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Executive Summary: Development and Validation of a Clinical Practice Guideline for Improving Colorectal Cancer Screening

Katie Nguyen
Walden University

Walden University

College of Nursing

This is to certify that the doctoral study by

Katie Nguyen

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Jody Minnick, Committee Chairperson, Nursing Faculty
Dr. Kristina Bohm, Committee Member, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

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Executive Summary: Development and Validation of a Clinical Practice Guideline for Improving Colorectal Cancer Screening

by

Katie Nguyen

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Summary

Colorectal cancer is one of the top three killers of adults globally. The age to be screened for colorectal cancer for average-risk individuals has been lowered from 50 to 45 years of age; however, for those with a familial history of colorectal cancer, or a personal medical history of other gastrointestinal diseases, the age to be screened has been lowered from 45 to 40 years of age or younger. A clinical practice guideline (CPG) that supports the screening, identification, and referral of patients at risk has the potential to improving colorectal cancer screening in at-risk patient populations. This was identified as a need and practice gap, and a DNP Project was created to complete this. The practice-focused question developed was, "Will an evidence-based clinical practice guideline that promotes proactive clinic and provider engagement in patient outreach and risk communication, to improve colorectal cancer screening rates among at-risk and of-age patient populations, be approved by a panel of experts using the Agree II Tool at an outpatient gastroenterology clinic?" The CPG was developed after an extensive review of literature using evidence-based per-reviewed journals and databases. An expert panel reviewed the CPG using the Agree II tool, and each offered an analysis pertaining to strengths, weaknesses, and recommendations of the guideline as well as an overall score. The consensus of the panel was to approve the CPG with an overall quality rating average for all reviewers totaling to 85.71%, accounting for a high-quality guideline, as it is above the threshold of 70%. The CPG has the potential to affect social change by providing a tool to increase screening, identification, and referrals for patients at risk for colorectal cancer.

Background

On a global scale, colorectal cancer is among the top three causes of cancer-related deaths (Bretthauer et al., 2022). The progression of colorectal cancer is usually gradual and is diagnosed via detecting precursor lesions that are identified as adenomatous polyps or serrated lesions (Shaukat & Levin, 2022). Because of the practically silent progression of this disease, it is imperative that patients participate in early screening in order to detect these precursor lesions, for most often times they are asymptomatic in early stages. Late stage colorectal cancer diagnosis is highly preventable via routine screenings, which come in the form of blood tests, stool tests, and procedures. Examples of these screenings include colonoscopy, the gold standard for colorectal cancer screening that allows for the detection and ultimate removal of precancerous lesions if indicated, and a less invasive option being fecal immunochemical test (FIT), which detects hidden blood in the stool (Plys et al., 2023). Both of these exams are the colorectal cancer screening tools that were discussed in the guideline. According to JAMA (2020), approximately 10.5% of all new colorectal cancer cases were diagnosed in persons younger than 50 years of age. It is because of this statistic that the US Preventive Services Task Force has now lowered the age for colorectal cancer screening from 50 to 45 years of age for patients considered average-risk, or having no personal or familial history of colorectal disease. For patients who are considered high-risk, meaning those who do have a personal or familial history of colon cancer or other colorectal-related diseases, screening should begin at 40 years of age at the latest.

The gap in practice that this guideline is ultimately attempting to bridge is the underwhelming prevalence of colorectal cancer screening among appropriate patient populations.

Research suggests that there is an estimate of only 60% of adults aged 50 to 75 years that are up-to-date with their colorectal cancer screening (Singal et al., 2016). Because of this low percentage, this begs the question of whether there exists a disconnect between patient level of understanding on the importance of routine colorectal cancer screening, and risk communication offered by healthcare providers. This question is what has ultimately paved the direction of this clinical practice guideline towards intervening at the level of patient education and patient outreach. Previous studies have proven that the incorporation of patient outreach efforts in regards to colorectal cancer screening as opposed to the casual and nonchalant offering of screening options during routine office visits can increase patient screening rates by at least 40% (Pilonis et al., 2020). In other words, this guideline has based itself on the reputable numerous findings that support how patient education and patient outreach by clinics and providers can significantly increase colorectal cancer screening rates. Further statistical values extracted from the literature review reveal that routine and timely screening can reduce colorectal cancer-related deaths by at least 70% (Zheng et al., 2023). Another study's yielded results have shown that patient outreach in the forms of telephone reminder calls and mailed invitations for colorectal cancer screening have increased FIT by 58.8% and colonoscopy by 42.4% in compared to the control group that did not undergo any form of outreach intervention (Singal et al., 2016).

South Sacramento, California, where the practicum facility resides, is a highly diverse area. This clinic sees patients of many different types of ethnicities, cultures, and socioeconomic backgrounds. Varying levels of socioeconomic backgrounds often come with varying levels of educational backgrounds and medical literacy. In understanding this, it should be considered that the best level to intervene with this diverse patient demographic would be to improve the

processes surrounding patient education. Taking the time to ensure that patients have an adequate understanding of the importance of routine screening for colorectal cancer can improve compliance for screening among target patient populations. It is a possibility that many patients opt out of screening because they may not fully comprehend the importance of routine screening. For instance, providers taking the time to explain the relatively silent progression of colorectal cancer, and how it is often diagnosed in late stages when treatment options are far more aggressive and the prognosis is relatively poor, can potentially increase the likelihood that patients will opt to be screened.

The development of this clinical practice guideline was based on the premise of incorporating thorough risk communication and patient education by providers, as well as a patient outreach program geared to improve colorectal cancer screening rates. Current literature has shown that personal factors pertaining to health literacy, risk perception, and social influence are all highly attributable to and associated with cancer screening rates (Peterson et al., 2017). In acknowledging this finding alone, it can be assumed that healthcare providers and other clinic staff hold the capacity to intervene in a way that can help patients understand the importance of routine colorectal cancer screening, especially if this was not sufficiently explained to them previously.

Summarization of Findings

A majority of colorectal cancers are usually diagnosed via the detection of precancerous lesions, often identified as adenomatous polyps or serrated lesions (Shaukat & Levin, 2022). As mentioned previously, the progression of this disease is relatively silent. For the goal of a more preferable prognosis, population-based screening among targeted age and risk-level groups must

be initiated in order to detect colorectal cancer before its late stages (Mehta et al., 2021). Patients should be routinely screened when indicated as it pertains to their age or presumed personal risk, as early detection of colorectal cancer ultimately decreases mortality rates.

To reiterate, findings from the literature review suggest that the early detection and diagnosis of colorectal cancer significantly increases prognosis and reduces mortality rates. Multiple sources also support that patient outreach efforts and risk communication by providers help to increase cancer screening rates. Patient outreach efforts can come in multiple forms in regards to colorectal cancer screening, such as reminder telephone calls and mailed invitations to perform colonoscopy or FIT. In conjunction with patient outreach efforts, provider-patient communication has been proven to be a strong modifiable factor with regards to cancer screening behavior (Peterson et al., 2017).

All findings from this literature review have proven a consistency between the relationship of improving colorectal cancer screening rates, and provider-patient risk communication and patient outreach efforts. Healthcare providers are considered to be an essential source of health information to their patients, for they aid in screening eligibility, facilitating action, and coordinating follow up (Peterson et al., 2017). Providers have a heavy influence on their patients that should be utilized and focused towards providing thorough patient education and risk communication that are catered to each patient's level of medical literacy.

Sources of Evidence

Evidence for this clinical practice guideline were gathered from reputable sources, including nursing-related journals and other peer-reviewed literature, as well as the medical databases PubMed, Medline, and CINAHL. The search terms that were used during data

collection are as follows: *colorectal cancer, colorectal cancer screening, colorectal cancer screening guidelines, fecal immunochemical testing, colonoscopy, Cologuard testing, stool DNA testing, patient outreach, patient outreach program, patient education, screening, cancer screening, best practice guidelines, clinical practice guideline,* and *intervention.* After the review, comparison, and extraction of relevant data, these research findings were summarized via research synthesis process tools. Using these tools, the research sources were also organized by total number of each type of study, quality level, and level of data (Appendix G). The suggestions of this guideline were developed from the evidence gathered from this literature review, which included six Level I sources (four randomized controlled trials, two systematic reviews), one Level III source (qualitative study), one Level IV source (clinical practice guideline), and one Level V source (expert opinion). All sources included in this guideline are considered to be of high quality, and relevant findings have been compiled to formulate this guideline.

Clinical Practice Guideline Development

Agree II Tool and Expert Panel

This following section will discuss the evaluation of the clinical practice guideline as reviewed by a panel of experts using the Agree II Tool. This expert panel is more than qualified practitioners in the healthcare arena and is a unique group of reviewers due to them sharing the commonality of having many years of experience as a certified registered nurse (RN) prior to becoming an advanced practice nurse. This vast amount of previous nursing experience has offered this panel a perspective that heavily favors and emphasizes the importance of thorough patient education and its effect on patient compliance. Most appraisers are also currently working

at a gastroenterology facility, which makes them highly well-versed on the topic of this guideline.

Appraiser #1 A DNP, FNP-C with over 10 years of experience as a RN, and over 10 years as a board-certified FNP, currently specializing in gastroenterology in an outpatient Kaiser Permanente facility in South Sacramento, California.

Appraiser #2 A FNP-C with about 20 years of experience as a RN, and over 7 years as a board-certified FNP. She is also currently specializing in gastroenterology and working at the same outpatient Kaiser Permanente facility as the last appraiser.

Appraiser #3 A RN with over 25 years working as a RN at the same outpatient gastroenterology facility at Kaiser Permanente.

Appraiser #4 A AGNP has a nondisclosed amount of years as a RN, but has been working as an AGNP for the past 2 years, and is a hospitalist, specializing in internal medicine who has reviewed many other guidelines regarding screening and maintenance health management in the past.

Agree II Tool Results

Each appraiser was provided with the clinical practice guideline and the Agree II Tool along with instructions. There are a total of 23 questions in the Tool organized into six domains, with each item scored on a scale from 1 to 7. The following table displays the scoring of each domain, overall quality, whether the appraiser would recommend the guideline, and the total percentage score of the guideline by each appraiser (Appendix B). The overall quality rating average for all reviewers totaled to 85.71%, accounting for a high-quality guideline as it is above the threshold of 70%.

Table 1

Results of AGREE II Domain Items

	Appraiser #1	**Appraiser #2**	**Appraiser #3**	**Appraiser #4**	**Total % scores** (per domain)
Domain 1 (3 Ques.)	21	21	21	21	100%
Domain 2 (4 Ques.)	28	28	20	25	90.18%
Domain 3 (7 Ques.)	49	48	38	44	91.33%
Domain 4 (4 Ques.)	22	27	28	28	93.75%
Domain 5 (3 Ques.)	19	21	9	19	80.95%
Domain 6 (2 Ques.)	14	13	8	13	85.71%
Overall quality rating (1 ques.)	7	7	5	6	89.29%
Recommend the CPG (Y/Y with mods/N)	Y	Y	Y w/ mods	Y w/ mods	
Total scores (per appraiser excluding overall quality)	94.41%	98.14%	77.02%	93.17%	

Note: Each question is worth 7 points, and the score range for each is 1-7 (Agree II Tool Appendix B)

Strengths and Limitations According to Expert Panel

The biggest strengths of this guideline as highlighted by the expert panel were the first two domains. In these two domains, the panel agreed that the scope, purpose, and stakeholder involvement were clearly described. Another domain that scored relatively well was Domain 4, which regarded the clarity of presentation. The panel agreed that the guideline was simple to understand and follow, as it was clear in its recommendations.

The expert panel discussed multiple weaknesses and areas of improvement, stating that the monitoring and auditing criteria of the guideline was ambiguous in regards to measuring the success of screening interventions, auditing adherence to guideline, and a lack of specific criteria for assessing effectiveness of patient outreach and primary care provider risk communication training efforts. There was also a lack of discussion on alternative management strategies, such as follow-up procedures or interventions for abnormal results. It was also agreed upon that there

should have been information regarding concrete tools or detailed procedures to assist in the practical application of recommendations, specifically on the cost of implementing an outreach program, financial impact on healthcare systems, resources required for expanding access, and potential changes in healthcare funding. There was a consensus that the literature review and the guideline itself limited information respective to only FIT and colonoscopy and should have included other types of screening pertaining to blood work and other stool tests, such as Cologuard. Despite these multiple areas of improvement, the expert panel recommends the clinical practice guideline, with half of the appraisers recommending the guideline with modifications.

Conclusions

The diagnosis of colorectal cancer in its late stages is highly preventable via routine screening exams and procedures as previously mentioned in this executive summary. The US Preventative Services Task Force has now lowered the age for colorectal screening from 50 to 45 years of age for those considered average-risk, and from 45 to 40 years of age or younger for those who are considered high-risk. This measure was indeed enacted to improve screening among appropriate patient populations, but there is always more that can be done in order to improve colorectal cancer-related statistics. The clinical practice guideline provides evidence regarding the effectiveness of incorporating patient outreach efforts and thorough risk communication by providers on the compliance of colorectal cancer screening with the ultimate goal of affecting social change. Intervening at the level of patient education often bridges many gaps in practice by addressing patients' questions and concerns regarding procedures and tests, which can ultimately increase screening rates, for it is a possibility that patients often opt out of

screening due to a lack of clear understanding of the importance of these exams. Further recommendations as suggested by the expert panel include offering other colorectal cancer screening exams other than FIT and colonoscopy, such as blood tests, other stool tests, and Cologuard. This guideline has multiple implications for nursing practice and positive social change in the sense that it offers a tool to improve screening, identification, and referrals for patients at risk for colorectal cancer. Ultimately, this guideline offers a promising strategy to increase colorectal cancer screening rates that simply requires an improvement in communicative efforts with patients that would not disrupt the workflow of healthcare facilities. The evaluation method for this clinical practice guideline would require project leaders to meet at least 6 months post-implementation and every month thereafter to monitor how many patients are getting screened for colorectal cancer. Success of the implementation of the guideline would be based on whether patient screening has increased from pre-implementation.

Impact of Adopting CPG into Organization

In adopting this guideline into the organization of Kaiser Permanente South Sacramento, this would likely yield the result of increasing patient screening rates for colorectal cancer. This would ultimately improve the prognosis of any patients who are diagnosed with colorectal cancer, for it would be detected at an early stage, and would help decrease colorectal cancer-related mortality rates. Adopting this guideline would also potentially improve the provider-patient relationship as a result of the patient outreach program to any facility, especially with providers offering thorough risk communication regarding colorectal cancer to the patients. This guideline is oriented heavily around intervening at the patient education level, which would

require providers to spend more time to explain screening and diagnostic options for patients in an individualized way that would be easily interpreted and understood.

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Appendix A: Clinical Practice Guideline

Abstract

Colorectal cancer is among one of the most prevalent cancers and is among the top three causes of cancer-related deaths on a global scale (Bretthauer et al., 2022). Colorectal cancer is highly preventable via screenings, most often colonoscopies and fecal immunochemical test (FIT), that allow for the detection and ultimate removal of early-stage cancers and precancerous lesions (Plys et al., 2023). Colonoscopies are the gold standard for diagnosing colorectal cancer; adherence to cancer screening is imperative for early detection and treatment. The US Preventive Services Task Force, in recent years, has lowered the age to get screened for colorectal cancer from 50 to 45 years of age. This is because there is an estimate of 10.5% of all new colorectal cancer cases being diagnosed in persons younger than 50 years of age (JAMA, 2021). Furthermore, current literature suggests that an estimate of only 60% of adults aged 50 to 75 years are up-to-date with their colorectal cancer screening (Singal et al., 2016). Current literature suggests that incorporating patient outreach in regards to colorectal cancer screening as opposed to the usual offering of screening during routine office visits can increase patient screening rates by at least 40% (Pilonis et al., 2020). Additionally, further evidence has shown that routine and timely colorectal cancer screening can decrease colorectal cancer-related mortality rate by at least 70% (Zheng et al., 2023).

Background and Context

Objective and Scope

The overall objective of this clinical practice guideline is to improve colorectal cancer screening among patient populations who are considered high risk, as well as individuals who have become of minimum age to receive screening. In both men and women, colorectal cancer is now the third leading cause of cancer deaths as of 2021 (JAMA, 2021). Most colorectal cancers are gradual, usually detectable via precursor lesions that are identified as adenomatous polyps or serrated lesions (Shaukat & Levin, 2022). Because of this slow growth and progression of colorectal cancer, there is an enabled window of time that can effectively screen for early cancer signs by detecting these precursor lesions.

In order to improve the rate of colorectal cancer screening, there should be an implementation of a patient outreach program that promotes the importance of colorectal cancer screening to the appropriate patient populations. This type of program would involve ancillary reaching to patients via mail or telephone to encourage and facilitate screening, if appropriate. Additionally, providers would be trained on how to effectively provide effective risk communication to patients who are being seen during regular office visits. The overall objective of this type of intervention would be to increase incidence of screening among patient populations who are deemed either at average or high risk for colorectal cancer.

Patient Population

The minimum age to be screened for colorectal cancer, in recent years, has lowered itself from 50 to 45 years of age. However, for those who have a familial history of colon cancer or other colon-related health concerns, the minimum age to be screened for colorectal cancer should be 40 years of age. With that being said, this guideline is meant to be applied to those who are of minimum age to be screened for colorectal cancer, as well as those who should be screened 5 years sooner due to a familial history that is relevant to colorectal health risks and concerns.

Problem Statement

The recommended age to have a colonoscopy performed has now decreased from 50 to 45 as a result of an increase in the incidence of colorectal cancer diagnoses prior to the age of 50 (Mehta et al., 2021). As stated previously, the onset and progression of this disease is relatively silent. In recognizing this finding, it can be understood how imperative it is to initiate population-based screening among targeted age and risk-level groups in order to address early onset of colorectal cancer before its late stages (Mehta et al., 2021). As it pertains to colonoscopy as a screening method for asymptomatic patients who are of average risk, this procedure is casually offered to patients when they are of appropriate age to be screened. Current evidence shows that approximately only 60% of adults aged 50 to 75 years are up-to-date with their colorectal cancer screening, with this number being significantly lower among underserved populations (Singal et al., 2016). With these insufficient numbers, it begs the question of whether there is a disconnect between the importance of screening and patients' level of understanding of this importance.

Process and Development

Rigor of Development

Sources of evidence were selected from reputable websites and organizations such as PubMed, Medline, Walden Library, medical- and nursing-related journals, and other peer-reviewed literature. Literature review of these databases consisted of looking up key search terms pertinent to the DNP project topic. Sources were narrowed via review of relevant and applicable data and have been referenced in this guideline as appropriate. The majority of the included sources that make up this project are of Level I evidence, predominantly randomized controlled trials, that provide the bulk of the evidence-based information to support this clinical practice guideline.

The AMA (2021) has released a clinical practice guideline regarding a new recommendation statement by the US Preventive Services Task Force that the age to be screened for colorectal cancer has now lowered itself from 50 to 45 years of age for average-risk individuals, and from 45 to 40 years of age for those who have a familial history of colorectal disease. The change in recommended age for screening is due to an increased incidence of new colorectal cancer diagnoses in persons who are under 50 years of age (JAMA, 2021). This information found from the AMA alone aligns with the purpose for developing a guideline on how to increase colorectal cancer screening among the targeted patient populations. In extracting relevant information from reliable sources such as the AMA and other reputable sources, a DNP project can be constructed as a clinical practice guideline in order to further promote the importance of colorectal cancer screening in relevant health and age populations.

As reiterated, colonoscopies are the gold standard for diagnosing colorectal cancer due to its high sensitivity for polyps and other cancerous lesions (Singal et al., 2016). However, the negative factors that should be considered in regards to this procedure is that it is invasive,

cumbersome, expensive, and has limited availability in rural communities (Singal et al., 2016). However, FIT, on the other hand, although less sensitive for polyps and cancer, are non-invasive, inexpensive, accessible, and more convenient when compared to colonoscopies (Singal et al., 2016).

There are a few limitations of the sources included within this clinical practice guideline. These limitations consist of not being generalizable to other health systems (Singal et al., 2016), poor comparison between colonoscopy and FIT as it pertains to accuracy for detecting colorectal cancer (Pilonis et al., 2020), poor adherence to study secondary to long follow-up times (Bretthauer et al., 2022), and inaccuracies due to self-reported data (Peterson et al., 2017).

Stakeholder Involvement

The target populations of this clinical practice guideline are those who are of average risk (45 years of age and older) and high risk (those with a familial history of colorectal disease) for developing colorectal cancer. Other stakeholders include patient families (that would provide support and encourage screenings), healthcare providers and clinic ancillary staff (to provide patient education and proper risk communication, as well as facilitate patient outreach program), health insurance companies (who would cover screenings and provide incentives for early detection), government health agencies (to support health policy improvement changes and allocate funding), pharmaceutical companies (for medical research funding and support), and nonprofit organizations (for supplemental education and other support services).

Patient Outreach and Risk Communication by Providers

Patient outreach efforts have been countlessly proven to improve population-level response to cancer screening. Outreach efforts come in many forms, such as thorough patient

education, mailed invitations for screening, reminder telephone calls, e-mail communication, and in-person risk communication offered by providers. Current literature suggests that health literacy, risk perception, and social influence are the personal factors that are the most heavily associated with cancer screening rates (Peterson et al., 2017). In understanding this, providers and other clinic staff should aim to be proactive in providing the proper patient education, risk communication, and previously mentioned outreach strategies for the ultimate goal of increasing colorectal cancer screening among the targeted populations.

There is available literature that has proven that mailed and telephone outreach has increased FIT by 58.8%, and colonoscopy by 42.4%, in comparison to the control group that did not undergo an outreach intervention (Singal et al., 2016). Conventionally, patients are provided information regarding screening during routine office visits, where this conversation is more brief, casual, and protocol. This traditional approach makes it easy for patients to become desensitized to the topic of colorectal cancer screening. Research suggests that patient outreach outside of the typical healthcare visits may be an effective method to promote screening among targeted patient populations (Singal et al., 2016). Furthermore, provider-patient communication as it pertains to screening exams or procedures has proven to be among the strongest modifiable factors in cancer screening behavior, for providers serve as an essential health information source that aid in screening eligibility, facilitating action, and coordinating follow-up (Peterson et al., 2017).

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Appendix B: Agree II Tool

Agree II Tool

DOMAIN 1. SCOPE AND PURPOSE

1. The overall objective(s) of the guideline is (are) specifically described.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

2. The health question(s) covered by the guideline is (are) specifically described.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

3. The population (patients, public, etc.) to whom the guideline is meant to apply is specifically described.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

DOMAIN 2. STAKEHOLDER INVOLVEMENT

4. The guideline development group includes individuals from all relevant professional groups.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

5. The views and preferences of the target population (patients, public, etc.) have been sought.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

6. The target users of the guideline are clearly defined.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

DOMAIN 3. RIGOUR OF DEVELOPMENT

7. Systematic methods were used to search for evidence.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

8. The criteria for selecting the evidence are clearly described.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

9. The strengths and limitations of the body of evidence are clearly described.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

DOMAIN 3. RIGOUR OF DEVELOPMENT continued

10. The methods for formulating the recommendations are clearly described.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

11. The health benefits, side effects, and risks have been considered in formulating the recommendations.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

12. There is an explicit link between the recommendations and the supporting evidence.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

DOMAIN 3. RIGOUR OF DEVELOPMENT continued

13. The guideline has been externally reviewed by experts prior to its publication.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

14. A procedure for updating the guideline is provided.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

DOMAIN 4. CLARITY OF PRESENTATION

15. The recommendations are specific and unambiguous.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

16. The different options for management of the condition or health issue are clearly presented.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

17. Key recommendations are easily identifiable.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

DOMAIN 5. APPLICABILITY

18. The guideline describes facilitators and barriers to its application.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

19. The guideline provides advice and/or tools on how the recommendations can be put into practice.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

20. The potential resource implications of applying the recommendations have been considered.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

DOMAIN 5. APPLICABILITY continued

21. The guideline presents monitoring and/or auditing criteria.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

DOMAIN 6. EDITORIAL INDEPENDENCE

22. The views of the funding body have not influenced the content of the guideline.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

23. Competing interests of guideline development group members have been recorded and addressed.

1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree

Comments

OVERALL GUIDELINE ASSESSMENT

For each question, please choose the response which best characterizes the guideline assessed:

1. Rate the overall quality of this guideline.

1 Lowest possible quality	2	3	4	5	6	7 Highest possible quality

2. I would recommend this guideline for use.

Yes	
Yes, with modifications	
No	

NOTES

Appendix C: Individual Evidence Summary Tool

EBP Question: Will an evidence-based clinical practice guideline that promotes proactive clinic and provider engagement in patient outreach and risk communication to improve colorectal cancer screening rates among at-risk and of-age patient populations be approved by a panel of experts using the Agree II Tool at an outpatient gastroenterology facility?

Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
Katie Nguyen	1	Singal et al. 2016. Outreach invitations for FIT and colonoscopy improve colorectal cancer screening rates: A randomized control trial in a safety net health system	RCT	Patients aged 50-64 years who were not up-to-date with CRC screening; mailed FIT outreach (n=2400), mailed colonoscopy outreach (n=2400), usual care, or control (n=1199); Parkland Health and	Participants in the experimental groups (FIT and colonoscopy outreach) were mailed outreach invitations to perform screenings. Those who did not respond to the mailed outreach invitation within 2 weeks received follow-up	Mailed outreach invitations significantly increased screening at 58.8% for the FIT outreach group, and by 42.4% for the colonoscopy outreach group, compared to only 29.6% for the usual care group.	Screening participation for all three groups was measured by querying EHR laboratory data for FIT testing and a combination of test orders and administrative claims data for sigmoidoscopies and colonoscopies.	Study was conducted in only a single safety-net health system; study may not be generalizable to other health systems. Patients could have opted out of screening because they received CRC screening	Level I – Strong	

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Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
				Hospital System (PHHS).	telephone reminders. Participant in control group (usual care) continued to receive visit-based CRC screening at the discretion of providers.			tests at outside institutions.		
Katie Nguyen	2	Pilonis et al. 2020. Participation in competing strategies for colorectal cancer screening: A randomized health services study	RCT	12,485 eligible participants ages 55 and 64 split into 3 groups: control group (n=4161), sequential	Control group received a postal invitation to colonoscopy and a re-invitation to colonoscopy for initial responders.	Screening process completion was 17.5% of participants in control group, 26.5% in the choice strategy	All data pertinent to screening participation for all 3 test groups were recorded throughout the course of 18 months and was	Colonoscopies are to be performed once every 10 years, while FIT is to be performed annually. Although FIT has	Level I – Strong	

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Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
		(PICCOLINO study)		strategy group (n=4161), and choice strategy group (n=4163).	The sequential strategy group received a postal invitation to colonoscopy and then a FIT kit for non-responders and subjects refusing colonoscopy. The choice strategy group received a postal invitation offering a choice between FIT and	group, and 25.8% in the sequential strategy group. These findings suggest that incorporating patient outreach for more options other than colonoscopy alone, such as FIT, can help increase patient screening for colorectal cancer by 60-70%.	entered to the EHR.	been proven to show higher participation rates than colonoscopy, its uptake over several rounds may not prove to be superior to one-time colonoscopy.		

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Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
					coloscopy that was enclosed with a FIT kit as well as an invitation to colonoscopy, with the same offer for non-responders.					
Katie Nguyen	3	Bretthauer et al. 2022. Effect of colonoscopy screening on risks of colorectal cancer and related death	RC T	84,585 eligible participants between ages 55 to 64 in Poland, Norway, and Sweden were assigned into a 1:2	Participants were randomly assigned either to invitation to one-time screening colonoscopy or to no invitation to screening.	The risk of colorectal cancer-related death in this large population-based sample decreased by 50%.	Data from all screening examinations were registered in an online electronic case-report form and stored at a central database.	Lower-than-expected participation in some countries and a lack of information about adherence to recommend	Level I - Strong	

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Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
				ratio either to invitation to undergo colonoscopy screening (the invited group) or to no invitation and no screening (the usual-care, or control, group).				ations regarding surveillance for polyps. Additionally, longer follow-up time may be needed to capture the full effect of colonoscopy screening.		
Katie Nguyen	4	Plys et al. 2023. Colorectal cancer screening decision based on predicted	RCT	880 residents ages between 50 to 69 years in the	The participants are categorized into low, moderate, and high-	Offering patients a personalized CRC risk and appropriate recommend	Self-administered questionnaire that measures screening uptake (whether	Personalization of CRC screening is time-consuming and can be costly.	Level I - Strong	

EBP Question: Will an evidence-based clinical practice guideline that promotes proactive clinic and provider engagement in patient outreach and risk communication to improve colorectal cancer screening rates among at-risk and of-age patient populations be approved by a panel of experts using the Agree II Tool at an outpatient gastroenterology facility?										
Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
		risk: Protocol for a pilot randomized controlled trial		organized screening program of the Vaud canton, Switzerland.	risk according to their 15-year CRC risk. The intervention group received a newly designed brochure with their personalized risk and screening recommendations based on their risk level. The control group will receive the usual brochure of the Vaud	ations can improve the risk-benefit balance of screening test allocations.	colonoscopy or FIT for respective risk level) 6 months after the intervention.			

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Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
					CRC screening program.					
Katie Nguyen	5	Zheng et al. 2023. Effectiveness of colorectal cancer (CRC) screening on all-cause and CRC-specific mortality reduction: A systematic review	Systematic review	10 RCTs and 47 model studies were eligible for inclusion in this systematic review.	The aim of this study was to pool and compare all-cause and CRC specific mortality reduction of CRC screening in RCTs and simulation models.	Mortality reduction of 73% was found for 10-yearly colonoscopy screenings.	10 RCTs and 47 model studies were compared and contrasted in order to evaluate the effectiveness of different CRC screening interventions in the general population on all-cause and CRC-specific mortality reduction compared with no screening in RCTs and	This study did not consider cost, detection rate, and false positive rates, which should be considered when evaluating optimal screening scenarios.	Level I – Strong	

EBP Question: Will an evidence-based clinical practice guideline that promotes proactive clinic and provider engagement in patient outreach and risk communication to improve colorectal cancer screening rates among at-risk and of-age patient populations be approved by a panel of experts using the Agree II Tool at an outpatient gastroenterology facility?

Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
							simulation models.			
Katie Nguyen	6	Peterson et al. 2017. Impact of provider-patient communication on cancer screening adherence: A systematic review	Systematic review	A total of 35 articles were considered suitable for inclusion in this review.	These 35 articles were systematically reviewed, focusing on primarily on provider-patient communication in cancer screening and subsequent screening behavior.	Findings that focused on provider encouragement and on shared and informed decision-making components were positively correlated with colorectal cancer screening.	The 35 articles included in this review were systematically reviewed for the effectiveness of improving patient reminders and provider-communication on CRC screening.	Most articles relied on patient self-report to report adherence outcome measures, however, previous literature has suggested that self-report measures may be inaccurate.	Level I - Strong	
Katie Nguyen	7	US Preventive Services Task Force. 2021.	Clinical practice guideline	N/A	N/A	10.5% of all new colorectal	N/A	N/A	Level IV - Good	

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Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
		Screening for colorectal cancer: US preventive services task for recommendations statement				cancer cases are being diagnosed in persons younger than 50 years of age.				
Katie Nguyen	8	Shaukat et al. 2022. Author correction: current and future colorectal cancer screening strategies	Expert Opinion	N/A	N/A	Most colorectal cancers are gradual, usually detectable via precancerous lesions. Because of the slow and practically silent progression of the disease, it is imperative	N/A	N/A	Level V – Good	

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Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
						that patients get screened once they are of eligible age, or if they have a familial history of colorectal disease.				
Katie Nguyen	9	Mehta et al. 2021. Colorectal cancer screening starting at age 45 years-ensuring benefits are realized by all	Qualitative	N/A	N/A	There is an increased incidence of colorectal cancer diagnoses prior to the age of 50. The age to receive colorectal cancer screening has lowered	N/A	N/A	Level III - Strong	

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Reviewer name(s)	Article number	Author, date, and title	Type of evidence	Population, size, and setting	Intervention	Findings that help answer the EBP question	Measures used	Limitations	Evidence level and quality	Notes to team
						itself from 50 to 45 in order to initiate population-based screening among target age groups.				