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Colorectal Cancer Screening Practices of Primary Care Physicians in Washington State

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Background: *Colorectal cancer screening reduces death from colorectal cancer, but screening rates are low. While research has identified barriers to screening from the patient perspective, less research has addressed screening from the physician perspective.*

Methods: *The Washington Comprehensive Cancer Control Partnership conducted a survey of primary care physicians in Washington State to measure their knowledge, attitudes, and practices for colorectal cancer screening of average-risk patients. The survey was mailed to a simple random sample of 700 primary care physicians in Washington State. Sixty-nine percent of the eligible physicians in the sample participated.*

Results: *Most respondents (76%) recommended one or more colorectal cancer screening tests in agreement with American Cancer Society guidelines, and 93% perceived patient anxiety about colorectal cancer screening tests to be a significant barrier to screening. Ninety percent of physicians reported using the fecal occult blood test (FOBT) as a screening test, but most did not report performing any tracking or using any mechanism to encourage their patients to complete and return FOBT kits.*

Conclusions: *These findings suggest three intervention approaches to increase colorectal cancer screening in primary care settings: improve physicians' knowledge about current screening guidelines (especially appropriate age and screening intervals), encourage physicians to strongly recommend screening to patients, and help physicians adopt tracking systems to follow screening to completion.*

Introduction

Colorectal cancer is the second leading cause of cancer death in the United States,[1] but it is also one of the most preventable forms of cancer.[2-4] Screening reduces not only the number of deaths related to colorectal cancer but also the incidence of cancer through the identification of premalignant polyps.[4] Recommended screening strategies for average-risk adults aged 50 years and older include fecal occult blood test (FOBT) annually, flexible sigmoidoscopy every 5 years, a combination of FOBT annually and flexible sigmoidoscopy every 5 years, colonoscopy every 10 years, or double contrast barium enema every 5 years.[5-7]

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Abbreviations used in this paper: FOBT = fecal occult blood test, WCCCP = Washington Comprehensive Cancer Control Partnership, NCI = National Cancer Institute, ACS = American Cancer Society.

Despite the establishment of national screening recommendations as well as evidence of the effectiveness of colorectal cancer screening, much of the eligible population remains unscreened.[8,9] A recent analysis of data from the 2002 Washington State Behavioral Risk Factor Surveillance System showed that only 52% of people aged 50 to 79 years were screened according to guidelines.[10] Substantial literature documents barriers to colorectal cancer screening from the patient perspective.[11-13] However, less research addresses colorectal cancer screening from the physician perspective.[12]

Health care providers are key to every stage of colorectal cancer screening, from recommending the test to patients to providing appropriate follow-up for a positive result. Physicians face a variety of potential barriers to recommending and performing colorectal cancer screening for the majority of their age-appropriate patients. These barriers include confusion over screening guidelines, lack of tracking and reminder systems, inadequate facilities, and costs of screening.[12,14-17] Patients rarely initiate conversations about colorectal cancer screening with their health care providers,[18] so physicians feel little pressure from patients to offer screening. Discussing colorectal cancer screening with a physician strongly predicts screening,[10,19] but physicians may not be motivated to initiate these discussions, either due to the belief

that patients are not interested in colorectal cancer screening[12,20] or due to time constraints and competing acute and chronic care concerns.[21,22]

Primary care physicians are the gateway to colorectal cancer screening.[23,24] Learning more about physicians' current knowledge, attitudes, and practices for colorectal cancer screening is a critical first step to identifying barriers amenable to change and designing interventions to improve colorectal cancer screening rates.

This paper summarizes the results of a survey of primary care physicians in Washington State. The survey was part of a statewide baseline assessment for the Washington Comprehensive Cancer Control Partnership (WCCCP), a statewide coalition funded by the Centers for Disease Control and Prevention and implemented by the Washington State Department of Health. The primary aim of the survey was to assess primary care physicians' colorectal cancer screening knowledge, attitudes, and practices in order to determine future intervention priorities for the WCCCP. Most survey items came from the Survey of Colorectal Cancer Screening Practices in Health Care Organizations conducted by the National Cancer Institute (NCI).[16] Several significant changes have occurred since the NCI survey was conducted in 1999; for example, colorectal cancer screening guidelines have been revised, and Medicare now covers colonoscopy for average-risk patients.[25] For this reason, WCCCP chose to perform a new survey rather than use the 1999 results to inform their baseline assessment.

Methods

Sample

The authors obtained a mailing list of primary care physicians in Washington State from the Washington State Medical Association. This mailing list included physicians from the following specialties: family practice, general practice, internal medicine, and obstetrics/gynecology. The list included names and contact information for 5,125 physicians practicing in Washington State. Power calculations revealed that an initial sample of 700 physicians (assuming a 70% response rate among eligibles) would yield a sufficient number of completed surveys to estimate physicians' screening knowledge, attitudes, and behaviors with confidence intervals (CIs) of +5%. A simple random sample of 700 names was drawn from this list using a random number generator.

Procedures

Gilmore Research Group (GRG), a market research company that conducts quantitative and qualitative research studies, administered the survey in November and December 2004. All physicians in the sample received a notification letter via fax. This letter described the survey and explained that a survey package would arrive the following day in an overnight mail envelope. The survey package included: a cover letter explaining the survey, the survey itself, a check for $50.00 as an incentive to participate, and a prepaid overnight return envelope.

Physicians could complete the survey by either using the paper copy mailed to them or answering the survey online (the cover letter included access information). GRG mailed reminder postcards to physicians who had not yet completed the survey at 2 and 4 weeks post the initial mailing. Physicians who had not completed the survey after a month received telephone follow-up. The procedures and survey were reviewed by the Washington State Institutional Review Board prior to fielding the survey.

Survey Questionnaire

The survey questionnaire included four sections: (1) recommendations for colorectal cancer screening, (2) colorectal cancer screening performance and follow-up, (3) practice and personal characteristics, and (4) prostate cancer screening practices (not relevant to this paper and will not be described further). Most of the items were from the NCI's Survey of Colorectal Cancer Screening Practices (available at http://healthservices.cancer.gov/surveys/colorectal/prim0520.pdf).[16] The WCCCP Colorectal Cancer Task Force (which includes cancer survivors, academics, physicians, and members of community organizations) provided feedback on early drafts of the survey questionnaire and suggested additional items. Two new items were added to the survey to assess (1) physicians' perceived importance of colorectal cancer screening compared with other cancer sites and (2) physicians' practices for tracking endoscopy completion. GRG pretested the survey with four physicians. They all found the survey questionnaire easy to understand and were able to complete it in 10 to 15 minutes. Their comments were incorporated into the final version of the survey questionnaire (available from the authors on request).

The survey questionnaire measured physicians' recommendations (including recommended starting age and testing interval) for screening with FOBT, flexible sigmoidoscopy, colonoscopy, and double-contrast barium enema among asymptomatic, average-risk patients. Physicians' responses were compared to American Cancer Society (ACS) guidelines.[6] Physicians recommending each test were counted as being in agreement with guidelines if they indicated 50 years as the appropriate starting age and gave the recommended test interval.

For each screening modality, the survey questionnaire asked physicians whether they performed the test and what follow-up they recommended for a positive result. Physicians were asked whether they used any mechanism to encourage FOBT kit return and if they used any mechanism to ensure that patients referred to other providers for endoscopy completed the test. For both questions, physicians who used such

mechanisms were asked to identify the mechanism(s) used in their practice. The survey questionnaire also measured the perceived importance of colorectal cancer screening as well as perceived barriers to screening.

Statistical Analyses

Descriptive statistics were calculated to characterize physicians' colorectal cancer screening knowledge, attitudes, and practices. These analyses were initially stratified by primary care specialty, with family and general practice combined; few respondents identified general practice as their specialty (analyses were replicated dropping general practice from family practice, and results were similar). Analyses revealed few differences by specialty, so the tables presented here show results for the total sample, and significant differences by specialty are noted in the text. Multivariate logistic regressions tested whether physicians' characteristics predicted their use of tracking methods to ensure that colorectal cancer screening tests were completed.

Results

Response Rate

Of the 700 physicians in the sample, 92 (13%) were not eligible to participate (most commonly due to not having an active practice or not self-identifying as a primary care physician) and 53 (8%) were not reachable via the contact information provided in the mailing list. Of the 555 remaining physicians, 397 completed the survey (family/general practice = 229, internal medicine = 116, obstetrics/gynecology = 52; Table 1), 11 refused, and 147 did not respond, resulting in a response rate of 69%, assuming that all nonresponders were eligible (dividing nonresponders into eligible and ineligible categories resulted in a 74% response rate).[26] Most of the participants (351; 88%) completed the paper survey. The remaining 46 participants (12%) completed the survey online (analyses revealed few differences in physician responses by survey mode).

Physician Characteristics and Practice Settings

Table 1 summarizes physician characteristics. Most of the participants were white (84%), were male (68%), and received their degrees more than 10 years ago (86%). Family practice physicians and obstetrician/gynecologists were more likely than internal medicine physicians to practice in single-specialty settings ($P<.01$). Most physicians (83%) practiced in urban locations.

Perceived Importance of Colorectal Cancer Screening

Almost all physicians specializing in family/general practice and internal medicine rated colorectal cancer screening as very important (91% and 94%, respectively; data not shown). Obstetrician/gynecologists were significantly less likely to rate colorectal cancer screening as very important (65%, $\chi^2_2 = 15.45$, 2 *df*, $P<.01$). Physicians' personal behavior also indicated they perceived that colorectal cancer screening is important. The majority of physicians over 50 years of age reported that they had been screened for colorectal cancer (80%), most commonly with FOBT (54%) and colonoscopy (47%).

Physician Screening Recommendations

Table 2 summarizes physicians' reported colorectal cancer screening recommendations for average-risk patients. Most physicians recommended FOBT and colonoscopy, but only about half recommended these tests in accordance with ACS guidelines for starting age and test interval for average-risk patients. Nearly a third of physicians (31%) recommended FOBT before age 50 years for average-risk patients. In contrast, most physicians not in alignment with colonoscopy guide-

Table 1. — Physician Characteristics and Practice Settings (N = 397)

	%	(n)
Physician specialty		
Family/General Practice	57.68	(229)
Internal Medicine	27.22	(116)
Obstetrics/Gynecology	11.10	(52)
Gender		
Female	31.82	(126)
Male	68.18	(270)
Hispanic/Latino descent		
Yes	2.02	(8)
No	97.98	(389)
Race/Ethnicity		
American Indian/Alaska Native	1.03	(4)
Asian	10.26	(40)
African American	1.54	(6)
Pacific Islander	1.03	(5)
White	84.36	(329)
Other	2.56	(10)
Time since completing medical school		
Less than 10 yrs	13.67	(54)
10–19 yrs	32.15	(127)
20–29 yrs	33.92	(134)
30 or more yrs	20.25	(80)
Ever personally screened for colorectal cancer		
FOBT	53.93	(103)
Flexible sigmoidoscopy	16.75	(32)
Colonoscopy	46.60	(89)
Double contrast barium enema	2.62	(5)
Not screened	19.90	(38)
Type of setting		
Single specialty	64.96	(254)
Multispecialty	35.04	(137)
Practice location		
Urban	82.87	(329)
Rural	17.13	(68)

Colorectal cancer screening rates are only for physicians aged 50 years and over. Physicians could indicate more than one type of screening received, so screening rates sum to more than 100%. For some variables, missing data resulted in response category numbers totaling less than the total sample of 397.

lines recommended beginning the test later than 50 years of age. Obstetrician/gynecologists recommended colonoscopy at a similar rate to other providers but were significantly less likely to recommend colonoscopy in agreement with guidelines (34% compared with 57% for family practice physicians and 64% for internal medicine physicians; $\chi^2_2 = 11.23, 2\ df, P<.01$). The majority of physicians (76% overall) recommended at least one method of colorectal cancer screening in accordance with ACS guidelines.

Table 2. — Physician Colorectal Cancer Screening Recommendations and Practices

	%	95% CI
Screening Recommendations		
Recommending FOBT	**92.54**	**89.46 – 94.78**
Recommended starting age		
<50	30.83	25.27 – 34.73
50	68.61	63.18 – 72.82
>50	0	–
Recommended test frequency		
More than once per year	2.50	0.89 – 4.11
Every year	85.28	81.31 – 88.69
Less than once per year	10.28	6.90 – 13.10
% in agreement with ACS guidelines	58.06	52.87 – 63.07
Recommending Flexible Sigmoidoscopy	**55.91**	**50.86 – 60.84**
Recommended starting age		
<50	7.51	3.96 – 11.04
50	86.38	81.34 – 90.66
>50	5.16	2.15 – 8.05
Recommended test frequency		
More than every 5 years	20.66	14.63 – 25.37
Every 5 years	64.79	57.55 – 70.45
Less than every 5 years	11.74	6.80 – 15.20
% in agreement with ACS guidelines	48.83	42.15 – 55.55
Recommending Colonoscopy	**88.04**	**84.43 – 90.91**
Recommended starting age		
<50	2.02	0.52 – 3.48
50	88.44	84.58 – 91.42
>50	7.51	4.72 – 10.28
Recommended test frequency		
More than every 10 years	34.39	29.01 – 38.99
Every 10 years	61.85	55.86 – 66.14
Less than every 10 years	0	–
% in agreement with ACS guidelines*	56.65	51.35 – 61.80
In Agreement With ACS Guidelines for One or More Tests (CI)	**76.32**	**71.87 – 80.26**
Screening Practices		
Order or Perform FOBT	**90.38**	**87.04 – 92.93**
Initial follow-up for positive FOBT		
Repeat FOBT	25.21	20.93 – 29.47
Colonoscopy	89.64	84.64 – 91.36
Double contrast barium enema	8.12	5.20 – 10.80
Other	6.16	3.63 – 8.57
Perform Flexible Sigmoidoscopy*	**20.31**	**16.59 – 24.62**
Action taken if small polyp		
Take biopsy	73.08	62.15 – 81.77
Refer for excision	26.92	18.23 – 37.85
Initial follow-up for positive flexible sigmoidoscopy		
FOBT	5.06	0.19 – 9.81
Colonoscopy	98.73	94.91 – 100.00
Double contrast barium enema	1.27	0.00 – 3.60
Perform Colonoscopy*	**3.82**	**2.31 – 6.25**
Initial follow-up for positive colonoscopy		
Repeat colonoscopy to monitor polyps	86.67	68.44 – 100.00

* Indicates $P<.05$ for physician specialty (obstetrician/gynecologists were significantly less likely than other specialists to recommend colonoscopy in accordance with ACS guidelines, and zero obstetrician/gynecologists reported performing flexible sigmoidoscopy or colonoscopy). Physicians were counted as in agreement with FOBT guidelines if they recommended FOBT, selected 50 years as starting age and 1 year as appropriate screening interval. Physicians were counted as in agreement with flexible sigmoidoscopy guidelines if they recommended flexible sigmoidoscopy, selected 50 years as starting age and 5 years as appropriate screening interval. Physicians were counted as in agreement with colonoscopy guidelines if they selected 50 years as starting age and 10 years as appropriate screening interval. Columns for recommended age and test frequency total less than 100% because of missing data (a few physicians who reported recommending the tests did not answer questions about starting age and frequency). Columns for initial follow-up for positive FOBT and flexible sigmoidoscopy total more than 100% because physicians could select multiple choices.

Physician Screening and Follow-up Practices

Table 2 summarizes physicians' performance of colorectal cancer screening tests and recommendations for follow-up tests for abnormal results. Almost all of the physicians (90%) reported ordering or performing FOBT to screen for colorectal cancer. Physicians could indicate one or more strategies to follow a positive FOBT. Although most physicians (90%) indicated that they would refer for a colonoscopy (the recommended follow-up test), a significant minority (25% overall) recommended repeating FOBT as a follow-up.

Relatively few primary care physicians performed flexible sigmoidoscopy (20%). Most of these physicians reported that they would take a biopsy if they found a small polyp during the test. However, 27% reported that they would make a referral to excise the polyp (requiring patients to undergo a second medical visit and procedure). Almost all physicians performing flexible sigmoidoscopy correctly identified colonoscopy as the proper follow-up for a positive result. As expected, few primary care physicians (4%) performed colonoscopy. None of the obstetrician/ gynecologists reported performing flexible sigmoidoscopy or colonoscopy.

Most physicians (63%) did not use mechanisms to encourage patients to return FOBT kits (Table 3). A logistic regression was performed to determine whether physician characteristics (specialty, gender, urban vs rural practice location, single-specialty vs multispecialty setting, and time since completing medical school) were associated with use of any mechanism to encourage return of FOBT kits. Physicians were significantly more likely to use a mechanism to encourage return of FOBT kits if they practiced in single-specialty clinics (adjusted overall response [OR] = 1.76, 95% CI 1.05 to 2.95), in rural areas (adjusted OR = 1.94, 95% CI 1.09 to 3.44), or if they had finished medical school 20 or more years ago (adjusted OR = 2.22, 95% CI 1.05 to 4.71) ($P<.05$ in all areas). The majority of physicians who reported using mechanisms used chart reminders for discussion at the patient's next visit.

Table 3. — Tracking FOBT Completion and Referred Endoscopy

	%	95% CI
Physicians ordering or performing FOBT using mechanism to ensure kit return	**36.54**	**31.66 – 41.72**
What is the mechanism used?		
Telephone call	25.78	17.53 – 32.47
Mail reminder	25.00	16.63 – 31.37
Chart reminder	53.91	44.39 – 61.61
Other	20.31	13.10 – 26.90
Physicians using mechanism to ensure referred endoscopy completed	**64.69**	**59.78 – 69.31**
What is the mechanism used?		
Reminder telephone call	18.33	13.25 – 22.75
Reminder by mail	13.15	8.84 – 17.16
Make appointment for patient	50.20	43.81 – 56.19
Results returned to office	72.51	66.45 – 77.55
Office notified if not completed	13.15	8.84 – 17.16
Discuss at next visit	3.19	0.96 – 5.24
Other	11.95	7.13 – 14.87

Columns for mechanism type total more than 100% because physicians could select multiple choices. "Other" mechanisms mainly included notification from the specialist if patient does not complete the test, and electronic medical records.

Most physicians (65%) reported using mechanisms to track endoscopy when they refer patients to another provider. A logistic regression similar to that described above was performed to determine whether physician characteristics were associated with using any mechanism to track referred endoscopy. The only significant predictor was time since completing medical school; physicians who had graduated from medical school 20 or more years ago were more likely to track referred endoscopy (adjusted OR = 3.54, 95% CI 1.77 to 7.08, $P<.01$). Auxiliary analyses were conducted to determine whether personal screening status or knowledge of colorectal cancer screening guidelines explained the finding that physicians practicing 20 or more years were more likely to use tracking mechanisms for FOBT and endoscopy; both factors were nonsignificant predictors of using tracking mechanisms.

Perceived Barriers to Colorectal Cancer Screening

In general, physicians were more likely to endorse patient factors as barriers to colorectal cancer screening than physician or system factors (Table 4). More than 85% of physicians endorsed three of the four patient factors on the survey questionnaire as major or minor barriers to screening. Almost all physicians identified patient anxiety or embarrassment about screening tests as a major (61%) or minor barrier (33%). Similarly, most physicians perceived patient lack of awareness of screening or colorectal cancer as a health threat as a major barrier (42%) or a minor barrier (50%). Of the system barriers, physicians were most likely to identify screening costs and insurance coverage as a major barrier to screening (50% as a major barrier and an additional 34% as a minor barrier). Most physicians did not endorse other system factors as major barriers to screening.

Discussion

A survey of primary care physicians in Washington State described physicians' current knowledge, attitudes, and practices about colorectal cancer screening and also identified key areas for intervention. Almost all of the physicians surveyed recommended colorectal cancer screening to their average-risk patients and perceived colorectal cancer screening as very important. Obstetrician/gynecologists were less likely than other primary care physicians to perceive colorectal cancer screening as very important. Our survey and the NCI survey[16] conducted 5 years earlier revealed that obstetrician/gynecologists were less likely to report best

Table 4. — Physician Perceptions of Barriers to Colorectal Cancer Screening

	Major Barrier (%)	Minor Barrier (%)	Not a Barrier (%)
Patient Barriers			
Fear of finding cancer	19.80	68.78	11.42
Believes screening not effective	3.31	42.75	53.94
Embarrassment/anxiety about tests	60.97	33.16	5.82
Unaware of screening or of colorectal cancer as a health threat	41.98	49.62	8.40
Provider/System Barriers			
Screening costs too much/insurance does not cover	49.87	33.59	16.54
Doctors do not actively recommend screening	19.39	45.41	35.20
Shortage of doctors to do screening other than FOBT	16.79	42.24	40.97
Shortage of doctors to conduct follow-up with invasive endoscopic procedures	17.78	37.37	44.85
Other Barriers	10.43	–	–

Most "other" barriers elaborated on patient fear/anxiety of screening tests; a few physicians mentioned time constraints (both during office visit and in patients' lives) and cost barriers.

practices than physicians in family/general practice and internal medicine. Many women receive primary care from obstetrician/gynecologists,[27] so improving these physicians' perceived importance and practice of colorectal cancer screening could improve women's screening rates.[28]

Physicians' recommendations about endoscopy have changed in the 5 years separating the NCI survey and our survey. Physicians in the present survey were more likely to recommend colonoscopy (88%) and less likely to recommend flexible sigmoidoscopy (56%) than physicians in the NCI survey 5 years earlier (in which 34% to 49% recommended colonoscopy and 61% to 82% recommended flexible sigmoidoscopy, depending on specialty).[16] Colonoscopy rates have increased in recent years,[29,30] so this finding likely reflects actual practice changes.

Physicians' descriptions of how they practice colorectal cancer screening revealed three major opportunities for improvement.

First, primary care providers need updated guideline information, particularly for the starting age and screening intervals for different tests. Colorectal cancer screening guidelines used to vary across organizations, but now there is good agreement in guidelines across professional societies.[5-7] Although the majority of physicians in this study (76%) offered at least one colorectal cancer screening test in accordance with ACS guidelines, only about half of the physicians who recommended FOBT and colonoscopy did so in accordance with these guidelines. This finding has two important implications. Physicians who recommend only one test limit their patients' screening options, which may make them less likely to choose to undergo screening,[11] although evidence about the effect of choice on patient screening behavior is mixed.[31] Additionally, 24% of primary care physicians are not offering any colorectal cancer screening tests in agreement with ACS guidelines. The fact that 25% of physicians also indicated that they would repeat FOBT as a follow-up for a positive FOBT indicates that education about guidelines should also include information about appropriate follow-up for positive test results.

Second, educating physicians about the power of their recommendations to affect patient behavior may encourage physicians to strongly recommend colorectal cancer screening to more of their patients. Many patients will follow their physician's recommendation to be screened, particularly if they perceive that it is a strong recommendation.[32] Physicians' perceptions of the patients' barriers to colorectal cancer screening indicate an additional intervention target. Physicians were more likely to endorse patient anxiety and embarrassment about screening tests as a major barrier to colorectal cancer screening than any other barrier. This could discourage physicians from trying to improve clinical practices for colorectal cancer screening. Yet patient surveys suggest that this anxiety is not a major barrier for the majority of unscreened patients; lack of awareness and lack of physician recommendation are the barriers most frequently cited by patients.[10,12] Most physicians in this survey also perceived lack of patient awareness as a barrier; strongly recommending colorectal cancer screening to patients is one way to raise awareness.

Third, helping physicians adopt a system that encourages patients to complete and return FOBT kits would improve screening rates.[33] Patients can get "lost" at any of the stages of colorectal cancer screening (eg, completing and returning FOBT kits, completing endoscopy[34]). One of the most common gaps occurs when patients do not complete and return FOBT kits.[11,35] Relatively few physicians used any tracking mechanism to ensure that home FOBT kits are returned. Several approaches that encourage patients to use FOBT home kits show promise, such as provid-

ing education by primary care nurses,[35] sending reminder letters signed by the primary care provider,[36] and mailing the FOBT kit prior to a primary care visit.[37] Physicians were more likely to use mechanisms to ensure that patients completed referred endoscopy tests with another provider. Older physicians (those practicing for 20 years or more) were most likely to report using mechanisms to track screening. It is not clear from the survey data why older physicians were more likely to use tracking mechanisms, but this finding suggests that younger physicians might especially benefit from interventions to improve tracking.

Strengths and Limitations

WCCCP successfully surveyed a representative sample of primary care physicians in Washington State and achieved a high response rate. WCCCP then used the survey results to solicit interventions by clinical and community-based partner organizations to improve physician knowledge of screening guidelines and discussion of cancer screening during office visits and also to improve follow-up of FOBT kit return and referred endoscopy. Physician surveys conducted in other states have identified both similar and different colorectal cancer screening needs in primary care settings.[38] This variability in findings indicates the value of using local data to set intervention priorities. However, the physician sample in this survey was demographically similar to the sample in the NCI survey (for example, similar proportions were over 50 years of age and practiced in multispecialty settings), so the findings from this survey may generalize to physicians practicing in other states.

This survey had two key limitations. First, the obstetrician/gynecologist findings suggest that this group of physicians would especially benefit from interventions to improve their colorectal cancer screening practices, but the findings are based on only 52 physicians and may not generalize to all obstetrician/gynecologists in Washington. Second, the survey needed to be as brief as possible to maximize the response rate, so some important questions were not included. For example, the survey did not include questions about screening practices for high-risk patients or separate questions about the use of office-based FOBT to clearly distinguish office-based FOBT (which is not recommended for colorectal cancer screening) from the use of home kits. Findings from other physician surveys indicate that there are often gaps in physician knowledge in these areas.[15-17]

Conclusions

The primary care physicians surveyed were aware of the importance of colorectal cancer screening and recommended one or more colorectal cancer screening tests to their average-risk patients. Therefore, the task at hand is to help physicians implement colorectal cancer screening more effectively. Three interventions that should improve primary care physicians' colorectal cancer screening rates are (1) educate primary care physicians about screening guidelines (eg, starting age, test intervals) for each screening test, (2) encourage physicians to discuss colorectal cancer screening and inform them that most patients identify lack of awareness or physician recommendation as the reason they have not been screened for colorectal cancer, and (3) improve physicians' capacity to track and follow colorectal cancer screening to completion.[10,12] The last intervention may be the most challenging to implement but may also result in the greatest change.[33] In the absence of office systems that compensate for the time constraints and demands inherent to the primary care setting, physician education and encouragement alone are unlikely to significantly improve colorectal cancer screening rates.[39]

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