Effects of Tailored Colorectal Cancer Patient Education on Colorectal Cancer Screening Rates in an Urban Kentucky Clinic

Brittany Pittman Hardcorn
bppitt01@gmail.com

Recommended Citation
Pittman Hardcorn, Brittany, "Effects of Tailored Colorectal Cancer Patient Education on Colorectal Cancer Screening Rates in an Urban Kentucky Clinic" (2022). DNP Projects. 373.
https://uknowledge.uky.edu/dnp_etds/373

This Practice Inquiry Project is brought to you for free and open access by the College of Nursing at UKnowledge. It has been accepted for inclusion in DNP Projects by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.
Effects of Tailored Colorectal Cancer Patient Education on Colorectal Cancer Screening Rates in an Urban Kentucky Clinic

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing Practice at the University of Kentucky

By

Brittany Pittman Hardcorn DNP, BSN, RN

Somerset, KY

2022
Abstract

**Background:** Colorectal cancer (CRC) is one of the leading causes of death among Americans and Kentuckians. Most colorectal cancers are slow growing, making regular colorectal cancer screening increasingly important to decrease morbidity and mortality. Although of this importance, there is low screening rates. Thus, the need to explore all colorectal screening options.

**Purpose:** The purpose of this project was to increase the number of patients screened for colorectal cancer by providing education on colorectal cancer and screening options in a primary care setting.

**Methods:** The design of the study was a 2 group quasi-experimental practice improvement project using a post-test educational survey and chart review. The intervention was a tailored educational pamphlet developed by the Kentucky Cancer Program with information regarding CRC and types of CRC screening. The intervention was given to patients 50 to 75 years old who were being seen at the clinic that day and due for CRC screening. The control group (n=15) consisted of patients who were due for CRC screening and received usual care at the clinic. A three-question post-test was used to assess patient knowledge changes and likelihood of screening post intervention. Chart reviews assessed completion status of CRC screening within four months following implementation of education.

**Results:** The project had 17 participants. There was a 100% success rate in participants being able to review the pamphlet and 88.2% (n=15) of participants reported that they learned something new about CRC or screening options. Participants ranked their likelihood of completing CRC screening as a 5.59 out of 10, with 10 being very likely. Overall, There was no significant difference in CRC screening rates between the control and intervention groups.
Conclusions: The findings of this QI project show that tailored patient education pamphlets did not have a significant impact on the rates of CRC screening at this clinic although CRC knowledge did increase among those in the intervention group.

Keywords: Colorectal cancer, tailored patient education, colorectal cancer screening
Acknowledgements

There is no way to fully express my appreciation for the help of my advisor, Dr. Julie Ossege. Dr. Ossege has been there for me since day one of this program. She has spent countless hours assisting in the completion of my DNP project as well as the DNP program. Dr. Ossege has helped me push myself to stay on track in the program, even when I didn’t think it was possible. I am very grateful for your guidance and encouragement to achieve my dream of becoming a doctorally-prepared Nurse Practitioner.

Thank you to my committee members, Dr. Angie Grubbs, Dr. Elizabeth Tovar, and Dr. Ossege, who have extended their expertise to me and given guidance in completion of my project. Thank you to my clinical mentor, Jessica Sass, who was kind enough to allow me to take part in Turfland Family and Community Medical Center’s Quality Improvement Program and for extending her expertise and resources to aid in the completion of my DNP project. Thank you to Dr. Amanda Wiggins who helped me with the statistical analysis aspects of this project. Thank you to my cohort of classmates, specifically Christina Rademaker, for helping me stay strong and on track during the past three years.
Dedication

I would like to dedicate this project to my parents, Godmother, my husband, and grandparents here with us and those in heaven. First, to my parents and Godmother, I would have never made it to this point without you. You have always been there to support me and carry me through all the hard times I have faced while gaining my BSN and now my DNP. You continued to support me and give me encouragement even when I felt I couldn’t make it. I know that it was your prayers and support that have gotten me to this point. To my husband, Alec, I am so grateful to have been blessed with a man like you in my life and know I would not have made it through this program without your continuous love and support. You were always there for me to support me during the good times and bad, helping push me to the finish line. Lastly, to my grandparents, although you are in heaven now, I know how proud each of you would be. You were each so excited for me to be a first-generation college graduate and for me to one day gain my doctorate. To my Mamaw, I cannot express how thankful I am for you and for your daily encouraging text messages. There is no doubt that your encouragement and continuous prayers have gotten me to this point, thank you.
Table of Contents

Abstract .................................................................2
Acknowledgements .........................................................4
Dedication ..................................................................5
List of Tables ................................................................8
List of Appendices ........................................................8
Background and Significance ..........................................9
  Introduction ................................................................9
  Colorectal Cancer Screening Options.........................10
  Context, Scope, and Consequences of the Problem .........14
  Current Evidence-Based Intervention..........................15
Purpose and Objectives ..................................................16
  Specific Aims ...........................................................16
Theoretical Framework ..................................................16
Review of Literature .....................................................17
  Summary and Strength of the Evidence ......................18
  Current State and Gaps ..............................................20
Methods ..................................................................21
  Design ..................................................................21
  Setting ..................................................................21
  Sample ..................................................................23
Procedure .................................................................23
  IRB Approval .........................................................23
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of Intervention</td>
<td>23</td>
</tr>
<tr>
<td>Measures and Instruments</td>
<td>24</td>
</tr>
<tr>
<td>Data Collection</td>
<td>24</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>26</td>
</tr>
<tr>
<td>Results</td>
<td>26</td>
</tr>
<tr>
<td>Population Demographics</td>
<td>26</td>
</tr>
<tr>
<td>Post-Test Results</td>
<td>27</td>
</tr>
<tr>
<td>Completion Rates</td>
<td>27</td>
</tr>
<tr>
<td>Discussion</td>
<td>27</td>
</tr>
<tr>
<td>Strengths of the Study</td>
<td>29</td>
</tr>
<tr>
<td>Limitations</td>
<td>29</td>
</tr>
<tr>
<td>Recommendations for Practice</td>
<td>30</td>
</tr>
<tr>
<td>Conclusion</td>
<td>31</td>
</tr>
<tr>
<td>Reference</td>
<td>34</td>
</tr>
</tbody>
</table>
List of Tables

Table 1. *Demographic characteristics among intervention and control participants*………….41
Table 2. *Intervention Post-test Results* ….............................................................42
Table 3. *Comparison of screening rates among intervention and control participants*………43

List of Appendices

Appendix A. *CRC Educational Pamphlet (English)*……………………………………44
Appendix B. *CRC Educational Pamphlet (Spanish)*……………………………………46
Appendix C. *Posttest of Knowledge (English)*…………………………………………48
Appendix D. *Posttest of Knowledge (Spanish)*…………………………………………49
Effects of Tailored Colorectal Cancer Patient Education on Colorectal Cancer Screening Rates in an Urban Kentucky Clinic

**Background and Significance**

**Introduction**

In the state of Kentucky, colorectal cancer (CRC) is the fourth leading cause of cancer and the fourth leading cause of death due to cancer, yet only 68 percent of people aged 50-75 received CRC screening in 2018 (CDC, 2017; American Cancer Society, 2020). Colorectal cancer is also the third leading cause of cancer-related deaths in the United States, with an increased risk in men, African Americans, the Appalachian population, and rural areas (American Cancer Society, 2014). Therefore, a very prevalent issue in today’s healthcare that needs to be addressed is the prevalence of colorectal cancer related death in Kentucky.

Screening can decrease incidence and increase survival by detecting and removing precancerous growths and detecting early stages of the disease when treatment options are more successful (American Cancer Society, 2020). Consequently, the main consequence of this issue is possible death due to lack of screening. Failure to screen or screening at inappropriate intervals accounts for 67.8% of patients who died from CRC (Doubeni, et al., 2019). According to the American Cancer Society, the recommendation for CRC screening is for regular screening in average risk adults aged 45 to 75 years (2020). Despite these recommendations and statistics, there suboptimal percentage of 50 to 75-year-olds getting adequate CRC screening (American Cancer Society, 2020).

Most colorectal malignancies are slow growing, typically, progressing through a course from precancerous polyps to invasive cancer and eventually advanced-staged disease. This slow growth makes regular CRC screening increasingly important to decrease morbidity, mortality,
and cost of treatment (American Cancer Society, 2020; Doubeni, et al., 2019). Total health care costs in the first year after the diagnosis of CRC can range from $36,000 to $74,000 depending on the stage of the disease (Green, & Meenan, 2020). The cost of screening and diagnostic services per person for a colonoscopy was $1,150 and $304 for FIT/FOBT-based screening (Subramanian, Tangka, Hoover, Cole-Beebe, Joseph, & DeGroff, 2019). Subsequently, screening is very cost effective when compared to the cost of CRC treatment for the first year alone. The cost of adequate CRC screening and early detection of CRC far outweigh the cost associated with years of CRC treatment.

To increase screening rates, it is important to educate patients on all forms of screening including less invasive CRC screening options. Within Kentucky, 70% of those 50 years and older for CRC screening report being up to date on CRC screening (American Cancer Society, 2020). According to the National Center for Health Statistics, Division of Health Interview Statistics (2019), within the United States 66% of people under 50 years old were up to date on CRC screening and 67% of those 50 to 75 years old were up to date. Among those 50 years and older, 61% of people reported completion of a colonoscopy in the past 10 years, 3% reported having a sigmoidoscopy and 1% reported CT colonography in the past 5 years. Comparatively, around 11% reported completion of a stool test, 9% reported completion of a FIT or FOBT screening in the past year and 3% reported stool DNA testing in the past 3 years (National Center for Health Statistics, Division of Health Interview Statistics, 2019).

**Colorectal Cancer Screening Options**

There are many recommended methods for CRC screening by the American Cancer Society including invasive and noninvasive options. All screening methods have similar capability to improve life expectancy when preformed at the appropriate time intervals with
appropriate follow up care (American Cancer Society, 2020). The American Cancer Society recommends that patients be given education on the benefits and risks associated with each test and have the ability to choose the best test for their health history, preferences and advice from their health care provider as needed (American Cancer Society, 2020). It has been proven that offering patients different testing options noticeably increases adherence to screening recommendations (American Cancer Society, 2020; Gupta, et al., 2013). Due to this, the American Cancer Society (ACS) and US Prevention Services Task Force (USPSTF) guidelines do not emphasize any one test over another but stress that all recommended tests can help save lives (217, 224). Screening modalities recommended for use include colonoscopy, flexible sigmoidoscopy, computed tomographic colonography, guaiac-based fecal occult blood test, fecal immunochemical test, and multitargeted stool DNA test.

Colonoscopy is the most used screening test in the US and is typically performed by a gastroenterologist or surgeon and scores the highest in performance and complexity (American Cancer Society, 2020). This screening option allows the provider to obtain a direct visual examination of the entire colon as well as the rectum and can be used alone or as follow up for an abnormal finding during other forms of screening. It has been shown that colonoscopy can reduce CRC incidence by about 40% and mortality by 60% (American Cancer Society, 2020; Zauber, et al., 2012; Doubeni, et al., 2018). This test, if normal, can be repeated every 10 years (American Cancer Society, 2020). Some limitations of colonoscopy include cost of screening, decreased visibility if bowel is not completely cleansed, more invasive (requiring sedation and possibly requiring patient to miss a day of work), and highest risk of bowel tears or infections compared to other tests (American Cancer Society, 2020).
Flexible sigmoidoscopy was a very common screening option before the year 2000 although availability is now limited due mostly to the replacement by colonoscopy (American Cancer Society, 2020). Sigmoidoscopy is very similar to a colonoscopy although sigmoidoscopy can only visualize the rectum and the distal one-third of the colon and must be repeated more often (every 5 years, if normal) (American Cancer Society, 2020). Bowel preparation is less intense than a colonoscopy only requiring use of an enema prior to screening. Sedation is not required for a sigmoidoscopy and is typically performed in a general health care provider's office (American Cancer Society, 2020). If there are abnormalities present the patient is then referred for a colonoscopy in order to view and examine the entire colon. Sigmoidoscopies are associated with about 20-25% reduction in CRC incidence and a 25-30% reduction in mortality due to CRC (American Cancer Society, 2020).

Computed tomographic colonography (CTC) is similar to colonoscopy in that it is a visual examination. This screening option is an imaging procedure that provides 2 or 3 dimensional views of the entire colon with the use of a CT machine (American Cancer Society, 2020). CTC is a quick (10-15 minutes) noninvasive screening with few complications and no sedation needed, making it more appealing. The patient is still required to complete a full bowel cleansing prior to aid in better image and the colon is filled with air before scanning begins (American Cancer Society, 2020). Studies show that CTC screening is similar in performance to colonoscopy for the detection of invasive cancer and advanced adenomas (de Haan, van Gelder, Graser, Bipat, Stoker, 2011). If negative, CTC screening is recommended to be repeated every five years. Limitations associated with CTC include inability to remove polyps or perform biopsies, exposure to low-dose radiation, and it is not covered by all insurance plans (American Cancer Society, 2020).
Guaiac-based fecal occult blood test (gFOBT) is another option used for CRC screening that is low cost and non-invasive. This screening option falls under the umbrella of stool testing using a chemical reaction to detect any form of blood in the stool. Most polyps will be missed when this option is used because this screening does not allow the provider to obtain a direct visual examination of the colon (American Cancer Society, 2020). Bowel cleansing and sedation are not necessary for this form of testing allowing the patient to perform the screening at home, resulting in less stress on the patient (American Cancer Society, 2020). Due to the sporadic bleeding patterns of cancers or adenomas stool samples are collected from patients using multiple consecutive bowel movements to aid in accurate results (American Cancer Society, 2020). This test is required annually, although, if there is a positive result the patient is then referred for a colonoscopy for further testing. Regular use of gFOBT was shown to reduce risk of CRC mortality by 32% and reduce CRC incidence by 20% (American Cancer Society, 2020).

Fecal immunochemical test (FIT) is another low-cost, non-invasive screening option that falls under the umbrella of stool testing. This screening tests antibodies against hemoglobin to specifically detect human blood in the stool and is twice as likely as gFOBT to detect both advanced adenomas and cancers (Hassan, et al., 2012; Robertson, et al., 2016). Bowel cleansing and sedation are not necessary for this form of testing allowing the patient to perform the screening at home. FIT testing similarly to gFOBT testing requires annual testing, multiple stool samples, can miss polyps, and has the possibility of false positive results (American Cancer Society, 2020).

Multitargeted Stool DNA test (Cologuard) is a form of stool testing that not only detects blood in the stool but also multiple genetic mutations in the DNA of cells that are shed into the stool by large adenomas and CRC (American Cancer Society, 2020). Cologuard has been shown
to detect cancer and precancerous lesions more often than FIT but also results in more false positive results leading to unnecessary colonoscopies (Imperiale, et al., 2014). This screening form is newer, and data is still being collected to examine the performance in community settings although it is still recommended by ACS and USPSTF. Cologuard is covered by Medicare, but some private insurances may not cover the screening although patient navigation services are built into the cost of the test including phone call and letter reminders to support test completion (American Cancer Society, 2020). Similarly to FIT and gFOBT testing, bowel cleansing and sedation are not necessary enabling the patient to perform the screening at home on their own (American Cancer Society, 2020). In contrast to FIT and gFOBT testing, Cologuard only requires one stool sample and can be repeated every three years, although, it does come at a higher cost than FIT and gFOBT is not covered by insurance (American Cancer Society, 2020).

Although colonoscopy is the gold standard, many patients are hesitant because of the invasive nature of a colonoscopy. With increased education on all forms of screening, CRC screening can be viewed as more appealing to patients allowing them to make an educated decision on which screening form they would prefer to complete and increasing compliance (American Society of Gastrointestinal Endoscopy, 2017).

**Context, Scope, and Consequences of the Problem**

The population impacted by this issue include individuals 50-75 years of age who are due for CRC screening. This project more specifically focused on patients at a University of Kentucky academic Family Medicine clinic that is home to several primary care and specialty outpatient providers with 23 family and community medicine providers. A unique aspect of the Family and Community Medicine clinic is that they facilitate a quality improvement (QI) program for residents and nurse practitioner students. This program allows students to learn the
quality improvement process and put these newly learned tools to work to address a QI measure determined by the clinic. During the program, students were divided into groups to address multiple clinic quality measures through QI projects. Regular meetings were held to discuss the progress of all the QI projects and how to work through the next step of the process. Smaller groups also met to plan their group’s QI project and implementation.

One quality measure focus was the rate of CRC screening throughout the clinic. The clinic’s goal was to have 65% of patients completing CRC screening. In April of 2018, the rate was 56.93%, and as of October 1st, 2020, that number increased to 63.8%. Although this is a positive change, there is still room to improve.

**Current Evidence-Based Intervention**

Although colonoscopy is gold-standard for CRC screening, other reliable forms of screening are available to patients. One form of CRC screening, Cologuard, stand out to patients because it is less invasive, simple, and covered by most insurances including Medicare (Ahlquist, 2019). Among Medicare patients unwilling to undergo colonoscopy screening, there was an 88% compliance rate with fecal testing (Ahlquist, 2019). Among previously nonadherent patients, 88.3% of patients were adherent with Cologuard over 12 months and 96.1% of patients who had a positive Cologuard test underwent follow up colonoscopy (Prince, Lester, Chiniwala, & Berger, 2017). On the other hand, when patients were recommended to complete colonoscopy screening, adherence rates were much lower (38%) than when a patient was recommended to complete FOBT (67%); showing that universally recommending colonoscopy alone may reduce adherence to CRC screening (Inadomi, et al., 2012).

Therefore, this project focused on providing tailored CRC educational pamphlets that included all screening options to patients. Giving patients more information regarding CRC
screening options and allowing them to make an informed choice concerning CRC screening, could further increase the number of patients who agree to CRC screening.

**Purpose and Objectives**

The purpose of this project was to increase the number of patients screened for CRC by providing tailored CRC and screening education. The overall goal for this project was to increase the number of CRC screenings in the clinic to increase early detection of polyps and/or CRC leading to improved prognosis.

**Specific Aims:**

1) Provide CRC education to 50 to 75-year-old patients at the clinic who are not currently up to date on screening guidelines.

2) Evaluate the effects of tailored CRC patient education on the total number of CRC screenings completed via chart review within three to four months post education.

3) Assess the changes in knowledge regarding CRC and screening options by administering a post-test after patient has reviewed the tailored education pamphlet.

**Theoretical Framework**

The framework used in the formation of this project was Pender’s Health Promotion Model, which focuses on background influencers of health decisions. Three main components of the model include individual characteristics/experiences, behavior-specific cognition, and behavioral outcomes/health promoting behavior (Pender, 2011).

Individual characteristics/experiences refer to personal factors that influence health decisions including age, race, socioeconomic status, and prior health behaviors (Pender, 2011). This can be seen in this project by the patients’ prior decisions regarding CRC screening and the
effects of general characteristics of the individual, as mentioned previously, on whether they seek CRC screening.

The behavior-specific cognition and affect aspect is derived from many components, but most influential to this project includes perceived barriers and benefits of the action, as well as the interpersonal and situational influences (Pender, 2011). This project assessed benefits of CRC and screening education on completion of CRC screening. Many interpersonal influences affect the patient’s decision to complete CRC screening, including the family’s attitude and behaviors towards receiving screening. Situational influences to keep in mind with this project and CRC screening include the communities and environments in which the patients live. In some cases, patients have a lack of resources near them to receive a colonoscopy and making them aware of other screening options could help patients commit to completing CRC screening.

Behavioral outcomes are described as the desired outcome of health decision making (Pender, 2011). In this project, it was important to educate the patients on long-term outcomes that will come with completing or declining CRC screening. These outcomes were discussed in the tailored patient education pamphlet received by patients participating in the project.

Review of Literature

The question that guided the literature review was “In adults, 50 to 75 years, how does tailored patient education pamphlets on CRC and forms of screening, compared to usual care, affect the number of patients who receive CRC screening within three to four months?” To adequately explore this topic multiple databases were used in the search for reliable and relevant sources. Cochrane Database of Systemic reviews, CINAHL, PubMed, and MEDLINE were all used in the search for relevant articles related to answering the PICOT question. Within these databases subject heading and keyword search strategies were used to narrow down the articles
to best fit the search objective. Multiple search strategies were used to avoid missing relevant content and subject heading search is not available for all databases (Melnyk and Fineout-Overholt, 2019). The keywords used during the search included “Patient education”, “Patient intervention”, “Increase screening”, “Colorectal cancer screening”, “Increase adherence”, and “Improve compliance”.

At first, the literature search returned 189 articles. To narrow down the findings, strategic inclusion and exclusion criteria were used, as well as making keywords more specific. Inclusion criteria included studies conducted in western countries (such as Canada, the USA, the UK and Australia), international studies (including those conducted in developing countries), studies published in English, studies published within the last 10 years, and peer-reviewed articles/studies. Studies that were excluded from the literature search included studies in a language other than English as well as studies taken place prior to 2010. A wide array of studies were included in the literature search, including randomized controlled trials (RCTs), case-control studies, interrupted time series, cohort studies, cross sectional studies, observational studies, pilot studies, cohort study, qualitative study, and quality improvement studies. Eleven studies met the expanded criteria and were included in the literature review.

**Summary and Strength of the Evidence**

Of the studies reviewed there were two systematic reviews, one descriptive study, five randomized control trials, two pilot studies, and one quality improvement evaluation study. The strength of this evidence was very high with well over half of the evidence coming from a level one or level two on the quality of evidence hierarchy (Burns, et al., 2012). Sample size was sufficient, and the qualitative study evaluated a diverse amount of online patient education materials. All studies focused on screening education interventions and the appropriate age
group. A limitation found was that some of the study samples had been skewed, reflecting one ethnicity more, or the study was limited to a specific ethnicity (Makoul, et al., 2009; Castaneda, et al., 2020; Roy, et al., 2021). Another limitation noted was the lack of ability to have a true control group due to ethical reasons (Davis, et al., 2017; Castaneda, et al., 2020; Sriphalop, et al., 2016; Katz, et al., 2012).

Tailored education was a common theme of many of the studies reviewed. Tailored education refers to adjusting the education materials to better fit the patient. Education that has been tailored to the patients was more effective and resulted in a higher likelihood of completing screening requirements (Roy, et al., 2021; Issaka, et al., 2019). One example is co-created material, created by a provider and patient, which showed a higher usability among patients and was the preferred material, allowing the materials to reach adults across many literacy and ethnic backgrounds (Bashir, et al., 2019; Castaneda, et al., 2020). Health literacy, which is the understanding of health information and services needed to make well-informed health decisions, is a common issue among many patients (Healthy People 2030, 2021). According to the National Library of Medicine nearly 9 out of 10 adults even those who have a high literacy skill have low health literacy skills in some situations (2021). Most educational material reviewed in the studies had been written above the recommended 6th grade reading level and missed key components of education such as risks, barriers, and benefits of screening (Tian, et al., 2014; Rooney, et al., 2021).

Various types of education were emphasized in the literature review. Printed educational handouts/brochures revealed that they alone could be sufficient in activating patients to discuss screening (Sriphalop, et al., 2016; Roy, et al., 2021). Educational brochures used with videos were an effective educational tool (Katz, et al., 2012). Video education was explored alone and
was found to have a potential to increase knowledge and willingness to screen (Issaka, et al., 2019; Makoul, et al., 2009; Issaka, et al., 2019). Combining brochures with web-based education also resulted in a higher amount of patient/provider discussion regarding screening (Wilkes, et al., 2013).

Courses and one on one education have also been studied regarding effectiveness in screening. Educational group classes and one on one sessions were shown to be an appropriate approach to equipping patients with the knowledge needed to make a decision regarding screening (Castaneda, et al., 2020; Sakoda, et al., 2020).

Based on the information gathered during the literature search all forms of education were beneficial and effective and should be chosen depending on the population. Literature also recognized that educational materials were most effective when tailored to the patient population. Educational materials containing all essential content and written at or below a 5th grade reading level were most beneficial to patients.

**Current State and Gaps**

The current state of the issue is that there is a high prevalence of CRC and a suboptimal incidence of CRC screening. Gaps noticed throughout the literature review included the limited number of studies on the effects of patient education regarding CRC screening on increasing the number of patients screened. Although there was limited research on the impact of patient education specifically on CRC screening rates, we can gather from other studies that patient education can have a huge impact on knowledge and overall rates of screenings. Therefore, it is promising that increasing patient education through tailored educational pamphlets can lead to an increased rate of CRC screening.
Another gap noted was the quality of health education material, with most materials available missing key educational components. To bridge this gap, materials should include all appropriate CRC education as well as target specific patient populations which could help to improve screening rates and knowledge. It is also important to ensure that the pamphlets are at an appropriate reading level for this population, 5th grade reading level is preferred.

**Methods**

**Design**

The design of the study was a quasi-experimental practice improvement project using patient education, a post-test, and a chart review. The intervention implemented was a tailored educational pamphlet with information regarding multiple types of CRC screening as well as CRC in general.

**Setting**

The setting of this project was a Family and Community Medicine (FCM) clinic in Lexington, Kentucky. The FCM clinic offers primary care and preventive services for all ages, treating a variety of illnesses and injuries (UK Healthcare, n.d.). This setting was a good fit for this project because of the number of patients seen as well as the wide variety of patients and providers.

The values of UK healthcare are diversity, innovation, respect, compassion, and teamwork which help to guide the behaviors and clinical decision making to provide the best patient centered care possible (UK Healthcare, n.d.). These values directly support their mission and commitment to patient care, education, and research (UK Healthcare, n.d.). The vision of UK healthcare is to be one community committed to creating a healthier Kentucky (UK Healthcare, n.d.). These values and goals of UK Healthcare align perfectly with this project. By
providing patients with education regarding CRC screening, rates of screenings will hopefully improve leading to a healthier Kentucky. Improving CRC screening has also been named as one of FCM’s strategic quality indicators on which they wanted to focus. Stakeholders involved in the process of this project included physicians, nurse practitioners, physician assistants, nurses, medical assistants (MA), and patients.

One site-specific facilitator was the academic/research affiliation of FCM, this aided in the implementation of this project because all staff and patients were used to implementation of projects throughout the clinic. The clinic has focused on CRC screening which helped improve motivation of the staff for their participation in the study as well as to take action to improve screening rates. A barrier to implementation was staff participation in the intervention implementation due to the fast pace of the clinic as well as multiple ongoing QI projects. To lessen the burden on staff, the PI personally distributed of pamphlets to patients who met inclusion criteria. Another barrier noted was the potential burden of clinic flow disruption during implementation as the PI entered patients’ rooms for pamphlet delivery. This barrier was lessened by asking the appropriate staff for permission to enter the patients’ room after the patient was settled in a room and prior to provider visit.

To further lessen disruption of clinic flow, implementation took place over a short time frame. All staff were informed of implementation dates in advance. Being a large academic setting could have also been a barrier to implementation due to other projects being implemented at the same clinic, which could lead to some staff confusion. Providing clinic staff, specifically nurses, MA, and providers, with a brief recap of the PI’s plan for implementation every morning and being present for questions helped overcome both barriers.
Sample

The sample of this project included patients aged 50 to 75 years who were scheduled for appointments during the data collection weeks and who were due or overdue for their CRC screening. All races and genders were included as well as all patients who speak/read Spanish or English. Patients were excluded if they were under 50 years old or older than 75 years. Those who were not due for CRC screening were also excluded from the sample. Patient visits that took place due to acute pain or illness (such as fever or vomiting) were also excluded due to the lack of wellbeing during the visit. Patients who were unable to read the educational pamphlet due to developmental delays were also excluded from the project sample. With these inclusion and exclusion criteria in mind there were 17 subjects who agreed to participate in the project.

Procedure

IRB Approval

This project was a Quality Improvement project covered under a broad IRB approval related to teaching residents and DNP students how to conduct quality improvement in the clinical setting. Therefore, this project did not require separate IRB approval.

Description of Intervention

Based on the literature review and the setting of this project, implementation of CRC screening pamphlets to patients was the chosen educational media to be most feasible. There were many national CRC screening educational pamphlets available but to ensure that the material was tailored to the population of the FCM, an educational pamphlet created by the Kentucky Cancer Program was used for this project. Local information on receiving financial assistance for screening as well as Kentucky based websites/offices that offer more information were listed on the pamphlet ensuring that it was tailored to the population of the clinic (Kentucky
Cancer Program, 2018). The pamphlet also covered what CRC was and symptoms associated with CRC. A list of available and recommended screening options were also listed on the pamphlet for review. This pamphlet was available in English and Spanish to expand the number of patients reached by this intervention (Appendix A; Appendix B).

**Measures and Instruments**

A short posttest (Appendix C; Appendix D) was attached to the pamphlets. This posttest covered three questions which included “Were you able to review the pamphlet?”, “Did you learn anything new regarding CRC or CRC screening options?”, and “What is your likelihood of completing CRC screening within the next 6 months?”. The first two questions were simple yes or no questions followed by a Likert scale question for question three. The Posttest was written at a 5th grade reading level on five by seven cardstock. The font of the text was Times New Roman 18-point font to make it easily readable by patients. To make this intervention accessible to more patients, the posttest cards associated with the Spanish pamphlets were written in Spanish and those attached to the English pamphlets were written in English.

**Data Collection**

Implementation and data collection took place over a three-week period. At the beginning of each week a list of age-appropriate patients who met all inclusion criteria were obtained using Tableau. Tableau is a UKHC resource that allows providers to select their clinic, date, quality measure, and whether that measure was met. From here a list of patients who met the criteria for the study was formulated. This list was then compared to the patient schedule on EPIC by the PI to assess the time of each patients’ appointment. The PI used this list to make a schedule of eligible patients to ask to participate in the project during their visit.
During the implementation weeks, the PI visited each of the eligible patients after the initial rooming process was completed and prior to the provider visit to explain the project. Before the PI entered the room and during the rooming process the MAs asked the patients for permission for the PI to come into the room and discuss CRC. After which the PI entered the room and obtained consent via script to participate in the project. For all of the patients willing to participate, the PI then explained the pamphlet, asked patient to review the pamphlet while they waited for their provider, and complete the attached posttest. Patients’ medical record numbers were written on the back of each posttest to allow for future evaluation of the intervention via chart review. After completion of the posttest, patients were asked to leave the posttest in the exam room for collection by the PI after visit. Data was collected from all providers during this implementation period. The PI was present throughout the three weeks to ensure that all posttests were collected, and all appropriate patients had the opportunity to participate.

A chart review was also utilized during data collection, which took place four months post implementation. Charts of patients who participated in the project were reviewed for demographic patient information (gender, race, and age) and evidence of a completed CRC screening including what type of screening was completed. A random sample of charts who also met inclusion criteria and were seen on the implementation dates were also reviewed to assess demographic information as well as CRC screening completion. This group was used as the comparison group of patients who only received usual care during their visit.

Limited resources were needed for the implementation of this project. Providers, nurses, MA, and the PI were the main personnel involved in implementation. Very little technology was needed for implementation, although, excel spread sheets were utilized for data analysis. The
educational pamphlet from the Kentucky Cancer Program was free and printed for distribution. For the printing of pamphlets and posttests a small budget was needed with a total of 60 dollars.

**Data Analysis**

The data collected during the chart review included demographic data (age, race/ethnicity, and sex), completion of CRC screening, and which form of screening was completed. It was also noted during the chart review if a CRC screening was ordered but not completed by the patient. The measurements were obtained to determine whether tailored CRC patient education positively impacted the CRC screening rates in the clinic. All analysis was completed in SPSS, version 25, with the assistance of a statistician. The data analysis process involved Levene's Test for Equality of Variances, Chi-Square Tests, Descriptive Statistics. Levene's Test for Equality of Variances was used to analyze the age of participants. Chi-Square Tests were used to analyze sex, race, and completion of CRC screening of the participants. Descriptive Statistics was then used to analyze the post-test results. Variables were summarized using means and standard deviation or frequency distributions when applicable.

**Results**

**Population Demographics**

All patients who met the inclusion criteria were asked to participate in the project, of 27 patients asked 17 patients agreed to participated. The demographics of the control and intervention group (Table 1) were similar among age, although, sex and race differed slightly, although not significant. The average age for participants was 61 years old for the control and intervention groups. There were six (40.0%) females and 9 (60.0%) males included in the control group, while twelve (70.9%) females and five (76.5%) males were included in the intervention group. Among the control group there were seven (46.7%) white participants and eight (53.3%)
African American participants. The intervention group consisted of four (23.5%) white participants and thirteen (76.5%) African American participants.

**Post-Test Results**

Among the intervention group, results regarding the post-test (Table 2), which was given to each participant during their visit, was collected. There was a 100% success rate in participants being able to review the pamphlet. Among those, 88.2% of participants reported that they learned something new about CRC or CRC screening options. Overall, the participants’ answers regarding their likelihood of completing CRC screening ranged from 0 (not at all) to 10 (very likely), with an average likelihood of 5.59 out of 10. This average likelihood was affected by the wide range of answers from participants. There were eight participants that rated their likelihood between 8 and 10 while there were five rating their likelihood between 0 and 1, while the other four participants fell in the middle range.

**Completion Rates**

The Completion rates (Table 3) were also evaluated for the control and intervention groups four months post-intervention. Only 16 out of the 17 participants were evaluated for completion rates due to the death of a participant. There was no difference in CRC screening rates between the control and intervention groups (13.3% and 6.3%, respectively; p=.6). Of the two who received screening in the control group, both had a colonoscopy. The one participant who completed screening in the intervention group had a Cologuard screening.

**Discussion**

This study was able to assess whether tailored CRC patient education pamphlets would increase CRC screening rate among 50-to-75-year old’s seen at the clinic who were due for CRC screening. The findings of this QI project show that tailored patient education pamphlets did not
have a significant impact on the rates of CRC screening at this clinic. Although, as discussed prior, the literature showed that tailored patient education was successful in other screening areas.

Even though there was no significant increase in CRC screening rates, participants in the intervention group who received the tailored CRC education pamphlet did report learning something knew about CRC or screening options. This could in turn increase their likelihood in the future of receiving CRC screening or could lead to more discussion of CRC screening with their providers. Although, increased knowledge alone does not result in behavior change, providers can advocate for behavior change by increasing personal awareness of why the change needs to occur and discussing how the patient can make the change (Arlinghaus & Johnston, 2017). It is also shown that tailored education is most effective in increasing personal awareness (Arlinghaus & Johnston, 2017).

Another observation made from the chart review was that among the participants in both groups, some had CRC screenings ordered although not completed. The only screening option that was ordered for participants, although not yet been completed, was Cologuard testing (four in the control group and three in the intervention group). This showed that discussion about CRC did occur and a decision on testing was made although the patient had not completed the screening. Lack of completion of Cologuard tests could be due to inadequate time between ordering, collection, and results.

Behavioral change and putting something into action is hard. In fact, it is a common rule that people need to hear something seven times before change is usually made (Kruse, 2021). Research also shows that repeated statements are viewed as more valid possibly because repetition goes hand in hand with familiarity (Moons, Mackie, & Garcia-Marques, 2009). Thus,
sustained use of the pamphlet with a focused conversation about CRC screening options is a consideration.

**Strengths of Study**

Many strengths were noted in the study which led to ease of implementation and data collection. First, the clinic was interested in improving CRC screening rates leading to more interest in the project. The clinic being an educational clinic also gave some strength to the project because staff and patients were used to taking part in studies and QI initiatives. There was also little interference with clinic flow since the PI completed all implementation and encountered the patient during gaps of care between being seen by the nurse and the provider. Therefore, every effort was made to decrease stress on staff during the implementation process.

**Limitations of Study**

During the process of this project a few limitations were noted. Educational pamphlets were only administered to patients on days that the PI was available to be in clinic resulting in a small sample size. Another limitation of implementation was that there was only one PI implementing the intervention although multiple qualified patients were scheduled for appointments at the same time. The PI was unable to see multiple patients who were scheduled for the same appointment time leading again to a small sample size.

Another limitation noted during data collection was that electronic health records do not automatically send results for procedures if they were completed outside of the enterprise. This could have contributed to the low number of documented completed tests. It is possible there is a slower documentation of screenings that are completed at other enterprises. As noted above, several Cologuard tests were ordered but not yet “completed”, this could have also been due to the results not posting yet. Another factor could have been the small timeframe for completion of
chart review. Four months were allowed following the intervention before completion of the chart review, this could have been too narrow of a window for completion for some participants.

The COVID-19 pandemic could have also been a limitation on why patients are behind on screening or did not complete their screenings. Patients could have been less inclined to complete preventative health screenings due to the presence and fluctuating number of COVID-19 cases. Another factor the pandemic could have played in the completion of CRC screening was the scheduling of colonoscopies. Many elective procedures were postponed during the pandemic and are just now being rescheduled. It is possible that an increase in screenings is not yet detectable.

**Recommendations for Practice**

With the results from this project, some recommendations for practice can be made to potentially help increase CRC screening rates. The chart review revealed that many patients who were not up to date on CRC screening had no documentation of any discussion of CRC by the providers. Therefore, one recommendation that could be made would be to encourage all providers to document any discussion of CRC or screening with patients. This will allow all providers caring for this patient to understand what discussion, if any, had been made with this patient regarding screening. Discussion could be occurring although there is little documentation of this. It is imperative that any health screening conversation be documented to enhance continuity of care, quality of care, and follow-up discussions. One consideration to make this more feasible for providers would be to include a smart phrase during charting or a check box to indicating discussion had been made.

It is important that more discussion occur with patients regarding CRC screening at every non-acute visit to help increase the rates of screening. As mentioned previously, it takes seven
times for a person to fully grasp a concept and act on that information. Discussion at every visit will help with repetitive communication leading to familiarity of CRC screening and the potential of increasing CRC screening rates.

One recommendation for practice would be to include the educational pamphlet in MyChart. Use of the pamphlet did show increased knowledge and could be beneficial for providers to educate patients. Allowing the patients to review the material outside of the clinic on their own time. In addition, providers can encourage the patient to contact them for further discussion or if they have any questions.

Another recommendation that could be beneficial to increasing the CRC screening rates would be to establish care gap outreach calls. Outreach calls could possibly aid in increasing CRC screening rates across the clinic as well as increase knowledge of CRC screening options. Many studies have shown that telephone outreach can increase screening rates and be more impactful than text messages or letters (Kiran, Davie, Moineddin, & Lofters, 2018; Coronado, et al., 2021). These calls could be made to every patient who is due or overdue for CRC screening. The calls could inform the patients that their CRC screening is due and assess whether they are interested in screening. To go further, during these calls screening options could be discussed and if the patient is willing their CRC screening of choice could also be scheduled.

**Conclusion**

Colorectal cancer (CRC) is a leading cause of cancer and death due to cancer, within Kentucky and the United States as a whole. Yet only 68 percent of people aged 50-75 on average receive CRC screening (CDC, 2017; American Cancer Society, 2020). Since most colorectal malignancies are slow growing, regular CRC screening is extremely important. Although colonoscopy is the gold standard, many patients are hesitant because of the invasive nature of a
colonoscopy, therefore, all CRC screening options should be explored with patients to increase their likelihood of screening.

During implementation, patients who met inclusion criteria and participated in the project were given tailored CRC patient education pamphlets. The effects of tailored CRC patient education were evaluated three to four months post education. According to the chart review tailored patient education pamphlets did not make a difference in the CRC screening rates of participants. The post-test revealed many of participants in the project noted that they did in fact learn something knew regarding CRC and screening options.

The findings of this QI project show that tailored patient education pamphlets did not have a significant impact on the rates of CRC screening at this clinic. Although, some recommendations for practice can be made including improving documentation by providers of any discussion of CRC or screening with patients. This will allow for better health maintenance care by making all other future providers aware of prior CRC discussion. Another suggestion is to establish care gap outreach calls to follow up with patients who do not meet CRC screening guidelines and discuss possible screening options for that patient. To better address these recommendations for practice, future projects interested in bridging the gap of inadequate CRC screenings could focus on assessing the effectiveness of including the pamphlet in MyChart, the effectiveness of care gap outreach calls compared to tailored pamphlets, improving provider discussion of CRC screening as well as documentation of discussion made.

Although CRC educational pamphlets were not significantly impactful in this small study, there is a lot to gain from this project to further improve practice and patient care. Since this was a small study, it is truly hard to know what the true impacts of tailored patient education could be on screening rates. When looking at more robust studies evaluating similar
Interventions results show a significant impact, leading one to believe this approach is still promising and should be considered in the future. With continued focus on CRC screening and education within projects as well as trial of the recommendations made an increase CRC screening rates is achievable.
References


https://doi.org/10.3122/jabfm.2018.06.170369

https://nnlm.gov/guides/intro-health-literacy


http://hdl.handle.net/2027.42/85350


Tian, Chenlu, MD, Champlin, Sara, MA, Mackert, Michael, PhD, Lazard, Allison, MS, & Agrawal, Deepak, MD. (2014). Readability, suitability, and health content assessment of


## Tables

**Table 1. Demographic characteristics among intervention and control participants**

<table>
<thead>
<tr>
<th></th>
<th>Control (n = 15) Mean (SD) or n (%)</th>
<th>Intervention (n = 17) Mean (SD) or n (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>61.13 (6.85)</td>
<td>61.35 (6.37)</td>
<td>.93</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6 (40.0%)</td>
<td>12 (70.9%)</td>
<td>.082</td>
</tr>
<tr>
<td>Male</td>
<td>9 (60.0%)</td>
<td>5 (29.4%)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td>.169</td>
</tr>
<tr>
<td>White</td>
<td>7 (46.7%)</td>
<td>4 (23.5%)</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>8 (53.3%)</td>
<td>13 (76.5%)</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Intervention Post-test Results (n = 17)

<table>
<thead>
<tr>
<th></th>
<th>n (%) or Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Review pamphlet</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>17 (100%)</td>
</tr>
<tr>
<td>No</td>
<td>0 (0%)</td>
</tr>
<tr>
<td><strong>Learn anything new about CRC or CRC screening</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15 (88.2%)</td>
</tr>
<tr>
<td>No</td>
<td>2 (11.8%)</td>
</tr>
<tr>
<td><strong>Likelihood to screen in the future (1 -10)</strong></td>
<td>5.59 (4.06)</td>
</tr>
</tbody>
</table>
Table 3. Comparison of screening rates among intervention and control participants

<table>
<thead>
<tr>
<th></th>
<th>Control (n = 15)</th>
<th>Intervention (n = 16)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>p</td>
</tr>
<tr>
<td>Screening completed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>13 (86.7%)</td>
<td>15 (93.8%)</td>
<td>.60</td>
</tr>
<tr>
<td>Yes</td>
<td>2 (13.3%)</td>
<td>1 (6.3%)</td>
<td></td>
</tr>
</tbody>
</table>
Appendices

Appendix A: *CRC Educational Pamphlet (English)*

---

**colon cancer**

**protect yourself: know the facts**

---

**What is colon cancer?**
The colon and rectum are parts of the digestive system. Colon cancer begins when cells that are not normal grow inside the colon or rectum. The cancer often begins as a small growth called a polyp. Polyps are not cancer, but they can turn into cancer over time. Colon cancer is one of the leading causes of cancer deaths in Kentucky.

**What are the symptoms?**
There usually are no symptoms of colon cancer at first. When the disease is more advanced, symptoms may include blood in the stool, a change in bowel habits, cramps, weight loss, a tired feeling, and nausea. These symptoms can be caused by other health conditions. People with these symptoms should see their doctor.

**What is screening?**
Screening means looking for signs of disease before symptoms appear. There are several tests that check for signs of colon cancer. Some common tests are:

- **Fecal Immunochemical Test:** You can do this test _every year_ at home with a kit from your health care provider. This test checks for blood in the stool.

- **Colonoscopy:** The doctor inserts a thin lighted tube into the rectum and colon to check for polyps or cancer while the patient is under anesthesia. The entire colon is examined.

- **Sigmoidoscopy:** This test, similar to a colonoscopy, uses a thin lighted tube to examine the rectum and the left side of the colon.

It is important to discuss with your doctor which test(s) are right for you!

**Why is cancer screening important?**
**Screening saves lives.** Colon cancer screening is important because there usually are no symptoms at first. A colonoscopy or annual FIT test can find cancer early, when it is easiest to treat. Colonoscopy can also find polyps and other growths that are not normal. Removing these growths can stop colon cancer from developing.

**Who should be screened?**
People _age 50 or older_ should be _screened regularly_. The chance of getting colon cancer increases with age.
colon cancer: protect yourself, know the facts

More than 90 percent of people who get colon cancer are age 50 or older. Younger people with other risk factors should talk to their doctor about when and how often to be screened.

What are some other risk factors?
Your chance of getting the disease increases if:
• you or a close relative has had colon polyps or colon cancer
• you have inflammatory bowel disease or certain hereditary conditions.

What if I can’t afford the tests?
Most cancer screenings are covered by insurance, Medicare, and Medicaid. For more detailed information, view the ACA and Cancer Fact Sheet available at www.kycancer.org. Also, KCP’s Pathfinder, an online, searchable guide, may help you find financial assistance available in your community. Visit www.kycancerprogram.org and click on the Pathfinder link.

How can I reduce my chance of getting colon cancer?
• Talk with your doctor about which screening test is right for you and how often to be screened. Many colon cancer deaths could be prevented if everyone age 50 and older get screened regularly.
• Don’t smoke.
• Eat a healthy diet with plenty of fruits and vegetables. Limit high-fat foods, red meat, and processed meat.
• Exercise and stay at a healthy weight.
• Limit alcohol intake to no more than 2 drinks per day for men, and 1 drink per day for women.

Where can I get more information?
KCP’s online tool, Pathfinder, can link you to cancer support and services nearest you. Visit www.kycancerprogram.org to find cancer resources in your community, or to contact your local Kentucky Cancer Program office.

For information on all types of cancer, contact:
• National Cancer Institute, 1-800-4-CANCER, www.cancer.gov
• American Cancer Society, 1-800-ACS-2345, www.cancer.org
• Centers for Disease Control and Prevention, www.cdc.gov

This fact sheet was developed by the Kentucky Cancer Program at the University of Kentucky Markey Cancer Center. The information comes from the National Cancer Institute, the American Cancer Society, and the Centers for Disease Control and Prevention.

Last reviewed January 2018
cánancer de colon
protéjase: infórmese

¿Qué es el cáncer de colon?
El colon y el recto forman parte del aparato digestivo. El cáncer de colon aparece cuando algunas células que no son normales crecen adentro del colon o del recto. A menudo, el cáncer empieza en forma de un pequeño crecimiento que se llama pólipos. Los pólipos no son cáncer pero con el paso del tiempo pueden convertirse en cáncer. El cáncer de colon es una de las principales causas de muerte por cáncer en Kentucky.

¿Cuáles son los síntomas?
El cáncer de colon no suele presentar síntomas al principio. Cuando la enfermedad se encuentra más avanzada, los síntomas comprenden sangre en las heces, cambios en los hábitos de evacuación de intestinos, cólicos, pérdida de peso, sensación de cansancio y náuseas. Estos síntomas también podrían ser causados por otras enfermedades. Aquellas personas que presentan estos síntomas deben ver a su doctor.

¿Qué es una prueba de detección?
Las pruebas de detección se hacen para identificar la enfermedad antes de que se presenten síntomas. Existen varias pruebas para detectar señales de cáncer de colon. Las más comunes son:
- Prueba inmunocromática fecal (PIF): usted puede realizar esta prueba en su casa una vez al año con materiales provistos por su profesional de la salud. Esta prueba es para detectar sangre en las heces.
- Colonoscopía: el doctor inserta un tubo iluminado delgado por el recto y el colon para detector pólipos o cáncer con el paciente bajo anestesia. El estudio examina la totalidad del colon.
- Sigmoidoscopía: en este estudio, parecido a la colonoscopía, se utiliza un tubo delgado e iluminado para examinar el recto y la parte izquierda del colon.

¿Es importante que hable con su doctor sobre cuáles de estos estudios le correspondería hacer?

¿Por qué son tan importantes las pruebas de detección de cáncer?
La detección puede salvar vidas. Las pruebas de detección de cáncer de colon son importantes porque en las etapas iniciales de la enfermedad no suele haber síntomas. Una colonoscopía o prueba PIF anual (FIT en inglés) pueden detectar el cáncer en sus etapas tempranas cuando es más fácil tratarlo. La colonoscopía también puede detectar pólipos y otros tipos de crecimientos que no son normales. Al eliminar estos crecimientos se detiene el desarrollo del cáncer de colon.

¿Quién debe hacerse estas pruebas de detección?
Las personas mayores de 50 años deben hacerse pruebas de detección con regularidad. Las posibilidades de presentar cáncer de colon aumentan con la edad. Más del 90 por ciento de las personas que contraen cáncer de colon tienen 50 años de edad o más. Las personas más jóvenes con otros factores de riesgo deben hablar con su doctor sobre cuándo y con qué frecuencia deben hacerse pruebas de detección.
cancer de colon: protéjase, infórmese

¿Cuáles son otros factores de riesgo?
Las posibilidades de presentar esta enfermedad aumentan si:
- usted o un pariente cercano ha tenido pólipos en el colon o cáncer de colon
- si usted tiene enfermedad inflamatoria intestinal o ciertas enfermedades hereditarias.

¿Qué puedo hacer si no tengo los medios para pagar las pruebas de detección?
La mayoría de los planes de cobertura médica y también Medicare y Medicaid, cubren las pruebas de detección de cáncer. Para mayor información visite la Asociación Americana de Cáncer (ACA en inglés) y la Hoja Informativa que puede encontrar en www.kycancer.org. También puede visitar la base de datos de KCP llamada Pathfinder, en donde puede buscar información sobre disponibilidad de asistencia financiera en su comunidad. Visite www.kycancerprogram.org y oprima en la liga llamada Pathfinder.

¿Cómo puedo reducir las posibilidades de contraer cáncer de colon?
- Hable con su médico para determinar cuáles pruebas de detección debe hacerse y con qué frecuencia. Muchas de las muertes debidas a cáncer de colon pueden prevenirse si todas las personas mayores de 50 años de edad se hicieran sus pruebas de detección regularmente.
- No fume.
- Siga una alimentación sana con muchas frutas y verduras. Limite los alimentos de alto contenido graso, las carnes rojas y los embutidos.
- Haga ejercicio y mantenga un peso adecuado.
- Limite su ingesta de alcohol a no más de 2 tragos diarios para los hombres y no más de 1 trago diario para las mujeres.

¿Dónde puedo conseguir más información?
KCP tiene un sitio en internet llamado Pathfinder a través del cual puede hallar recursos de apoyo de cáncer y otros servicios en su área. Visite www.kycancerprogram.org para encontrar recursos para el cáncer en su comunidad o póngase en contacto con la representación en su localidad del programa para el cáncer Kentucky Cancer Program.

Para información sobre todo tipo de cáncer, póngase en contacto con:
- National Cancer Institute (Instituto Nacional del Cáncer)
  1-800-4-CANCER, www.cancer.gov
- American Cancer Society,
  (Sociedad Americana del Cáncer)
  1-800-ACS-2345, www.cancer.org
- Centers for Disease Control and Prevention (Centros para la Prevención y el Control de Enfermedades), www.cdc.gov

Esta hoja informativa fue creada por el programa de cáncer Kentucky Cancer Program en el Centro de Cáncer Markey de la Universidad de Kentucky (University of Kentucky Markey Cancer Center). La información se obtuvo del Instituto Nacional del Cáncer, la Sociedad Americana del Cáncer y los Centros para la Prevención y el Control de Enfermedades.

Última revisión en marzo de 2018

www.kycancerprogram.org
El programa de cáncer Kentucky Cancer Program es administrado por el Centro de Cáncer Markey de la Universidad de Kentucky (University of Kentucky Markey Cancer Center) y el Centro de Cáncer Brown de la Universidad de Louisville (University of Louisville Brown Cancer Center).
Appendix C: Posttest of Knowledge (English)

Post-Test

1. Were you able to review the pamphlet?
   YES          NO

2. Did you learn anything new about CRC or CRC screening options?
   YES          NO

3. What is your likelihood of completing CRC screening within the next 6 months?
   0  1  2  3  4  5  6  7  8  9  10
   Not at all              Very Likely
Appendix D: Posttest of Knowledge (Spanish)

Post-Test

1. ¿Pudiste revisar el folleto?
   
   Sí  NO

2. ¿Aprendió algo nuevo sobre las opciones de detección de CRC o CRC?
   
   Sí  NO

3. ¿Cuál es su probabilidad de completar el cribado de CRC dentro de los próximos 6 meses?
   
   0  1  2  3  4  5  6  7  8  9  10
Para nada Muy probable