (USPSTF) recommends screening for colorectal cancer beginning at age 50 and continuing until age 75 using one of the following diagnostic tests; fecal occult blood testing (FOBT), flexible sigmoidoscopy, or colonoscopy. However, the 2012 Behavioral Risk Factor Surveillance System (BRFSS) survey revealed that 65.1% of the U.S. population had completed their recommended screening for colorectal cancer; which is a slight increase from 65% in 2010 (CDC, 2014). Barriers to colorectal cancer screening are complex such as, cost of care, low health literacy, fear of cancer diagnosis and primary care physician not recommending screening (DeGroff, et al, 2014; Dietrich et al, 2013; Christie, et al, 2008).

In 2012, the financial impact in Kentucky for hospitalized patients with the primary diagnosis of colorectal cancer was \$110.6 million dollars (The Kentucky Colon Cancer Screening Committee, 2013). According to the Agency for Healthcare research and Quality

(AHRQ) in 2015 the estimated direct medical costs for colorectal cancer in the United States was \$80.2 billion dollars.

University of Kentucky (UK) Healthcare is a multi-facility healthcare provider for the Commonwealth of Kentucky. It is a tertiary healthcare center serving greater than 600,000 people annually in both the inpatient and outpatient hospital settings (UK Healthcare Annual Report, 2015). UK Healthcare impacts the promotion of wellness for eastern Kentucky and beyond.

There are two endoscopy units at UK Healthcare which provide colorectal cancer screening. The Good Samaritan Hospital endoscopy unit is primarily an outpatient setting in which 90% of the colorectal cancer screening colonoscopies are performed. UK Chandler Medical Center is more inpatient focused therefore the proposed intervention will primarily focus on Good Samaritan Hospital with the opportunity to expand to the other facility. Patient navigation shows potential in increasing adherence to colorectal cancer screening and reducing health disparities; however, it is a complex intervention to operationalize in healthcare (DeGoff, et al., 2014; Koh, Nelson & Cook 2010; Chambers, et al., 2016; Kalayjian, et al., 2015). DeGoff et al, (2014) identified as essential when developing a patient navigation program.

Patients seeking colorectal cancer screening at UK Healthcare are scheduled through a call center. The patient's primary care physician faxes a request for their patient to receive a screening colonoscopy to the call center. One of three schedulers will contact the patient using the information provided by the referring physician via the faxed form. Once the patient has agreed to a specific date, the scheduler will mail the patient written prep instructions for their colonoscopy. UK Healthcare started robocalls in August 2016 to decrease the number of "no

shows" or cancelled procedures. The patient receives a reminder robocall three days prior to their scheduled appointment date.

The issues with the current process are patients do not always receive their written instructions, do not open them when they do receive them or the patient has questions regarding their instructions. There is no one for the patient to ask questions because they do not always have a relationship with the UK Healthcare gastroenterologist. This results in patients not completing their colon prep correctly, cancelling their screening colonoscopy and potential decrease in patient satisfaction.

The proposed intervention is to design a patient navigation model in an endoscopy unit. The expected outcomes are patient education, decreased procedural cancellations and "no shows", improved colon prep quality, and increased patient, staff and physician satisfaction. The introduction of a nurse navigator to aid the patient through our complex healthcare system could decrease the barriers to colorectal cancer screening.

Patient navigation has demonstrated evidence to support increasing compliance with CRC screening and reducing health disparities (DeGroff et al., 2014). The adoption of a patient navigation model in an endoscopy unit can increase efficiency, reduce patient cancellations and same day no show rates, provide patient education, improve bowel prep quality (Table 2, Appendix A) and increase patient, physician and staff satisfaction.

A nurse navigator model supports the UK Healthcare's mission statement which expresses dedication to the health of the people of Kentucky.

"University of Kentucky (UK) Healthcare is committed to the pillars of academic healthcare-research, education and clinical care. Dedicated to the health of the people of Kentucky, we will provide the delivery system by partnering with community hospitals and physicians. We will support the organization's education and research needs by offering cutting edge services on par with the nation's best providers."

UK Healthcare's 2016 annual report emphasizes the patient-centered medical home which is focused on comprehensive, coordinated preventive care which keeps patients healthier. Patient-centered care is enveloped in the key considerations (Table 1) for developing a navigation program.

Table 1

Key Considerations when developing a patient navigation program

Consideration	UK Healthcare
Theoretical framework	Swanson's Care Theory
Organizational characteristics	Tertiary Center
Point of Intervention for patient navigator	Primary appointment for colorectal cancer screening
Setting where navigation services are provided	Good Samaritan Hospital
Range of services offered and patient navigator responsibility	Patient education Directions/wayfinding to UK Healthcare and endoscopy department
Background and qualifications of patient navigator	RN, BSN 3 to 5 years' experience in endoscopy
Method of communication between patient and navigator	Mailings Phone call
Navigator training	Same as nurses in current Pre-op centers
Oversight and supervision	Manager of Pre-op center
Metrics to evaluate navigator program	"No-shows" and cancellations Bowel prep quality Patient experience scores

The key goals of the endoscopy nurse navigator program are: eliminate barriers to care, improve patients' knowledge of the importance of screening colonoscopy, reduce "no-show" rates, improvement of bowel preparation, completion of screening colonoscopy and improve colorectal cancer screening rates. The proposed project supports patient-centered care as outlined in the organization's strategic plan by providing a connection with the patients. The nurse navigator role would provide a personalized experience at key moments during the patient journey. The project will improve access to UK Healthcare specialists i.e. gastroenterologists,

ensure a seamless experience across the care continuum, adopt evidence-based practices which will improve the predictability in patient outcomes and optimize the efficient delivery of advanced subspecialty care leading to the achievement of this goal in the strategic plan (UK HealthCare 2015-2020 Strategic Plan, 2015).

The key stakeholders in the proposed intervention include but are not limited to: Chief Operating Officer, Chief Medical Officer, Chief Nursing Officer, Peri-operative Services Administrator, medical directors of the endoscopy units, nurse leaders of the endoscopy units, Access Center (schedulers) leadership, and direct patient care staff. Some of these stakeholders are distanced from the daily operations of the endoscopy units but they each play a crucial role in the success of the proposed change.

Market Analysis

The internal market includes various departments within UK Healthcare and Kentucky Clinic. Employees of UK Healthcare using the UK Healthcare HMO are required to utilize UK Endoscopy and Digestive Health Services to remain in network. Growth of high-deductible insurance plans also influence where patients choose to receive care.

There are three hospitals and one ambulatory clinic in Lexington, Kentucky, in addition to UK Healthcare, which perform diagnostic/screening colonoscopies. These are the major competitors to UK Healthcare endoscopy. There are also several community and critical access hospitals within a 50-mile radius of Lexington.

UK Healthcare has created new marketing strategy using the key words: "*The Power of...*". Key words used in the strategic plan for Digestive Health Services include: *forefront, collaborative, patient-centered, research-driven, comprehensive and advanced* in their departmental vision statement (UK HealthCare 2015-2020 Strategic Plan, 2015). A nurse

navigator model supports the strategic aspiration of UK Healthcare and Markey Cancer Center to decrease cancer mortality among Kentuckians through prevention and education of patients and families (UK HealthCare 2015-2020 Strategic Plan, 2015).

Federal and state governments are stretched financially and adding the burden of subsidizing insurance for the under or non-insured will only increase the budgetary deficit. The Affordable Care Act (ACA) impacted Kentucky legislation related to colorectal cancer screening. The ACA left a loop hole for many insurers which were in place prior to the final approval of this act allowing the payers to deny payment for colorectal cancer screening, especially colonoscopies which change from diagnostic to therapeutic (American Cancer Society, 2015). Kentucky (2015) legislative bills; Senate Bill (SB) 61 and House Bill (HB) addressed the barriers to colorectal cancer screening requiring insurers to pay for colorectal cancer screening regardless of the billing code or other procedures performed in the same clinical encounter and as part of ongoing colorectal cancer prevention (LegiScan, 2015).

Potential Risks and Problems

Table 2 provides the strengths, weaknesses, opportunities and threats to support the nurse navigator model.

Table 2

SWOT Analysis

Strengths:	Weaknesses:
<ul style="list-style-type: none"> • Care coordination • Improved access to care • Patient education • Unit and staff efficiency • Increased provider satisfaction • Decreased no-show and cancellations • Alignment with strategic plan of patient-centered care. 	<ul style="list-style-type: none"> • Inability to reach all scheduled patients • Limited to three procedure rooms • Delay in next available appointment • Communication with patients scheduled for endoscopy procedures • Medical history not reviewed until day of procedure increasing risk of cancellation

	<ul style="list-style-type: none"> • Poor colon prep • Lack of electronic medical record for endoscopy • Poor patient experience
Opportunities: <ul style="list-style-type: none"> • Increased procedural volume • Increased referral base • Improved communication between referring clinics and endoscopy unit • Improved access • Improved transitions in care 	Threats: <ul style="list-style-type: none"> • Decreased reimbursement related to; <ul style="list-style-type: none"> - No shows - Cancelled cases - Decreased patient satisfaction • Referral loss related to decreased access • Local clinics and hospitals with gastroenterologists

Financial/Operational Plan

Staffing will begin with one FTE inserted into the Pre-operative clinic in Kentucky Clinic setting. This position would require a nurse with 3-5years experience in endoscopy procedures. The hourly rate at UK Healthcare for a nurse with 3-5years experience in \$26.00 to \$28.11 or \$54,080 to \$58,468.80/annually. According to a report released by the Bureau of Labor Statistics (2016) employee benefits add another 36.7% for state and government employees. The benefits cost for this employee would be \$19, 847.36 to \$21,458.05. Total labor costs are estimated at \$73,927.36 to \$79,926.85/annually. The average net profit per screening colonoscopy procedure performed at Good Samaritan Hospital is \$246.56 which when multiplied by the 387 "no show" or cancelled colonoscopy procedures from April 1 to October 1, 2017 equals \$95,418.72 in lost profit. Other costs include office space, desk, computer and telephone which are estimated at \$2500.00. There are no capital expenditures associated with this plan. Table 3 summarizes the financial impact of an endoscopy nurse navigator.

Table 3

Financial Impact of Endoscopy Nurse Navigator

Item	Financial Impact
Hourly wage for nurse with 3-5 years' experience @ UK Health Care	\$26.00 - \$28.11
Annual salary for a nurse navigator without benefits	\$54,080 – \$58,468.80
Fulltime benefits @ 36.7% for state/government employees	\$19,847.36 - \$21,458.05
Total labor costs	\$73,927.36 - \$79,926.85
Office equipment	\$2500
Average net profit of screening colonoscopy at UK Health Care	\$246.56
Number of cancelled colonoscopy or flexible sigmoidoscopy procedures or “no-shows” between Apr 1 – Oct 1, 2017 at Good Samaritan Hospital	387
Estimated lost revenue associated with cancelled colonoscopy procedures or “no-shows”	\$95,418.72
Capital expenditures	\$0

Evaluation Plan

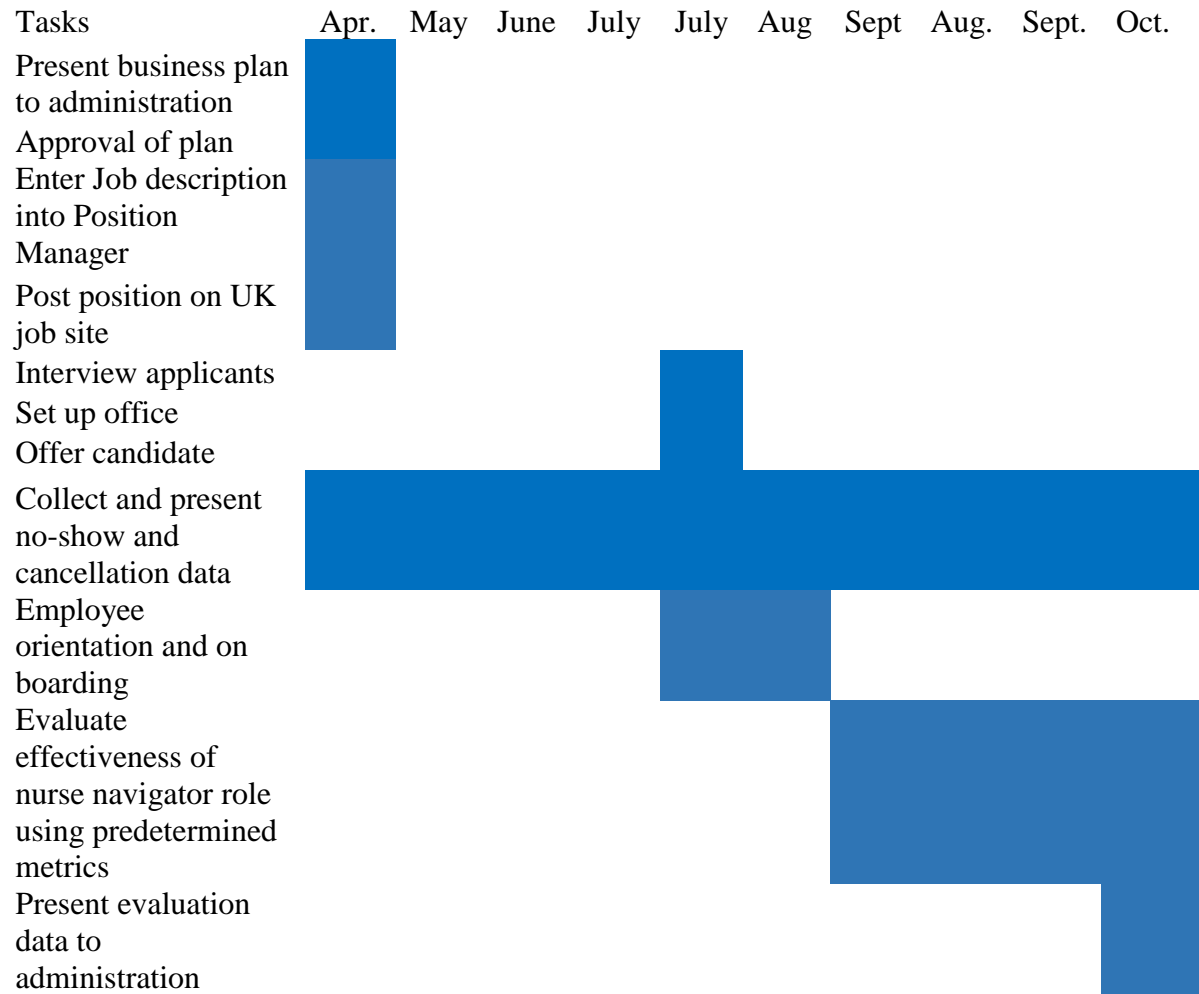
Evaluation of the effectiveness of the nurse navigator model would be demonstrated by the following measures of success; decrease procedural cancellations and "no shows" by 10%, improved colon prep quality by 10% and increase patient satisfaction evidenced by increasing outpatient survey "personal issues" score to 90.7. Measurement of the outcomes will be accomplished through chart reviews, data extracted from the procedural scheduling system related to cancellations and no shows, financial department, patient satisfactions surveys (Press Ganey) and focused surveys of staff and physician satisfaction related to the nurse navigator program. Chart reviews will provide colon preparation quality and education method. Data extracted from

the procedural scheduling system will reveal the number and reasons for cancellations, no shows, and percentage of schedule utilization. Financial statements will provide net profit for a procedure, hourly wage for nurses, and lost reimbursement related to the cancellations or no shows.

UK Healthcare uses Press Ganey to measure patients' perceptions of their hospital experience. The patient survey is divided into domains of questions to evaluate the patient's perception of their environment, interactions with nurses, physicians and treatment. The domain questions important for evaluating the patient navigation program success is interactions with nurses and physicians. Data results will be presented to the Endoscopy Executive Committee at monthly meeting.

Appendix A

GANTT Chart

Proposed Timeline for Endoscopy Nurse Navigator

Appendix B

Table 4

Bowel prep quality

Documented results	Frequency	Percent
NA	15	10
Excellent	76	5.3
Good/adequate	881	61.2
Fair/inadequate	286	19.9
Poor/40% obscured or greater/unsatisfactory	127	8.8
Adequate to identify polyps 6mm	52	3.6
Missing	2	.1
Total	1439	100.0

Table 5

Cancellation Reasons

Reason	Frequency	Percent
Patient no show – day of	154	39.8
Cancelled by patient day of	31	8.0
Cancelled by patient 12-72 hrs	85	22.0
Cancelled by patient >72hrs	117	30.2
Total	387	100.0

Table 6

Age of patients not completing screening colonoscopy

Age (years) Range	Frequency	Percent
50 - 55	147	38.1
56 - 60	122	31.6
61 - 65	71	18.4
66 - 70	33	8.5
71 - 75	14	3.6
Total	387	100.0

Table 7

Gender of patients not completing screening colonoscopy

Gender	Frequency	Percent
Female	218	56.3
Male	169	43.7
Total	387	100.0

Table 8

Race of patients not completing screening colonoscopy

Race	Frequency	Percent
African American	93	24.0
Asian	4	1.0
Caucasian	288	74.4
Native American	2	.5
Total	387	100.0

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Appendix G

ENDOSCOPY NURSE NAVIGATOR

Coordination across the care continuum

EXECUTIVE SUMMARY

- One in twenty-four people will be diagnosed with colorectal cancer in their lifetime
- Kentucky has the highest rate of new Colorectal Cancer (CRC) cases in the nation and is the fourth highest in CRC-related mortality
- The incidence rate for colorectal cancer in Kentucky is 49.2 per 100,000, which is the highest rate within the United States

(Cancer.org, 2017)

EXECUTIVE SUMMARY

- In 2014, Kentucky was rated 24th among states in which adults age 50 years old or older have completed a colorectal cancer screening
- Siegel et al. (2016) estimated that approximately 2,200 Kentuckians would be diagnosed with CRC and the mortality rate of 830 in 2016
- Patient centered care is the foundation of the UK Healthcare's strategic plan

EXECUTIVE SUMMARY

- A nurse navigator would improve access to University of Kentucky (UK) Healthcare specialists i.e. gastroenterologists, ensure a seamless experience across the care continuum, adopt evidence-based practices which will improve the predictability in patient outcomes and optimize the efficient delivery of advanced subspecialty care which are objectives in the strategic plan

(UK HealthCare 2015-2020 Strategic Plan, 2015).

PROBLEM

- Colorectal cancer is the 2nd most commonly diagnosed invasive cancer in Kentucky after lung cancer
- Kentucky continues to make progress with increasing colorectal cancer screening rates through sigmoidoscopy and colonoscopy

(Kentucky Cancer Consortium, 2016)

SWOT ANALYSIS

Strengths:

- Care coordination
- Improved access to care
- Patient education
- Unit and staff efficiency
- Increased provider satisfaction
- Decreased no-show and cancellations
- Alignment with strategic plan of patient-centered care.

Weaknesses:

- Inability to reach all scheduled patients
- Limited to three procedure rooms
- Delay in next available appointment
- Medical history not reviewed until day of procedure increasing risk of cancellation
- Poor colon prep
- Lack of electronic medical record for endoscopy
- Poor patient experience

SWOT ANALYSIS

Opportunities:

- Increased procedural volume
- Increased referral base
- Improved communication between referring clinics and endoscopy unit
- Improved access
- Improved transitions in care

Threats:

- Decreased reimbursement related to:
 - No shows
 - Cancelled cases
 - Decreased patient satisfaction
- Referral loss related to decreased access
- Local clinics and hospitals with gastroenterologists

CANCELLATION DATA

APRIL 1 – OCTOBER 1, 2017

<u>REASON</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
NO SHOW	154	39.8	41.7
CANCELLED BY PATIENT - DAY OF	31	8.0	48.5
CANCELLED BY PATIENT – 72-12 HOURS	85	22.0	73.3
CANCELLED BY PATIENT - > 72 HOURS	117	30.2	100.0
TOTAL	387	100.0	100.0

BOWEL PREP QUALITY

APRIL 1 – OCTOBER 1, 2017

<u>DOCUMENTED RESULTS</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Percent</u>
FAIR/INADEQUATE	286	19.2	19.2
POOR/40% OBSCURED OR GREATER/UNSATISFACTORY	127	8.8	8.8
TOTAL	413	28.0	28.0

INTERVENTION

Design a business plan to support a nurse navigation model for an endoscopy unit.

PLAN COMPONENTS

Consideration	UK Healthcare
Theoretical framework	Swanson's Care Theory
Organizational characteristics	Tertiary Center
Point of Intervention for patient navigator	Primary appointment for colorectal screening
Setting where navigation services are provided	Good Samaritan Hospital
Range of services offered and patient navigator responsibility	Patient education Directions/wayfinding to UK Healthcare and endoscopy department
Background and qualifications of patient navigator	RN, BSN 3 to 5 years experience in endoscopy

PLAN COMPONENTS

Consideration	UK Healthcare
Method of communication between patient and navigator	Mailing Phone call
Navigator training	Same as nurses in UK Healthcare pre-op centers
Oversight and supervision	Manager of Pre-op center
Metrics to evaluate navigator program	"No-shows" and cancellations Bowel prep quality Patient experience scores

NURSE NAVIGATOR

- Staffing will begin with one FTE inserted into the Pre-operative clinic in the Kentucky Clinic setting with the opportunity to cross-train current staff or increase staffing as supported by measures of success.
- This position would require a nurse with 3-5 years' experience in endoscopy procedures.
- Patient navigation shows potential in increasing adherence to colorectal cancer screening and reducing health disparities; however, it is a complex intervention to operationalize in healthcare.

FINANCIAL IMPACT OF ENDOSCOPY NURSE NAVIGATOR

ITEM	FINANCIAL IMPACT
Hourly wage for nurse with 3-5 years experience @ UK Health Care	\$26.00 - \$28.11
Annual salary for nurse navigator without benefits	\$54,080 – \$58,468.80
Fulltime benefits @ 36.7% for state/government employees	\$19,847.36 - \$21,458.05
Total labor costs	\$73,927.36 - \$79,926.85
Office equipment	\$2500
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Number of cancelled colonoscopy or flexible sigmoidoscopy procedures or “no-shows” between Apr 1 – Oct 1, 2017 at Good Samaritan Hospital	387
Estimated lost revenue associated with cancelled colonoscopy procedures or “no-shows”	\$95,418.72
Capital expenditures	\$0

MEASURES OF SUCCESS

- Decrease procedural cancellations and “no shows” by 10%
- Improve colon prep quality by 10%
- Increase patient satisfaction evidenced by increasing outpatient survey “personal issues” score to 90.7

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