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A Survey of Provider Attitudes, Beliefs, and Perceived Barriers Regarding a Centralized Direct-Mail Colorectal Cancer Screening Approach at Community Health Centers

Jamie H. Thompson[1], Jennifer L. Schneider[1], Jennifer S. Rivelli[1], Amanda F. Petrik[1], William M. Vollmer[1], Morgan J. Fuoco[1], and Gloria D. Coronado[1]

Abstract

Background: Colorectal cancer screening (CRC) rates are low, particularly among individuals with low socioeconomic status. Organized CRC screening programs have demonstrated success in increasing screening rates. Little is known about provider attitudes, beliefs, and practices related to CRC screening or how they are influenced by an organized CRC screening program. **Methods:** In 2014 and 2016, providers from 26 safety net clinics in Oregon and Northern California were invited to complete baseline and follow-up online surveys for the Strategies and Opportunities to Stop Colon Cancer in Priority Populations (STOP CRC) study. The provider survey link was sent electronically to primary care providers serving adult patients. Providers were sent reminders every 2 weeks via email to complete the survey, up to 3 reminders total. In this article, we describe learnings about provider attitudes, beliefs, and practices related to CRC screening after implementation of the STOP CRC program. **Results:** A total of 166 unique providers completed baseline and/or follow-up surveys, representing 228 responses. Main themes included (1) favorable shifts in attitude toward fecal immunochemical test (FIT) and direct-mail cancer screening programs, (2) changes in provider perception of key barriers, and (3) growing interest in centralized automated systems for identifying patients due for CRC screening and eligible for population-based outreach. **Discussion:** Providers are interested in improved information systems for identifying patients due for CRC screening and delivering population-based outreach (ie, to distribute FIT kits outside of the clinic visit) to help reduce health system- and patient-level barriers to screening. **Trial Registration:** National Clinical Trial (NCT) Identifier NCT01742065.

Keywords

colorectal cancer screening, provider survey, qualitative research

Introduction

Colorectal cancer (CRC) is one of the leading causes of cancer-related death in the United States.[1] Regular screening is effective in reducing the incidence and mortality of CRC by detecting precancerous polyps or cancer at early curable stages.[2] The United States Preventive Services Task Force (USPSTF) recommends that average-risk asymptomatic adults begin CRC screening at age 50 years,[2] yet CRC screening rates are marked by demographic disparities, with Latinos, the uninsured, and those residing in the United States for fewer than 10 years having the lowest rates.[3,4]

CRC screening promotion programs have demonstrated success in increasing screening adherence among general populations[5] as well as underserved communities.[6] As part of the Strategies and Opportunities to Stop Colon Cancer in Priority Populations (STOP CRC) study, federally qualified health centers (FQHCs) were recruited to participate in a pragmatic trial aimed at increasing CRC screening rates using an electronic medical record (EMR)–enabled mailed

[1]The Center for Health Research, Kaiser Permanente Northwest, Portland, OR, USA

Corresponding Author:
Jamie H. Thompson, The Center for Health Research, Kaiser Permanente Northwest, 3800 North Interstate Avenue, Portland, OR 97227, USA.
Email: jamie.h.thompson@kpchr.org

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fecal immunochemical test (FIT) outreach program.[7] The EMR tools developed for the project have been described previously.[8] Findings from this successful intervention[9] revealed that while health center leaders believe CRC screening should be a priority and programs like STOP CRC can support needed change, there were concerns about clinic capacity and whether providers would endorse a mailed FIT outreach approach versus colonoscopy, given concerns that a mailed outreach program lacks direct communication between a provider and patient.[7,10,11] Moreover, published literature has emphasized the importance of provider recommendation in patients' decisions to obtain CRC screening.[12,13] Given this important role in reinforcing screening messages delivered by the mailed FIT outreach program and that little is known about provider attitudes toward such programs, this brief report describes learnings about provider attitudes, beliefs, and practices related to CRC screening after implementation of the STOP CRC program.

Methods

Setting

This study was conducted among 26 FQHC clinics randomized in STOP CRC. The clinics were dispersed throughout Oregon and northern California and serve vulnerable populations, including Latinos, the uninsured, and people living below the federal poverty level.[9]

Survey Design, Participant Recruitment, and Study Procedures

In 2014 and 2016, baseline and follow-up online surveys were administered to providers working in participating clinics. Responses to these surveys were collected June to December 2014 and January to March 2016, respectively. Intervention clinics rolled out the intervention between June 2014 and January 2015, aligning with the time period for baseline survey data collection. Control clinics rolled out between August and December 2015. The research team gathered a list of internal medicine providers from STOP CRC clinics. Project staff emailed the clinic leads instructions on provider outreach, sample text about the survey, the survey hyperlink, and provider ID. Study staff used SurveyMonkey (San Mateo, CA), an online platform, to manage the survey. A reminder message was delivered every 2 weeks after the initial outreach to those who had not responded. Providers were sent up to 3 reminders.

Questionnaire Development

Based on the experience of the research team, review of the literature,[14-16] consultations with experts, and interviews with providers at a pilot clinic, the team developed a 10-minute survey for providers. The survey was piloted with a provider at a local health center to test comprehension and length. The questionnaire contained 20 questions, with Likert scale responses, covering topics about provider attitudes, beliefs, and practices about screening. Providers were given the opportunity to answer 2 open-ended questions at both baseline and follow-up—"what do you think would be the most helpful to increase CRC screening at your practice?" and overall reaction to STOP CRC and a mailed FIT outreach approach. A trained qualitative researcher (JLS) reviewed and summarized these responses. All study materials were approved by the Kaiser Permanente Northwest Institutional Review Board.

Statistical Analyses

We describe the demographic characteristics of all unique providers from participating clinics who completed either or both the baseline and follow-up surveys (n = 166), and report frequencies of provider attitudes and beliefs before and after implementation of the STOP CRC program. Because of the design limitations noted in the discussion and the exploratory nature of this analysis, data are presented as simple descriptive statistics (SAS 9.4, SAS Institute Inc, Cary, NC) with no formal statistical analysis. Responses from open-ended questions are also presented.

Results

A total of 191 surveys were emailed to providers at baseline and 120 (63%) were competed; 206 surveys were emailed to providers at follow-up and 108 (52%) were completed. Surveys were completed by 166 unique providers representing 228 responses (62 providers completed both surveys). Of the 166 providers, 60% were physicians, 63% female, 85% white, and the mean age at time of first survey completion was 45 years. About 35% of the providers worked in clinics randomized to the intervention arm. Select provider results from all completed surveys are presented in Table 1 and illustrative quotes from open-ended questions are presented in Table 2. We observed similar patterns to those described below when we limited our analysis to the subset of providers who responded to both the baseline and follow-up surveys (n = 62).

Theme 1: Attitudes and Beliefs About FIT Testing and Direct-Mail Cancer Screening

The proportion of providers who believed that FITs were "very effective" in reducing CRC in average-risk patients changed from 47% to 55% (8 percentage point increase) in intervention clinics and 58% to 65% (7 percentage point increase) in control clinics, indicating broadened acceptability of this newer screening test among all clinics.

Table 1. Provider Survey Results at Baseline and Follow-up by Intervention Status.

	Baseline		Follow-up	
	Control (%)[a]	Intervention (%)[a]	Control (%)[b]	Intervention (%)[b]
Theme 1: Attitudes and beliefs about FIT testing and direct-mail cancer screening				
How effective is FIT in reducing CRC in average-risk patients				
Very effective	57.9	46.6	65.2	54.8
Theme 2: Barriers to screening				
Not having systems to identify patients who need CRC screening				
Sometimes/Usually	30.5	55.9	10.8	36.6
Not having enough time to discuss				
Sometimes/Usually	61.0	66.1	65.2	73.8
Patients are unaware of the need to screen				
Sometimes/Usually	83.1	82.8	75.8	76.2
Patients do not perceive they are at risk for colorectal cancer				
Sometimes/Usually	86.4	88.1	80.0	83.3
Theme 3: EMR tools and capacity				
Health Maintenance—Available in EMR				
Yes	91.5	96.5	98.5	100.0
Health Maintenance—Used for CRC screening				
Often	59.3	50.0	69.8	68.3
Reporting Workbench—Available in EMR				
Yes	39.3	30.9	71.9	53.9
Reporting Workbench—Used for CRC screening				
Often	15.4	0	33.9	5.3

Abbreviations: CRC, colorectal cancer; EMR, electronic medical record; FIT, fecal immunochemical test.
[a]Baseline denominators range from 104 to 118, given missing values.
[b]Follow-up denominators range from 97 to 108, given missing values.

For the open-ended question asking about reactions to a direct-mail approach (27 responses at baseline and 49 responses at follow-up), 5 providers at baseline and 4 at follow-up expressed appreciation for the program, believing it to be a "great idea." However, some providers at baseline (n = 18) and follow-up (n = 17) were skeptical a direct-mail FIT program would work for their patients and felt they would be confused by or not respond to the mailing due to challenges with literacy, homelessness, or inaccurate addresses. These providers preferred having a direct conversation with patients while handing the FIT out during a clinic visit.

Theme 2: Barriers to Screening

Among intervention clinics, a change in provider perception from baseline to follow-up was observed for the barrier "not having systems to identify patients who need CRC screening." The proportion of provider agreement with this barrier was 56% at baseline and 37% at follow-up, indicating that the STOP CRC tools may have introduced systems to identify those in need of screening. Three additional key barriers (lack of time to discuss CRC screening during an office visit, patient awareness of the need to screen, and patient perception that they are not at risk for CRC) remained relatively unchanged from baseline to follow-up. Among the control clinics, the barrier of "not having systems to identify patients who need CRC screening" was 31% at baseline and 11% at follow-up, demonstrating a similar pattern as seen among the intervention clinics.

Among the 83 providers who completed the open-ended question at baseline about what would help the most to increase CRC screening at their clinic, 36% felt workflow improvements to address barriers could be made during in-office visits, such as more involvement of medical assistants offering FIT, greater follow-up after handing out a FIT, improved FIT instructions, and dedicated staff to discuss CRC screening and barriers with patients. Among the 73 providers who completed this question at follow-up, this figure was 41%.

Theme 3: EMR Tools and Capacity

In the intervention clinics, provider perception of the availability of EMR tools such as Health Maintenance for CRC screening was 96% at baseline and 100% at follow-up.

Providers who "often used" Health Maintenance for CRC screening was 50% at baseline and 68% at follow-up. Similarly, in the control clinics, providers who "often used" Health Maintenance for CRC screening also changed from 59% to 70%. Between baseline and follow-up in the intervention clinics, provider knowledge of Reporting

Table 2. Themes and Illustrative Provider Quotes to Open-Ended Responses.

Open-Ended Response Themes	Baseline Illustrative Responses	Follow-up Illustrative Responses
Theme 1: Attitudes and beliefs about direct-mail FIT cancer screening		
Appreciation	*Thank you for letting me participate . . . I really think this can make a difference on behalf of our patients' health.*	*Mailing is a good idea for those patients who have not come in for the year . . .*
Skepticism	*What if a patient is homeless cannot read? How will the program work for those patients?*	*Not sure as [FIT] don't come back very often—patients get them but don't seem to know what to do or why to do it.*
Theme 2: Barriers to screening—need in-clinic workflow improvements		
Involve other staff	*Having a workflow to identify those in need of screening . . . assistants being more proactive in discussions with patients.*	*Having staff go through EMR and update health maintenance information with previous screening results so data is accurate, and we can identify patients that actually need screening.*
Follow-up	*More resources to follow-up with patients who are due . . . follow-up calls for FITs not returned.*	*More reminder calls to patients.*
Dedicated time	*Dedicated time set aside for face-to-face conversations—education is key.*	*Having the time to explain it—we simply don't have enough time with 5-10 minutes to address at each visit.*
Improve FIT kit instruction	*A [fecal] test that is more sensitive, more specific, cheaper, and more tolerable to patients.*	*Offer lower literacy educational materials [with FIT kit].*
Theme 3: EMR tools and capacity—need for centralized, automated systems		
Automated identification of patients due for CRC screening	*Have an automated, medical assistant or nurse run system.*	*Fully automate the screening process. The EMR should: identify the patients who need screening, automatically contact them, and automatically follow-up to make sure patients have completed it.*
FIT distribution outside of clinic visit	*A system-wide passive approach, using the EMR to identify who has not had screening and mailing FIT kits to them at home . . .*	*Mailing to folks who don't typically come in and include an incentive if they return the FIT.*

Abbreviations: CRC, colorectal cancer; EMR, electronic medical record; FIT, fecal immunochemical test.

Workbench availability was 31% (baseline) and 54% (follow-up), while frequent use of the tool for CRC screening was 0% at baseline and 5% at follow-up. Reporting Workbench, an EMR tool that lists patients needing specific services, was used more heavily in the control clinics.

From the open-ended question asking providers what they thought would be most helpful in increasing CRC screening at their practice, almost three-fourths of providers (60/83) at baseline described the need for creating and standardizing centralized, automated systems for CRC screening identification and population-based outreach (ie, greater EMR capability to identify patients due for screening and establish systems to distribute FIT kits outside of the clinic visit), which was precisely the intent of the STOP CRC program. At follow-up, 85% of providers (62/73) continued to support these types of centralized and automated CRC screening approaches.

Discussion

This study examined providers' attitudes, beliefs, perceived barriers, and preferred screening methods regarding CRC screening at community health centers. Based on a descriptive analysis, our surveys found that (1) providers' belief in the effectiveness of FIT testing as a CRC screening procedure generally increased during the baseline to follow-up period; (2) changes in provider perception of key barriers, specifically not having systems to identify those who need to be screened, reflect an increase in provider awareness of such systems; and (3) use of EMR tools for CRC screening increased during this time.

The observed increase in provider perception of the effectiveness of FIT testing is an important shift to note. In published studies across various settings, provider attitudes have traditionally endorsed colonoscopy as the gold standard CRC screening modality.[15,17-24] This shift in clinician attitude may be attributable to the implementation of the STOP CRC program, as well as policy changes around CRC screening becoming an incentivized metric for Oregon's Medicaid program.[9] The latter led to a dramatic change in provider awareness of FIT testing and an overall cultural change within clinics serving Medicaid enrollees to embrace this affordable screening option.[25] This and other contextual factors may explain why we observed few

differences in provider attitudes and beliefs among intervention and usual care clinics.

Notably, implementation of the STOP CRC program was generally led by clinical outreach teams, and the program included no provider-targeted component. Providers were generally unaware or uninvolved in STOP CRC if their clinic system implemented the program using a centralized administrative team. Such processes were often managed and led by administrative staff and nurse managers, with limited impact on the providers as reflected by some of the minimal changes observed in provider attitudes described above. Moreover, the STOP CRC program led the EMR vendor to make population management tools available for all health centers (only the intervention clinics received the customized CRC screening tools), which led to increased awareness and use of EMR tools at all sites.

Our study had some limitations. First, the number of providers who completed surveys at both timepoints was small. Second, the timing of the intervention rollout varied from clinic to clinic. Intervention clinics had the opportunity to rollout anytime between June 2014 through the end of January 2015, matching the time period for baseline survey data collection. Control clinics had the intervention tools available for use beginning August 4, 2015, but implementation occurred anytime between August and December of that year. Additionally, the level of program implementation also differed. Some clinics waited until the end of the year to launch the mailings given competing demands. Some faced challenges related to printing or lab interface issues, thus leading to inadvertent delays in the implementation of the program. One clinic system focused on monthly birthday mailings, while others mailed to as many eligible patients as possible. However, despite the variation in timing and extent of intervention delivery, this qualitative research provided an opportunity to better understand factors that may facilitate successful implementation.

Finally, provider recommendations have been shown in several previous reports to be a key driver of CRC screening across population subgroups,[26] and several evaluations of mailed FIT outreach programs have reported higher FIT completion rates among patients who were mailed a FIT and had a recent clinic visit, compared with patients who had no recent clinic visit.[27] Future research might consider engaging primary care providers as well as outreach staff in efforts to maximize effectiveness of CRC screening programs.

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Declaration of Conflicting Interests

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ORCID iD

Jamie H. Thompson https://orcid.org/0000-0003-3922-4880

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