

Colorectal Cancer Screening

Survey Report

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Prepared for
Michigan Association of Health Plans Foundation

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Introduction and Methodology

Colorectal cancer is the second leading cancer killer in the United States. According to the American Cancer Society, the disease was expected to cause about 56,290 deaths in the United States in 2005. During the same year, some 104,950 new cases of colon cancer and 40,340 new cases of rectal cancer were expected to be diagnosed. Fortunately, colorectal cancer can be effectively treated when it is found early. The five-year relative survival rate is greater than 90 percent under these circumstances, and the ACS estimates there are around one million colorectal cancer survivors in the United States today. The key is early detection, through one or more of four screening procedures. Unfortunately, screening rates are low and less than 40 percent of colorectal cancers are found early.

Why should screening rates be low? What can be done to increase them? Which populations tend to have higher rates of screening, and which tend to have lower ones? What barriers to screening can be identified? These are the central questions the Michigan Association of Health Plans Foundation asked Public Sector Consultants to answer. To answer them, PSC has conducted a study of attitudes and behaviors related to screening for colorectal cancer among the at-risk participants (those aged 50 and older) in six of the Michigan Association of Health Plans (MAHP) member plans.

The study is based on a survey of 3,235 Michigan adults aged 50 and older, selected randomly from lists of participants in six MAHP member plans. Selected participants were mailed a pen-and-pencil questionnaire (see the appendix), which they returned to the plans for coding into an Excel file. Responses were received from October to December 2005. The Excel file was imported for analysis into SPSS. The survey results have not been weighted. The sampling error (margin of error) associated with a survey of this size is ± 1.7 percent at the 95 percent confidence level. In theory, this means that in 19 cases out of 20, the results based on such a sample will differ by no more than 1.7 percentage points in either direction from what would have been obtained by seeking out all persons in the state over the age of 50. For smaller subgroups, the margin of sampling error is larger.

Respondents were not asked to disclose whether they are survivors of colorectal cancer. It is likely that a small number of the respondents are survivors.¹

The term “screening” is often used to refer to any procedure to detect cancer in patients who are asymptomatic. For purposes of this study, however, symptoms were included as a reason or motivation for having colorectal cancer screening done.

¹ The ACS estimates that there are one million colorectal cancer survivors in the United States today. There are about 77 million Americans aged 50 or older. Assuming that all survivors are aged 50 or older, about one respondent in 77 could be expected to be a survivor, or a total of about 40 in the survey sample (to one significant digit).

Major Findings

- Whites are more likely to have been screened than blacks, and possibly Hispanics and Native Americans. When schooling is controlled for, however, the difference largely disappears.
- Gender and age play very small roles in decisions on obtaining screening.
- Medical history, including cancer or colon disease in the family and cancer or colon disease in the individual, has a very small effect on who seeks screening and who does not.
- Those with commercial insurance coverage are slightly more likely to be screened than those with Medicaid coverage, but when schooling is controlled for, the difference largely disappears.
- Those who are aware of the risk factors for colorectal cancer, those who have received information about colorectal cancer, and those who know someone who has been screened are more likely to seek screening than are those who do not.
- Nearly two-thirds (65 percent) of those who have been screened say they regard screening as routine testing for someone their age. More than half (55 percent) say that screening was recommended by a provider. About one in five (19 percent) seeks screening as a result of noticing bleeding or other problems.
- Risk factors for colorectal cancer, such as a family history of cancer or colon disease, and other factors such as knowing someone who has colorectal cancer, knowing someone who has had screening, or feeling peace of mind from obtaining screening, appear to be secondary reasons for seeking screening.
- The survey offered five general reasons for avoiding screening. Almost half (47 percent) of the never-screened say their provider has not recommended it. Nearly as many (44 percent) say they do not like some aspect of it (discomfort, embarrassment). Three out of eight (38 percent) say they find it inconvenient (time off work, too much preparation). Almost a third (30 percent) say they just do not think they need it. Only a few (5 percent) say their insurance will not pay for it.

Trend Data: *Who Is Screened, Who Is Not*

The tendency to be screened or not varies somewhat with certain demographic traits, but not others. In addition to demographic traits, the prevalence of screening is related to the type of plan in which a respondent is enrolled, and to some aspects of the respondent's health history. Before discussing these effects, we provide an operational definition of "screened respondent."

OPERATIONAL DEFINITION OF "SCREENED RESPONDENT"

For purposes of our analysis, a respondent is classified as "screened" if he or she has undergone **any** of the following procedures within the stated periods, as recommended by the U.S. Preventive Services Task Force of the Centers for Disease Control:

- A fecal occult blood test (FOBT) within the previous year
- A double contrast barium enema (DCBE) within the previous five years
- A flexible sigmoidoscopy within the previous five years
- A colonoscopy within the previous ten years

There are two ways to determine whether a respondent meets this definition. For the first approach, the respondents indicated on the questionnaire whether they had had any of the four procedures within the recommended periods. This gives a "participant-defined" classification. For the second approach, representatives at the several MAHP plans examined the respondents' medical records when the questionnaires were returned, and coded them as screened or not screened. This gives a "plan-defined" classification. The two approaches yielded somewhat different results.

- Using the participant-defined classification, 74 percent of the respondents are screened and 26 percent are not screened.
- Using the plan-defined classification, 59 percent of the respondents are screened and 41 percent are not screened.
- Matching the two sets of respondents (screened and unscreened under both approaches), we may classify 52 percent of respondents as screened and 19 percent as unscreened. Of the remaining 29 percent, 7 percent are classified as screened by the plans but not the participants, and 22 percent are classified as screened by the participants but not the plans.²

² Several factors could account for the discrepancy between plan-defined and participant-defined screening numbers. For example, it seems likely that some participants who report being screened do not accurately remember when the screening took place and do not in fact meet the operational definition. The size of this effect is impossible to estimate. A countervailing effect seems to be operating as well: note the 7-point differential between the 59 percent that the plans identify as screened and the 52 percent that both approaches say are screened. Since there is little likelihood that records would indicate a respondent was screened if this were not the case, these respondents have evidently been screened but either do not realize it or do not remember it. Yet again, some respondents are doubtless correct in saying they were screened

For comparison, in 2003 the Centers for Disease Control reported that as of 2001, 53.1 percent (± 0.6 percent) of U.S. adults aged 50 or older had had either a fecal occult blood test or lower endoscopy within the recommended interval.³ In Michigan the reported rate was in the band from 60.1 to 65.3 percent. The CDC estimates are based on the Behavioral Risk Factor Surveillance System (BRFSS), which relies on self-reported accounts of behavior, making the estimates comparable to the participant-defined data of the present study. The fact that the CDC study found on the order of 9–14 points fewer screened respondents than the present study finds (see Exhibit 1) may be attributable to the fact that the BRFSS reaches uninsured subjects as well as insured ones, whereas the present study reached only insured subjects, and to the fact that the BRFSS does not ask about double contrast barium enemas. Insurance certainly plays some role in the decision to obtain screening, as will be discussed below. It is also conceivable that the screening rate has increased in Michigan in the years since the CDC study data were collected.

EXHIBIT 1
Screening Classification, by Definition Method

Definition Used	Screened	Unscreened
Plan-defined	59%	41%
Participant-defined	74	26
Both plan- and participant-defined	52	19
CDC BRFSS study	60–65	35–40

SOURCE: Public Sector Consultants Inc. and Centers for Disease Control.

In this report we have adopted the plan-defined classification of screened vs. unscreened as being the more conservative of the two and the one that can be objectively verified by medical records. In this section, all references to screened participants mean plan-defined as screened.

EFFECT OF DEMOGRAPHIC FACTORS ON SCREENING

Gender

Women are slightly more likely to have been screened than men (see Exhibit 2), although the difference would not generally be regarded as statistically significant.⁴

even though the plans do not bear this out, since records may not be completely up to date as participants move from plan to plan.

³ “Colorectal Cancer Test Use Among Persons ≥ 50 Years—United States, 2001,” *MMWR*, March 14, 2003; 193–96 (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5210a2.htm>).

⁴ $p = .095$. It would require a sample of about 10,000 to establish that a difference of the magnitude found in this study is statistically significant.

EXHIBIT 2 Screening by Gender

Classification	Males		Females		Total	
	Number	%	Number	%	Number	%
Screened	709	58%	1,118	60%	1,827	59%
Unscreened	517	42%	737	40%	1,254	41%
Total	1,226	100%	1,855	100%	3,081	100%

SOURCE: Public Sector Consultants Inc.

Age

Screening is age related, but not linearly.⁵ The screening rate is lowest among the youngest and also, apparently, the oldest members of the at-risk population; it is highest among those in the middle. We say “apparently” because the small number of respondents in the 75 and older category ($n = 16$) suggests the findings for this category must be regarded as provisional (see Exhibit 3).

EXHIBIT 3 Screening by Age

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Age 50–54	249	51%	239	49%	488	100%
Age 55–64	1,051	61	678	39	1,729	100
Age 65–74	184	60	125	40	309	100
Age 75 and older	16	44	20	56	36	100
Total	1,500	59%	1,062	41%	2,562	100%

SOURCE: Public Sector Consultants Inc.

Race

Whites are most likely to have been screened (see Exhibit 4).⁶

EXHIBIT 4 Screening by Race

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Black	127	47%	143	53%	270	100%
White	1,576	61	1,009	39	2,585	100
Hispanic	29	49	30	31	59	100
Asian	20	53	18	47	38	100
Native American	26	46	30	54	56	100

⁵ $p \chi^2 = .000$

⁶ $p F = .000$.

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Other	27	60	18	40	35	100
Total	1,805	59%	1,248	41%	3,053	100%

SOURCE: Public Sector Consultants Inc.

- Note in Exhibit 4 that the number of Hispanics, Asians, Native Americans, and “others,” is small. The trend data for these races should therefore be regarded as provisional.
- Whites are certainly more likely to have been screened than blacks. The data are equivocal as to whether whites are more likely to have been screened than Native Americans (and even less convincing as to a difference between whites and Hispanics), but there is no statistically significant difference between whites and Asians or whites and “other.”⁷ No other racial comparison is statistically significant.

Plan Type

Respondents enrolled in commercial plans are more likely to have been screened than are those in enrolled in Medicaid plans (see Exhibit 5).⁸

EXHIBIT 5 Screening by Plan Type

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Commercial plan	1,517	62%	932	38%	2,449	100%
Medicaid plan	389	50	387	50	786	100
Total	1,906	59%	1,329	41%	3,235	100%

SOURCE: Public Sector Consultants Inc.

Schooling

Those with greater amounts of schooling, especially those with college education, are more likely to have been screened than those with less schooling (see Exhibit 6).⁹

EXHIBIT 6 Screening by Schooling

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Less than high school	129	50%	129	50%	258	100%
High school graduate	660	57	502	43	1,162	100
Post high school	421	60	282	40	703	100

⁷ ANOVA post hoc tests, equal variances assumed, yield $p = .028$ for whites vs. Native Americans and $p = .067$ for whites vs. Hispanics. If equal variances are not assumed, $p = .428$ for whites vs. Native Americans and $p = .713$ for whites vs. Hispanics.

⁸ $p \chi^2 = .000$.

⁹ $p F = .000$.

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Four-year college	257	66	135	34	392	100
Graduate or professional degree	327	64	182	36	509	100
Total	1,794	59%	1,230	41%	3,024	100%

SOURCE: Public Sector Consultants Inc.

- Those with either a four-year college degree or a graduate or professional degree are more likely to have been screened than are those with high school diplomas, or less education, but other intergroup differences shown in the table are not statistically significant.
- If we consider that there is a causal relationship such that more schooling leads to more screening, and we take 50 percent as the base rate for screening (since it is achieved with the minimum in schooling), then each year of schooling past the middle of high school is “worth” on average about a two-percentage-point gain in screened people once they enter the at-risk population.

Relationship Between Schooling and Race, and Schooling and Plan Type

In this study white respondents have significantly more schooling than blacks, Hispanics, Native Americans, and racial “others,” although less than Asians.¹⁰ Similarly, schooling is related to plan type; those with greater amounts of schooling are more likely to be covered by commercial plans, and those with less schooling are more likely to be covered by Medicaid plans. Controlling for schooling shows that much of the effect on screening that appears to be related to race and plan type is in fact related to schooling.

- With the exception of high school graduates, there are no significant differences among the racial groups when people of equal schooling are compared.
- In the case of the high school graduates, whites are most likely to be screened (60 percent), followed by “others” (54 percent screened), Native Americans (49 percent), Asians (40 percent), blacks (39 percent), and Hispanics (35 percent).
- With the exception of high school graduates, there are no significant differences among participants in the two different plan types when people of equal schooling are compared.
- In the case of the high school graduates, those in commercial plans are more likely to be screened (60 percent) than are those in Medicaid plans (48 percent).

EFFECT OF INFORMATION ON SCREENING

Knowledge about Risk

The more one knows about the risk factors for colorectal cancer, the more likely one is to have been screened (see Exhibit 7).

¹⁰ $p F = .000$.

EXHIBIT 7
Screening by Knowledge about Risk Factors

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Know a lot	539	67%	266	33%	805	100%
Know a little	1,019	59	707	41	1,726	100
Know nothing	261	49	276	51	537	100
Total	1,819	59%	1,241	41%	3,068	100%

SOURCE: Public Sector Consultants Inc.

- Knowledge about risk factors and screening are positively correlated, with $r = .121$. This would generally be considered a small effect, equivalent to increasing the base odds in favor of being screened by about 28 percent.¹¹
- It should be kept in mind that the data show only a correlation between knowledge about risk factors and screening, not a causal relationship. It is possible that a third factor such as an overall interest in and concern for health, which some people have more of and others less, leads those who have it to both seek out information about colorectal cancer risk factors and obtain screening.

Receipt of Information about Colorectal Cancer

Those who recall having received information about colorectal cancer are more likely to have been screened than are those who have not received it, or do not recall whether they have or not (see Exhibit 8).

EXHIBIT 8
Screening by Receipt of Information about Colorectal Cancer

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Received information	1,140	65%	608	35%	1,748	100%
Did not receive information	406	49	421	51	827	100
Don't remember	219	54	183	46	402	100
Total	1,765	59%	1,212	41%	2,977	100%

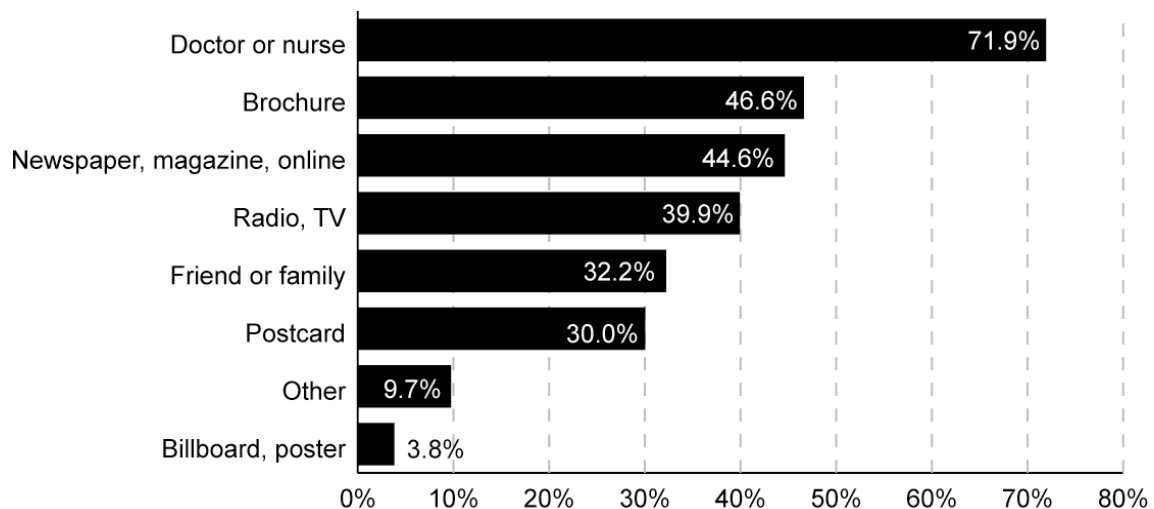
SOURCE: Public Sector Consultants Inc.

¹¹ This follows from the definition of Pearson's r . If there were no relationship between knowledge and screening, the likelihood of being screened would be 50 percent, as would the likelihood of not being screened, whether or not knowledge was present. Any relationship between the two that may exist implies some other likelihood than .50 "for" and .50 "against." Pearson's r measures that, and the amount by which the greater likelihood differs from the smaller one can be taken as the increase over the base odds (i.e., no odds at all) that are associated with the relationship. In this case, $r = .121$ implies a "shift" from 50:50 odds to 43.95:56.05 odds ($.5605 - .121 = .4395$); 56.05 is about a 28 percent larger value than 43.95.

- As we would expect, receipt of information is closely associated with knowledge about risk factors. Among those who say they know a lot about the risk factors, 91 percent recall having received information, and conversely, among those who say they know nothing at all about the risk factors, 63 percent say they have never received information. There are few who say they know a lot but have never received information (7 percent), and likewise few who say they know nothing despite having received information (9 percent).
- Another way to say this is to note that receipt of information and knowledge about risk factors are strongly positively correlated, with $r = .494$. To a large extent, the two variables are apparently measuring the same thing.

Respondents could mention having received any or all of eight different sources of information. Exhibit 9 shows that by far the most prevalent source is doctors and nurses. The mean number of information sources received is 2.8; the median is 3. The specific information source seems to have very little effect on screening (see Exhibit 10).

EXHIBIT 9
Sources of Information about Colorectal Cancer



SOURCE: Public Sector Consultants Inc.
NOTE: Asked only of those who received information.

EXHIBIT 10
Screening by Source of Information about Colorectal Cancer

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Postcard	365	65%	193	35%	558	100%
Brochure	561	65	305	35	866	100
Doctor or nurse	917	69	418	31	1,335	100
Friend or family	409	68	189	32	598	100
Radio or TV	487	66	254	34	741	100
Newspaper, magazine, online	537	65	291	35	828	100
Billboard, poster	43	61	27	39	70	100
Other	117	65	64	35	181	100
Total	1,203	65%	655	35%	1,858	100%

SOURCE: Public Sector Consultants Inc.

NOTE: Asked only of those who received information.

Acquaintance with Someone Who Has Been Screened

Those who know someone who has been screened for colorectal cancer are more likely to have been screened than those who do not (see Exhibit 11).

EXHIBIT 11
Screening by Acquaintance with a Screened Person

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Know someone who has been screened	1,571	63%	928	37%	2,499	100%
Do not know someone who has been screened	265	45	324	55	589	100
Total	1,836	60%	1,252	41%	3,088	100%

SOURCE: Public Sector Consultants Inc.

- Among those who know someone who has been screened, the person is most likely to be a friend, mentioned by 58 percent, or a spouse, mentioned by 48 percent. Thirty-one percent mentioned a sibling, 29 percent a parent, 11 percent an aunt or uncle, 8 percent a cousin, and 3 percent a grandparent. Some 17 percent mentioned an unclassified “other.” (These percentages do not add up to 100 because persons who fall into more than one category could be mentioned.)

EFFECT OF MEDICAL HISTORY ON SCREENING

Cancer in the Family

Persons with a family member who has been diagnosed with cancer are more likely to have been screened than others, and those with a family member diagnosed for colorectal cancer specifically are even more likely to have been screened than others (see exhibits 12 and 13).

EXHIBIT 12

Screening by Presence of Family Member with Any Cancer

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Family member diagnosed	1,321	62%	822	38%	2,143	100%
No family member diagnosed	420	55	349	45	769	100
Don't know	67	46	80	54	147	100
Total	1,708	59%	1,251	41%	3,059	100%

SOURCE: Public Sector Consultants Inc.

EXHIBIT 13

Screening by Presence of Family Member with Colorectal Cancer

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Family member diagnosed	436	68%	206	32%	642	100%
No family member diagnosed	1,218	58	883	42	2,101	100
Don't know	183	51	177	49	360	100
Total	1,837	59%	1,266	41%	3,103	100%

SOURCE: Public Sector Consultants Inc.

- The correlation between the presence of a family member with cancer and being screened is very small ($r = .068$).
- The correlation between the presence of a family member with colorectal cancer and being screened is very small ($r = .066$).

Cancer in the Individual

Those who have been told by a doctor or nurse that they have cancer are more likely to have been screened than others (see Exhibit 14). Again, although the rates of screening in the subgroups are large enough that the difference among them is statistically significant, the size of the effect is very small ($r = .040$).

EXHIBIT 14
Screening by Diagnosis of Cancer

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Subject has been told they have cancer	240	65%	131	35%	371	100%
Subject has not been told they have cancer	1,592	58	1,129	42	2,721	100
Subject does not remember	10	55	8	45	18	100
Total	1,842	59%	1,268	41%	3,110	100%

SOURCE: Public Sector Consultants Inc.

Colon Disease in the Individual

Those who have been told by a doctor or nurse that they have colon disease, such as irritable bowel syndrome, colitis, diverticulitis, or Crohn's Disease, are more likely to have been screened than others (see Exhibit 15). The correlation between a diagnosis of colon disease and being screened is very small ($r = .112$).

EXHIBIT 15
Screening by Diagnosis of Colon Disease

	Screened		Unscreened		Total	
	Number	%	Number	%	Number	%
Subject has been told they have colon disease	491	70%	206	30%	697	100%
Subject has not been told they have colon disease	1,314	56	1,012	44	2,326	100
Subject does not remember	38	45	46	55	84	100
Total	1,845	59%	1,264	41%	3,107	100%

SOURCE: Public Sector Consultants Inc.

EFFECT OF HEALTH STATUS ON SCREENING

General Health and Exercise

- Those who report better values on a scale measurement of general health (as excellent, very good, good, fair, or poor) are more likely to have been screened than are those who report worse values, but the effect is very small ($r = .055$).
- Those who report having relatively fewer days during the last 30 in which their health was not good are more likely to have been screened than are those who report having had relatively more such days, but the effect is very small ($r = .065$).

- Those who report having participated in exercise or physical activity such as running, golf, gardening, or walking on relatively more days during the last 30 are more likely to have been screened than are those who report having had relatively fewer such days, but the effect is very small ($r = .045$).

Focus:

Perceptions and Attitudes Among Screened People

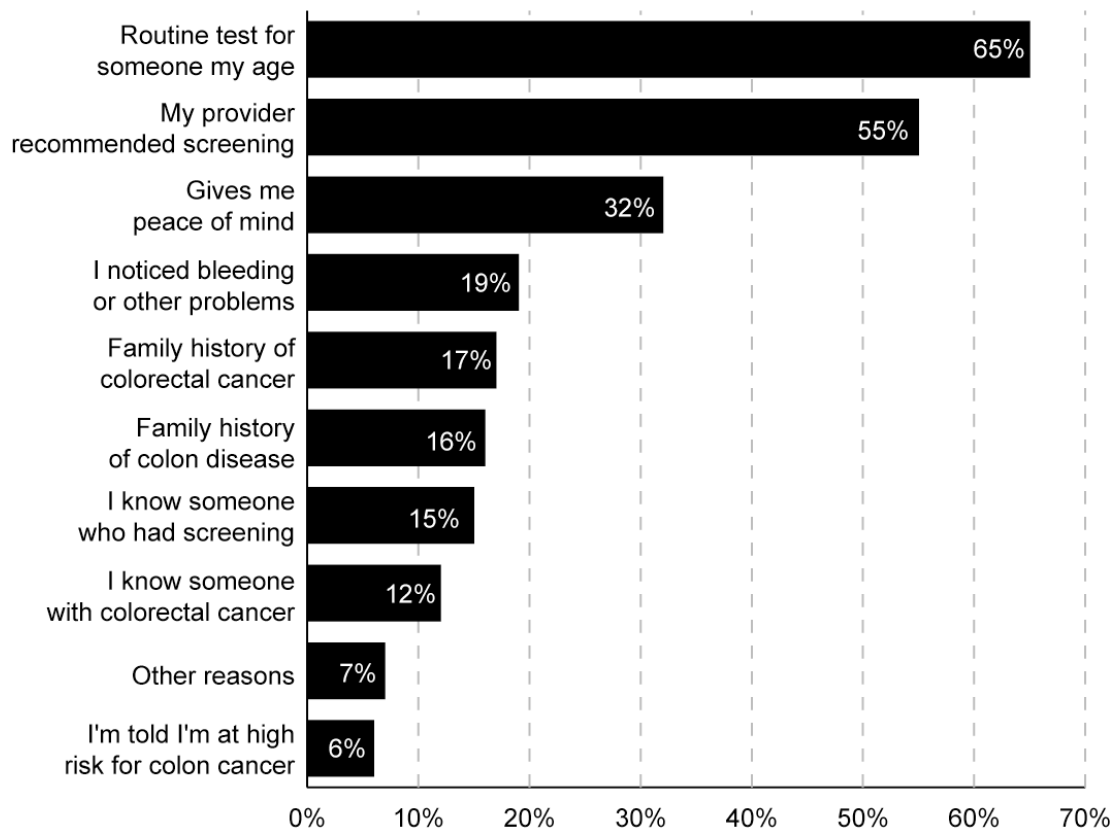
Those who have been screened for colorectal cancer are most likely to regard screening as a matter of routine testing. Regardless of the type of screening chosen, they are likely to say it was recommended by their provider and covered by their insurance.

MOTIVATIONS FOR BEING SCREENED

Screened respondents were asked which of 10 reasons for having the screening done motivated them; they were allowed to select as many as applied (see Exhibit 16). Nearly two-thirds (65 percent) said they regarded screening as routine testing for someone their age, and more than half (55 percent) said a provider had recommended it. Relatively few mentioned any of the risk factors for colorectal cancer as a motivator.

EXHIBIT 16

Reasons for Obtaining Screening for Colorectal Cancer



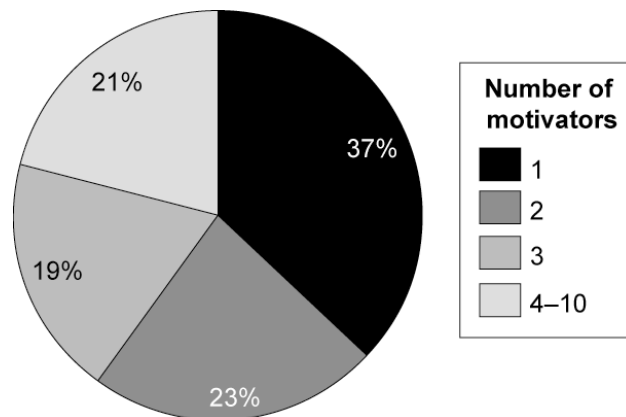
SOURCE: Public Sector Consultants Inc.

NOTE: Asked only of those who have been screened.

These data are open to several interpretations. For example, what one might think would be the most powerful motivator is the one cited by the smallest proportion of respondents: “I’ve been told by a doctor or nurse that I’m at high risk for colon cancer.” But considering the incidence of high-risk people in the population, and selecting only for such people who have been *told* they are at high risk, the comparatively low frequency (6 percent) with which this motivator is mentioned may only reflect the comparatively low frequency with which people who would have it occur in the population. A similar interpretation could be provided for “I noticed bleeding or other problems,”¹² “family history of colorectal cancer,” and “family history of colon disease,” all of which could be termed risk factors for colorectal cancer. The difficulty in judging the adequacy of this explanation lies in the fact that no normative data are available. Without knowing the share of the population that could be expected to experience these motivators, it is not possible to say whether the motivators appear more or less frequently in the study than a null hypothesis would predict.

A second difficulty in interpreting the data arises from the fact that because respondents were allowed to mention any or all of the motivators, it is not appropriate to judge the importance of individual motivators by simply comparing their tallies in the total. Some respondents “voted” just once (by selecting only one motivator), while others voted many times, diluting the effect of the one-vote respondents. The best approach would seem to be to examine the distribution of the motivators mentioned by the number of motivators mentioned. Exhibit 17 shows that more than a third of the screened respondents (37 percent) mentioned only one motivator, about a fourth (23 percent) mentioned two, a fifth (19 percent) mentioned three, and a fifth (21 percent) mentioned four or more.

EXHIBIT 17
Number of Motivators for Screening Mentioned



SOURCE: Public Sector Consultants Inc.
NOTE: Asked only of those who have been screened.

¹² Several online sources consulted during the preparation of this report suggest that rectal bleeding is in fact a common complaint. In any case, it may have many causes other than colorectal cancer.

Under a kind of naïve null hypothesis, we could make the assumption that each motivator is equally likely to be mentioned, within groups defined by the number of motivators mentioned. Among those who mention one motivator, each would account for one-tenth of the total. Among those who mention two motivators, each would be twice as likely to be mentioned by a given respondent, but twice as many will be mentioned in all (for a given number of respondents), with the result that each will still be expected to account for one-tenth of the total. And so on for those who mention three motivators, four, or any other number. In short, if there were no difference in the efficacy of the motivators, we would expect each to be mentioned about one-tenth of the time, controlling for the number of motivators mentioned. This form of the null hypothesis can be tested.¹³ The result bears out what Exhibit 16 illustrates: mentions of motivators are not at all equally distributed. We can reject the proposition that each motivator is equally likely to lead someone to be screened.

The law of diminishing returns operates here. Those who mention few motivators create sharp distinctions among them; those who mention many not only create weak distinctions themselves, but also obscure the sharp ones created by others. A respondent who selects only one motivator from the list tells us something useful about her motivation, but one who selects all ten tells us nothing. For this reason, Exhibit 18 sets out the reasons for being screened sorted by the number of reasons selected, for those who selected one, two, three, or four reasons (90 percent of the screened respondents).

Exhibits 16 and 18 are not comparable, although they look similar. The base for Exhibit 16 is respondents; it shows the share of respondents mentioning each motivator. The base for Exhibit 18 is mentions of motivators; it shows the share of each motivator among all motivators mentioned.

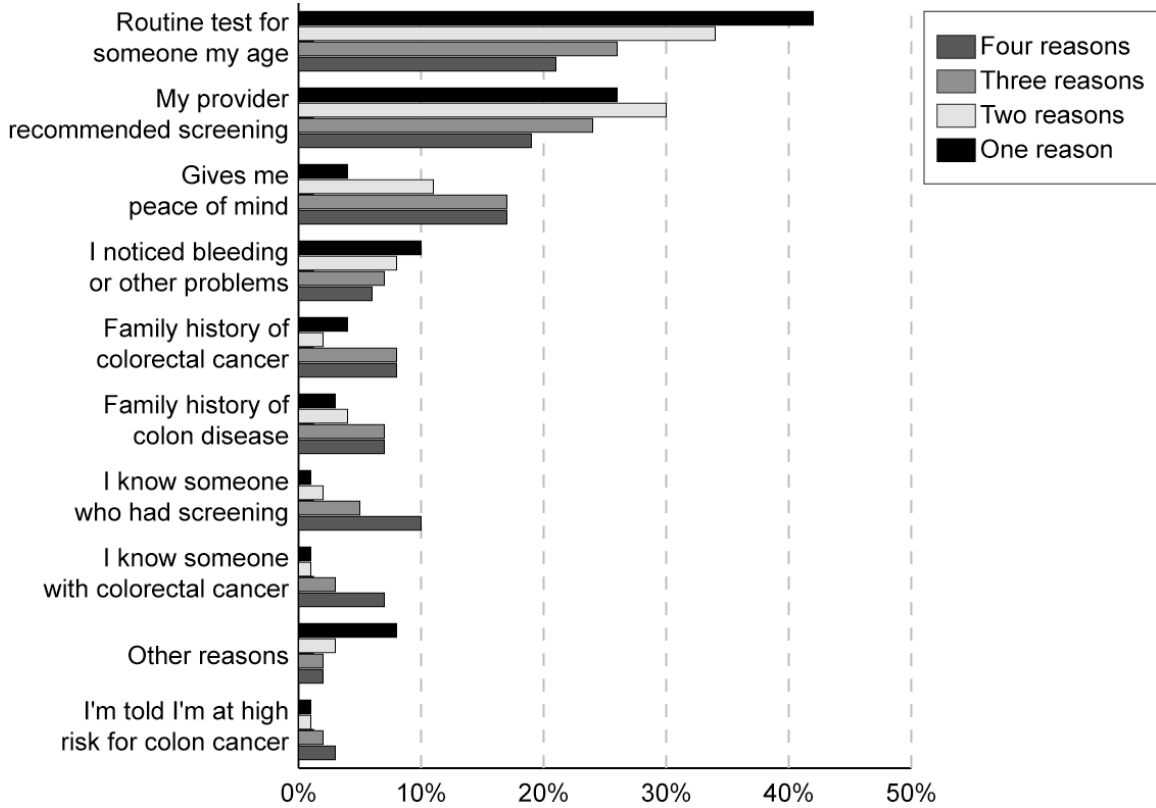
As the number of motivators given increases from one to four in Exhibit 18, the bar length for each motivator converges toward the average value, 10 percent. Comparing bar length across the motivators conveys less and less information about the relative importance of a motivator as the number of motivators given increases, a graphic illustration of the point made above about diminishing returns. But comparing bar length across the classifying categories shows that some motivators have increasing shares of mentions as the number of mentions increases, while others have decreasing shares. This suggests an interpretation:

- A pattern of increasing shares of mentions means that a motivator becomes more likely to be mentioned as the number mentioned increases.¹⁴ We might infer that motivators with this pattern become important enough to mention only as we look at respondents who mention more and more of them. Such “second-order” motivators appear to be supplemental or secondary reasons to be screened rather than primary drivers of the screening decision.

¹³ Using the binomial test, with the test proportion specified as .10.

¹⁴ If all motivators were equal in importance, each would have a 10 percent chance of being mentioned by those who mention one, but a 40 percent chance among those who mention four. Presumably, a motivator has to be highly important to make a 10 percent cut, but can be less so to make a 40 percent cut.

EXHIBIT 18
Reasons for Obtaining Screening for Colorectal Cancer,
by Number of Reasons Given



SOURCE: Public Sector Consultants Inc.
NOTE: Asked only of those who have been screened.

- A pattern of decreasing shares of mentions results from the fact that motivators with this pattern are comparatively likely to be mentioned to the exclusion of other motivators by the respondents with the shortest lists. As the lists increase in length, fewer and fewer of them fail to contain such motivators; to grow longer they must include others, driving the share of these motivators in the total down. These are “first-order” motivators, ones that tend to be primary reasons for being screened, not supporting ones.

By this analysis, there are four first-order motivators:

- Screening is part of the routine tests for someone my age
- My provider recommended screening
- I noticed bleeding or other problems
- Other reasons

And there are five second-order motivators:

- Gives me peace of mind
- Family history of colorectal cancer
- Family history of colon disease
- I know someone who has colorectal cancer
- I know someone who has been screened

One motivator, “I’ve been told I’m at high risk for colorectal cancer,” is about equally likely to appear in the list whether the list has one, two, three or four items. It is unclear what this would suggest, but since this item essentially replicates the risk-factor items present elsewhere in the list, it is not clear that the item captures anything unique.

Each of the first-order motivators save the second displays a clear pattern of decreasing shares of mentions as increasing numbers of motivators are mentioned. In the case of “My provider recommended screening,” this is mentioned more often when two reasons are given than when one is, but thereafter the characteristic pattern of decreasing share of mentions is clear. Those who mention two reasons mention this one almost as often (30 percent of mentions) as the leading reason, routine testing (34 percent of mentions). In all, almost seven out of eight (86 percent) of the screened respondents mentioned either or both of these two motivators.

The instrument did not provide a way to capture what is meant by “other reason.” Whatever it (or they) may be would apparently be worth knowing, given that this motivator behaves like other first-order motivators.

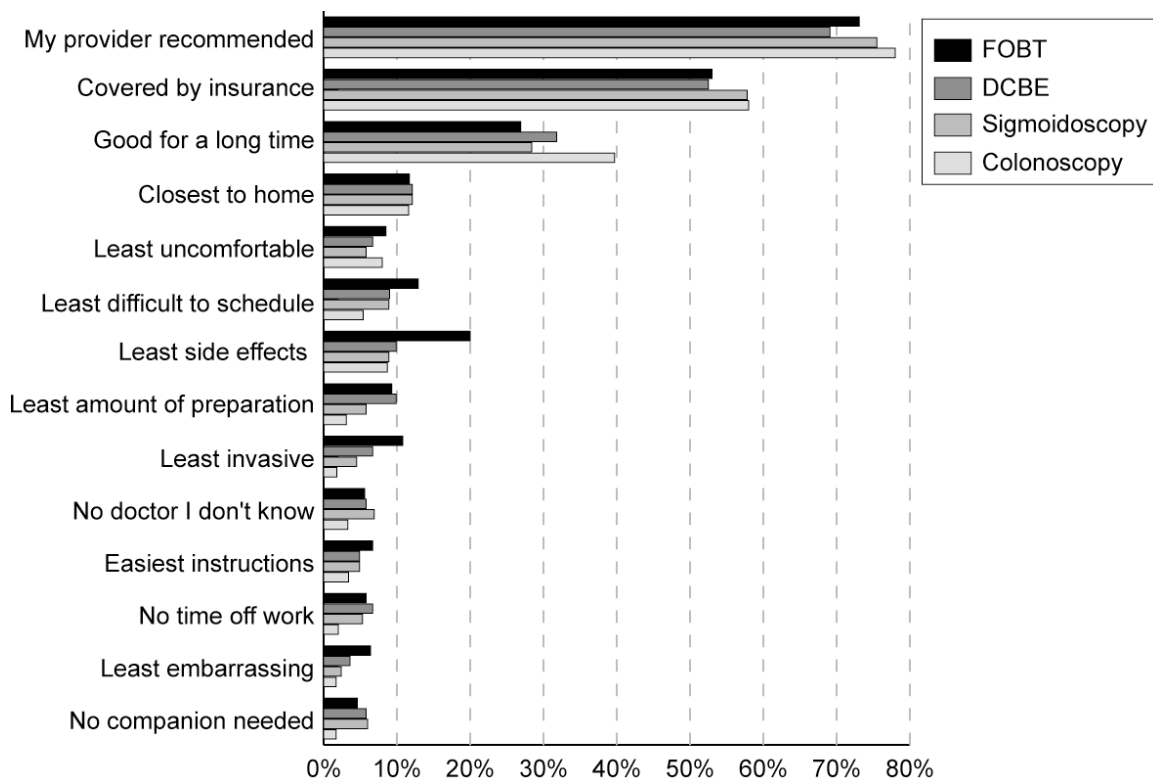
This analysis may help make some important distinctions not based on sheer volume of mentions among the motivators. For example, it suggests that among those who experience bleeding or other problems, this is more likely to be the driver of the screening decision, and less likely to be a secondary reason for being screened—as is probably to be hoped. On the other hand, other colorectal cancer risk factors, such as a family history of it, or of colon disease, are seen to have a clearly different pattern consistent with being secondary factors in the screening decision. This suggests that having these risk factors may make the difference for those in doubt about whether to be screened, but they are not likely to lead to screening absent a first-order motivator. Similarly, desiring peace of mind, knowing someone who has been screened, or knowing someone who has colon cancer appear to play secondary roles and are thus unlikely by themselves to lead a person to be screened, although they may add their weight to the list for those in doubt.

RATIONALE FOR SELECTION OF SCREENING PROCEDURES

Although we might hypothesize that different procedures are chosen for different reasons, this does not appear to be the case, at least not insofar as the most frequently cited reasons are concerned. Exhibit 19 shows that regardless of the screening procedure chosen, the three leading reasons given for the choice are that it was recommended by the provider, covered by insurance, and good for a long time.

The data reveal few trends that seem procedure-specific. One such is the slightly greater tendency to chose a colonoscopy than the other procedures on the basis that it does not have to be repeated for a long time, a trend we might expect. But given that as a matter of clinical fact there is a 10:5:5:1 ratio among the procedures with respect to the interval during which they are regarded as valid, the observed 10:8:7:7 ratio in the perception that they are good for a long time (rescaled) does not seem reality-driven, particularly in regard to the FOBT.¹⁵

EXHIBIT 19
Reasons for Selecting Screening Procedure, by Procedure



SOURCE: Public Sector Consultants Inc.
NOTE: Asked only of those who have been screened.

The most salient facts are these:

- Three reasons strongly dominate the selection of a screening procedure: a provider’s recommendation, coverage by insurance, and the perception (rightly or wrongly) that the procedure does not have to be repeated for a long time.
- Even in the case of reasons where there is an indisputable difference among the procedures such that one is clearly “better” or “worse” than the others, this makes

¹⁵ 10:5:5:1 is the ratio, scaled in years, for the period of time the four procedures are considered valid, ordered as colonoscopy:sigmoidoscopy:DCBE:FOBT. 10:8:7:7 is the ratio of mentions of “good for a long time” associated with the four procedures, in the same order, rescaled so that mentions of this reason in association with the colonoscopy are equal to 10.

little or no difference in the selection of a procedure, since these reasons (a) fail to discriminate clearly among the procedures selected and (b) do not matter in an absolute sense to most respondents anyway. For example, the FOBT is indisputably the procedure that can be undergone closest to home, yet the tendency to associate this reason with this procedure is statistically indistinguishable from the tendency to associate this reason with any of the other three procedures. This motivator simply does not discriminate among the procedures—point (a). And because mentions of this motivator are dwarfed by mentions of three others, regardless of procedure, it is evidently not particularly important in the first place—point (b). Good for a long time is a partial exception in regard to (a) and a clear exception in regard to (b), but this principle applies clearly to least uncomfortable, least side effects, least invasive, no doctor I don't know, and probably others.

Focus:

Perceptions and Attitudes among Those Not Screened

Those who have never been screened for colorectal cancer are most likely to say that their providers have not mentioned screening to them, they do not like some aspect of screening, they find some aspect of screening inconvenient, or they simply do not think they need it. They are unlikely to say that their insurance will not cover it. The responses of those who have been screened but do not plan to be screened again are much the same as those of the never-screened.

OBJECTIONS AMONG THE NEVER-SCREENED

Issues in Interpretation of the Data and Approach Adopted

Respondents who reported they have never had any of the four screening procedures were asked to select their top three reasons from a list of 14 reasons. Thus the data have the “voting” problem described above—some respondents (40 percent) gave one reason only, some (12 percent) gave two, some (44 percent) gave three, and a few (3 percent) gave as many as seven. Here again, responses from those who gave many reasons obscure distinctions made by those who gave few. This is especially problematic when the list of reasons contains many that are correlated,¹⁶ suggesting that they tend to measure at least some of the same underlying issue. A multireason respondent can in effect vote for the same reason repeatedly, while a single-reason respondent cannot. The approach adopted was to condense the 14 reasons into five, as follows.

- The reasons “too embarrassing,” “too invasive,” “too uncomfortable,” “I don’t want to go to a doctor I don’t know,” and “I am afraid of the side effects or complications” were combined to form a thematic variable we will label “I don’t like screening,” to suggest a construct these responses have in common, the dimension of discomfort and distastefulness associated with screenings. In cases where a respondent mentioned more than one from this list, only one instance of “I don’t like screening” is tallied.
- The reasons “too difficult to schedule,” “requires too much preparation,” “requires me to take time off work,” “requires me to bring someone along,” “instructions too hard to follow,” and “I would have to go too far from home” were combined to form a thematic variable we will label “it’s inconvenient,” a construct that captures the dimension of effort, disruption, and difficulty associated with screening procedures.
- The reasons “my provider didn’t mention it,” “I don’t need it,” and “my insurance doesn’t cover it” are analyzed as is; they apparently measure three independent dimensions of the screening decision-making process.

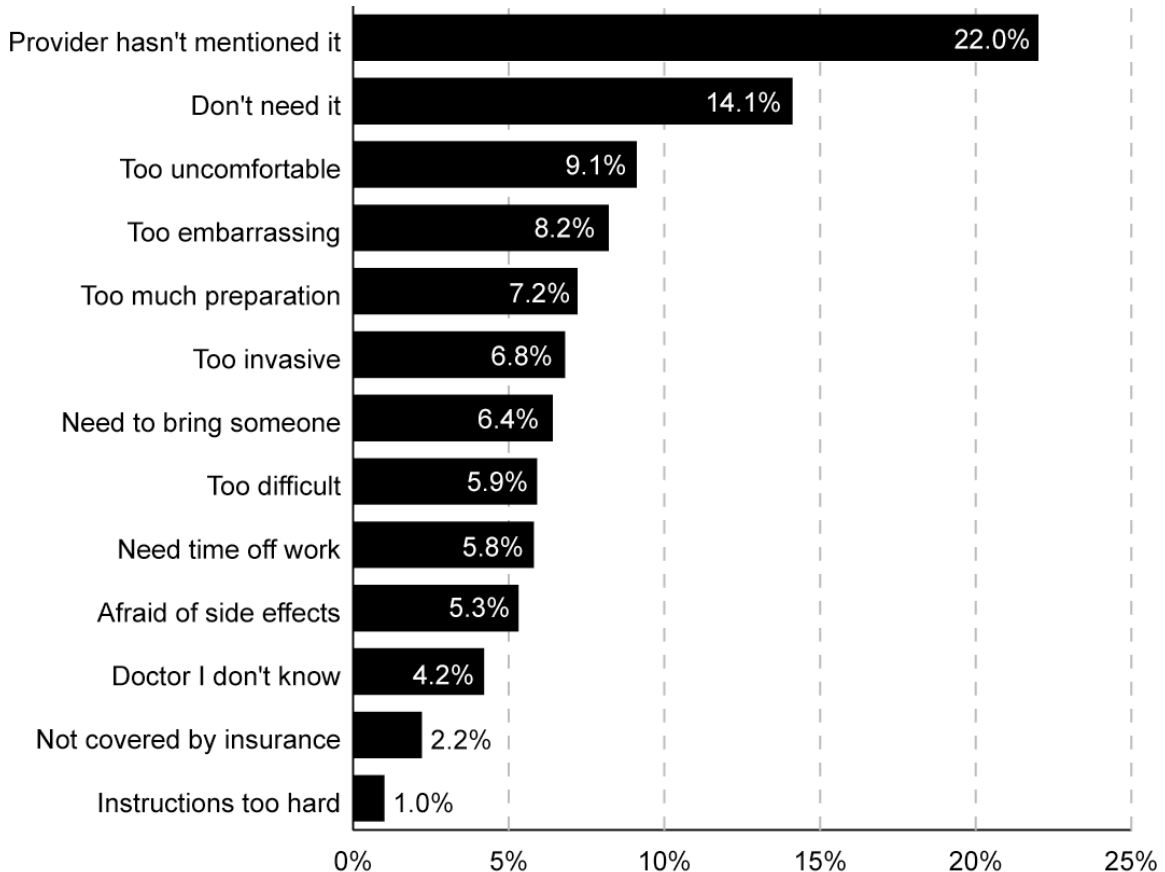
In the analysis that follows, this consolidated approach will be contrasted with an unconsolidated approach that accepts all the reasons provided in the instrument at face value.

¹⁶ Some examples: “too embarrassing” and “too invasive” ($r = .335$); “too difficult” and “need time off work” ($r = .259$); “too far from home” and “doctor I don’t know” ($r = .169$); “too embarrassing” and “too uncomfortable” ($r = .282$); all with $p = .000$.

Face-value Interpretation of Reasons for Not Being Screened

On the assumption that the reasons for not having been screened that are listed in the questionnaire are cognitively unrelated and should therefore be tallied individually, the most prevalent reasons are “my provider hasn’t mentioned screening to me” and “I don’t need it.” See Exhibit 20.

EXHIBIT 20
Unconsolidated Reasons for Never Having Been Screened for Colorectal Cancer



SOURCE: Public Sector Consultants Inc.

NOTE: Asked only of those who have never been screened.

This subset of the sample contains 465 respondents who gave 990 reasons in all. The number of reasons (not respondents) is the base for the proportions shown in the exhibit. Differences of less than ± 4.4 percentage points between reasons are not statistically significant.¹⁷ This means that in the portion of the list from “too uncomfortable” through “doctor I don’t know,” no reason is being discriminated from any other reason. The same is true of “not covered by insurance” and “instructions too hard,” considered as a pair.

In addition to the fact that this test (i.e., these results) fails to discriminate among most of the items being tested, it is self-evident that no item seems to be very important in an

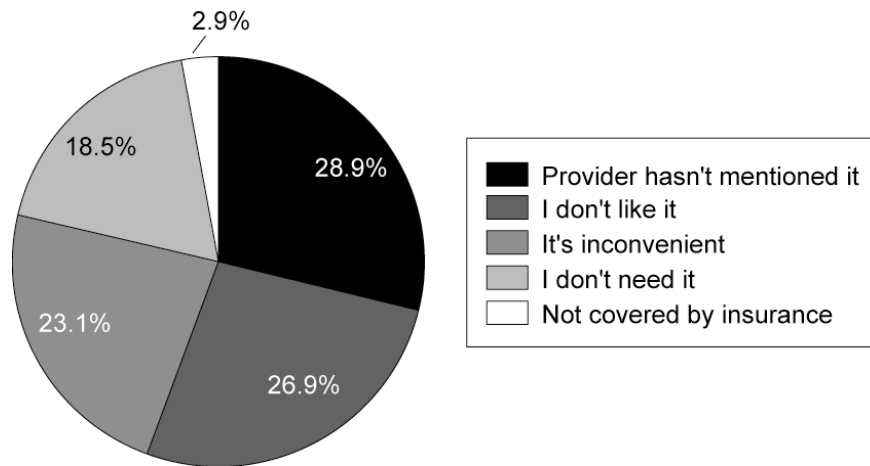
¹⁷ Z test of proportions with critical value $z \leq .05$.

absolute sense. No reason in this list, even the leading ones, garners a share of the whole that is remotely comparable to the shares of the leading reasons given by those who chose to be screened (see Exhibit 16).

Thematic Interpretation of Reasons for Not Being Screened

A more useful picture emerges from a thematic interpretation obtained by consolidating like reasons for not having been screened (see Exhibit 21).

EXHIBIT 21
Consolidated Reasons for Never Having Been Screened for Colorectal Cancer



SOURCE: Public Sector Consultants Inc.
NOTE: Asked only of those who have never been screened.

This group, as is the case for the group whose responses are shown in Exhibit 20, contains 465 respondents. After consolidating responses as described above, 762 are tallied here; this is the base for the proportions shown. Differences of less than ± 5.0 percentage points between reasons are not statistically significant. This means that “provider hasn’t mentioned it” and “I don’t like it” cannot be statistically discriminated; either could be the leading reason, and more data would be required to establish or disprove what this study seems to show. The other three items in the list are clearly distinguished from each other, and from these two, both statistically and cognitively.

Demographic Trends In Reasons Given for Not Having Been Screened

Blacks are significantly more likely than whites and Asians to say their provider has not mentioned screening to them,¹⁸ but there are no other significant differences among the reasons mentioned that are associated with race (see Exhibit 22).

¹⁸ $p F = .026$.

EXHIBIT 22
Reasons for Not Having Been Screened, by Race

	Provider didn't mention it		I don't like it		It's inconvenient		I don't need it		It's not covered by insurance	
	#	%	#	%	#	%	#	%	#	%
Black	45	61%	25	34%	30	40%	16	22%	4	6%
White	145	44	157	47	129	39	101	31	13	4
Hispanic	8	73	5	46	4	36	3	27	0	0
Asian	3	25	5	42	2	17	3	58	2	17
Native American	3	38	6	75	3	38	3	38	0	0
Other	6	54	3	27	5	46	3	54	1	10
Total	210	47%	201	45%	173	38%	136	31%	20	4%

SOURCE: Public Sector Consultants Inc.

Those with graduate or professional degrees are significantly more likely than high school graduates and those with four-year degrees to believe they do not need screening,¹⁹ but there are no other significant differences among the reasons mentioned that are associated with schooling (see Exhibit 23).

EXHIBIT 23
Reasons for Not Having Been Screened, by Schooling

	Provider didn't mention it		I don't like it		It's inconvenient		I don't need it		It's not covered by insurance	
	#	%	#	%	#	%	#	%	#	%
Less than high school	36	44%	40	49%	30	37%	30	37%	6	7%
High school graduate	96	49	97	49	75	38	51	26	7	4
Post-high school	32	48	28	41	29	43	22	33	3	4
Four-year college	16	42	17	42	19	48	8	21	5	13
Graduate or professional	22	43	16	31	17	33	24	47	1	2
Total	202	46%	198	45%	170	39%	135	31%	22	5%

SOURCE: Public Sector Consultants Inc.

There are no significant differences in the reasons given for not being screened that are associated with gender or age.

OBJECTIONS AMONG THOSE WHO WILL NOT BE SCREENED AGAIN

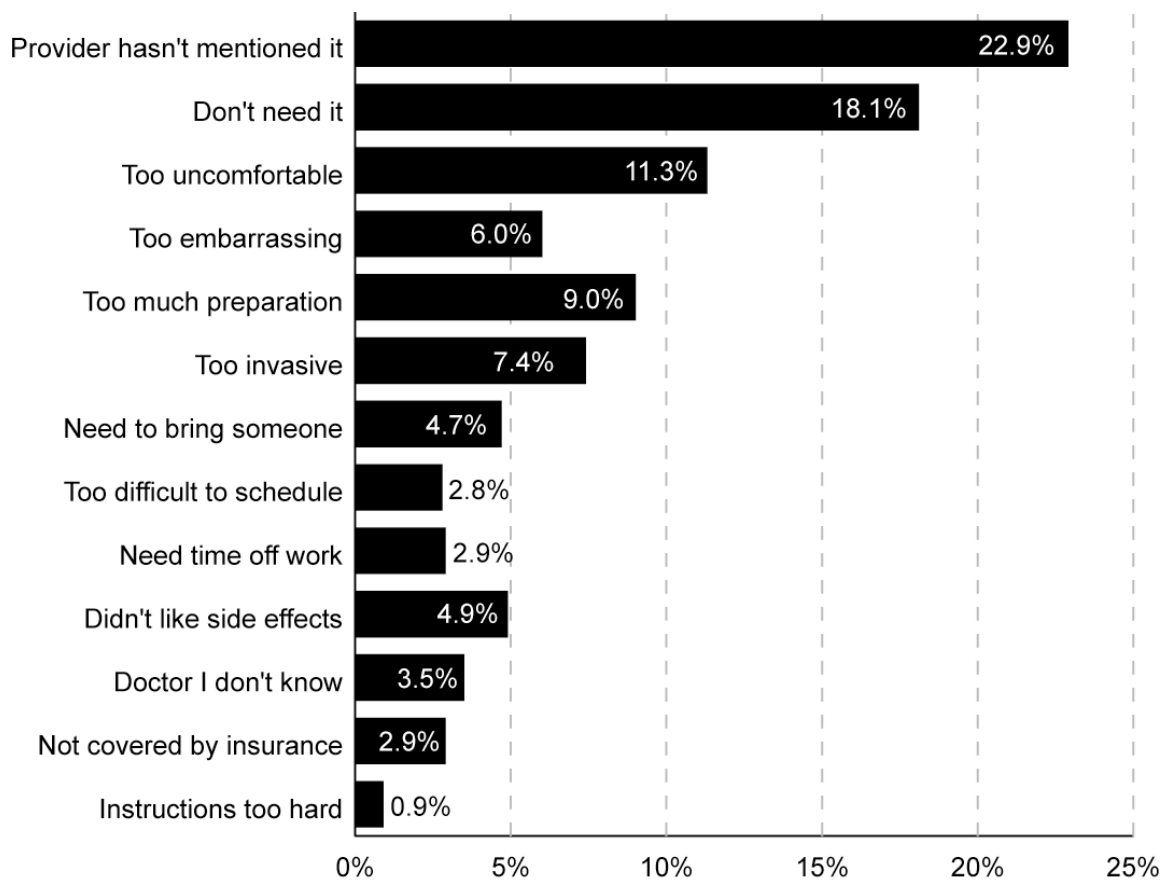
Some 366 respondents who have been screened at some time in the past said they would not be screened again. They were asked to select three reasons why not, from a battery of 14 reasons analogous to those given the never-screened. Interpretation of these data parallels interpretation of the data from the never-screened. Exhibits 24 and 25 show the unconsolidated and consolidated responses, respectively.

¹⁹ $p F = .021$.

Consolidating these responses by theme reduces the number of different responses from 752 to 608. The base for the unconsolidated responses is the 752 responses, not the 366 respondents. The base for the consolidated responses is the 366 respondents, not the 608 responses. This is done to compensate for the “multiple votes” effect discussed above.

The salient facts are these. Those who have been screened but say they will not be screened again closely mirror those who have never been screened. They are most likely to say the reason is that their provider has not mentioned screening, and then to say that they do not like screening. They are somewhat more likely than the never-screened to say that they do not feel the need for (another) screening.

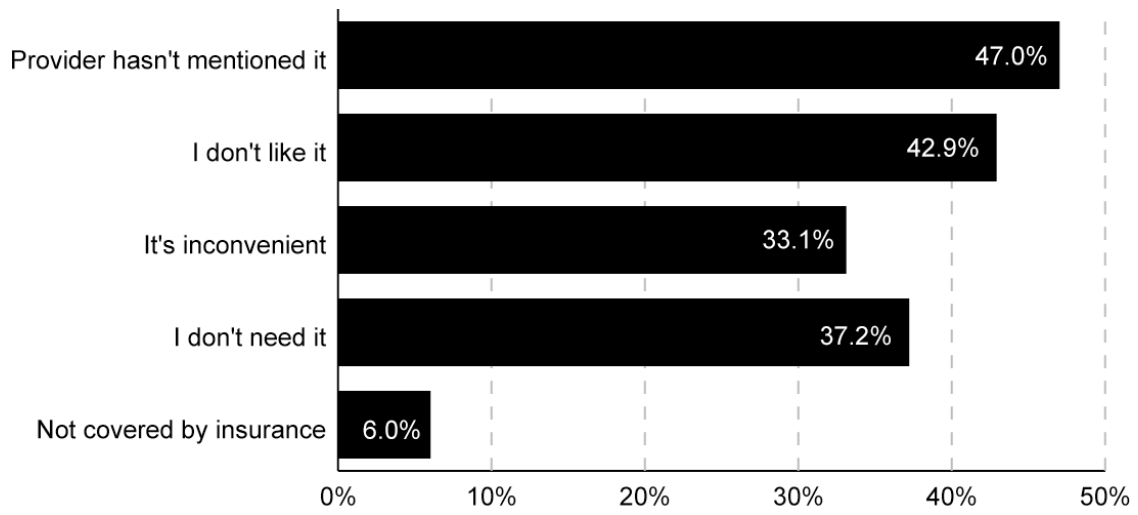
EXHIBIT 24
Unconsolidated Reasons for Not Being Screened Again for Colorectal Cancer



SOURCE: Public Sector Consultants Inc.
NOTE: Asked only of those who will not be screened again.

EXHIBIT 25

Consolidated Reasons for Not Being Screened Again for Colorectal Cancer



SOURCE: Public Sector Consultants Inc.

NOTE: Asked only of those who will not be screened again.

Conclusions:

Toward a Model of Screening Decisions

This study posed the following key questions. We are now in a position to offer some answers.

- Who tends to be screened for colorectal cancer and who does not?
- What motivates those who are screened to seek screening?
- Why do they prefer one screening procedure over another?
- Why do those who are not screened avoid being screened?

PROFILING THE SCREENED AND THE UNSCREENED

Demographic Factors

- There is very little difference between men and women in terms of which gender is more likely to seek screening. The two-point higher rate found among women in the study is not statistically significant.
- Age plays a role in seeking screening. Those just entering the at-risk stage in their lives, aged 50–54, are less likely to seek screening than those in the next two decades of their lives, aged 55–74. Beginning at age 75, screening rates appear to go down again; the small number of persons aged 75 and older in the sample makes this conclusion provisional.
- Those with greater amounts of education are more likely to be screened than those with less education. On average, each year of schooling past the middle of high school increases screening rates by about two points.
- Whites are more likely to have been screened than blacks, and possibly Hispanics and Native Americans (small numbers of these persons in the study make the finding provisional). When race is controlled for schooling, however, much smaller differences among the races are found, such that only in the case of high school graduates does it appear that the difference found in the study measures an underlying difference in the population.
- These factors have only a very small effect and cannot be used in any practical way to predict who will seek screening and who will not.

Family/Medical History

- Those with a family history of cancer, or of a colon disease, are more likely to seek screening than are those who do not.
- Those who have been diagnosed with cancer, or with a colon disease, are more likely to seek screening than are those who have not.
- Like demographic factors, factors based on medical history have only a very small effect on who seeks screening and who does not.

Other Factors

- Those with commercial insurance coverage are more likely to be screened than those with Medicaid coverage. As with race, however, when plan type is controlled for schooling, only in the case of high school graduates does it appear that the study is measuring an underlying difference in the population.
- Those who are aware of the risk factors for colorectal cancer are more likely to seek screening than are those who are not. Similarly, those who have received information about colorectal cancer are more likely to seek screening than are those who have not received it.
- Those who know someone who has been screened are more likely to seek screening than are those who do not.
- These factors have a slightly greater effect on seeking screening than demographics or history, but their usefulness in predicting who will seek screening and who will not is still very limited.

MOTIVES FOR SEEKING SCREENING

- Nearly two-thirds (65 percent) of those who have been screened say they regard screening as routine testing for someone their age. More than half (55 percent) say screening was recommended by a provider. About one in five (19 percent) seeks screening as a result of noticing bleeding or other problems. These three reasons, alone or in combination with others, seem to be sufficient to lead people to get screening.
- Risk factors for colorectal cancer other than bleeding, such as a family history of cancer or colon disease, and other factors such as knowing someone who has colorectal cancer, knowing someone who has had screening, or feeling peace of mind from obtaining screening seem to be secondary reasons for seeking screening. They do not seem sufficient to lead people to get screened absent one of the three reasons mentioned above.

MOTIVES FOR CHOOSING A SCREENING PROCEDURE

This is one aspect of screening about which we were unable to learn anything. Screened people give the same reasons for choosing each of the four procedures, namely, that it was recommended by their provider, covered by insurance, and good for a long time. In fact, given their strong tendency to say they chose the procedure recommended by their provider, the simplest explanation would seem to be that people *do not* choose screening procedures; their providers do.

REASONS FOR AVOIDING SCREENING

- Five reasons are given for avoiding screening. Almost half (47 percent) of the never-screened say their provider has not recommended it. Nearly as many (44 percent) say they do not like some aspect of it (discomfort, embarrassment). Three out of eight (38 percent) say they find it inconvenient (time off work, too much preparation). Almost a third (30 percent) they just do not think they need it. Only a few (5 percent) say their insurance will not pay for it.

- With minor differences, those who have been screened but do not plan to be screened again are likely to offer the same reasons for their decision as the never-screened.

TOWARD A MODEL OF SCREENING BEHAVIOR AND AN APPROACH TO PROMOTING SCREENING

This study suggests that, for the most part, when it comes to getting screened for colorectal cancer, people are people. It is just not possible to take down a battery of facts about someone's gender, race, education, family history, and so on, then confidently predict whether or not s/he has been screened. The best predictors, education and the receipt of information about colon cancer, are only weak predictors. Education and information certainly help—the more the better—but we are forced to conclude that knowledge takes a back seat to attitudes and the role of the provider when it comes to driving the decision.

What are these attitudes? On the screened side, screening is very likely to be seen as a matter of routine testing, something that comes with arriving at a certain stage in life. On the unscreened side, it is likely to be seen as unpleasant, inconvenient, and unnecessary.

Looming even larger than attitudes, however, is the role of the provider. Screened people are almost as likely to say their provider recommended it as they are to say it is just a routine test—the two essentially go hand in hand. Conversely, “my provider didn't recommend it” is what we heard more than anything else from both those who have never been screened and those who have been but will not be again.

An effort to boost screening might try to tackle the attitude trifecta: “I don't like it,” “it's inconvenient,” and “I don't need it anyway.” Nothing is going to make a screening procedure exactly easy, popular, or fun, but it may be possible to flip the attitude switch in small ways that make a difference. After all, most screened people emphasize that it is just a routine test; they get past the discomfort and inconvenience somehow or other and do not consider the test a big deal.

The effort to boost screening rates also might begin by recognizing the crucial role of the provider. After all, screening for colorectal cancer is not like, say, screening for hypertension—one can check one's own blood pressure, but not one's colon. A physician's order is needed for any of the four screening procedures. But beyond that obvious sense in which the provider plays a crucial role, this study makes it clear that more than anything else a provider's *silence* enables someone who would just as soon skip the screening to do just that.

Appendix:
Survey Instrument

Survey of Health Plan Members

The Michigan Association of Health Plans Foundation (MAHPF) and your health plan want to collect information to find out why some people have health tests and others do not. They have hired Public Sector Consultants Inc. to conduct this survey.

It's your decision to be a part of this study. You are free to choose which questions you want to answer. If you do not complete the survey, it will not change your health insurance coverage. It will take about 5 minutes to take the survey. In completing the survey you agree to be part of the study. All of your information will be kept confidential.

If you like, you can also take the survey online at www.pscinc.com/health.

If you have any questions, contact Melissa Riba of Public Sector Consultants Inc. at (877) 886-7927.

MARKING INSTRUCTIONS

- Use a No. 2 pencil or a blue or black ink pen only.
- Do not use pens with ink that soaks through the paper.
- Make solid marks that fill the response completely.
- Make no stray marks on this form.

CORRECT: ●

INCORRECT: ✓ ✗ ○ ●

General Health

1. Would you say that in general your health is—

- a) Excellent (A)
- b) Very good (B)
- c) Good (C)
- d) Fair (D)
- e) Poor (E)

2. Thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health **not** good?

3. During the past 30 days, other than your regular job, did you participate in any physical activities or exercise, such as running, golf, gardening, or walking for exercise?

- a) Yes (Y)
- b) No (N)

Information/Knowledge About Cancer

4. How much do you know about the things that put you at risk for colorectal cancer?

- a) A lot (A)
- b) A little (B)
- c) Nothing at all (C)

5. Have you ever received any information about colorectal cancer?

- a) Yes (A)
- b) No (B)
- c) Don't remember (C)

Go to question 6.

Go to page 2.

6. If **yes**: What information did you receive? (Check **all** that apply)

- a) Postcard or reminder letter from my health plan about the screening (A)
- b) Information from a brochure about the screenings (B)
- c) Information from my doctor or nurse (C)
- d) Information from a friend or family member (D)
- e) Heard something on the radio and/or television (E)
- f) Read about it in a newspaper, magazine, or online (F)
- g) Saw a billboard or poster (G)
- h) Other (H)
- i) Don't remember (I)

Continue to page 2.

PLEASE DO NOT WRITE IN THIS AREA



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63 **Factors Influencing Screening Decision**

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There are four different types of colorectal cancer screening:

Fecal Occult Blood Test (FOBT): For this test, you receive a test kit from your doctor or health care provider. At home, you put a small amount of stool on a test card. You do this for three bowel movements in a row. Then you return the test cards to the doctor or a lab. The stool samples are checked for blood.

Double Contrast Barium Enema (DCBE): This test is an x-ray of your colon. You are given an enema with a liquid called barium. Then the doctor takes an x-ray. The barium makes it easy for the doctor to see the outline of your colon on the x-ray to check for polyps or other abnormalities.

Sigmoidoscopy: For this test, the doctor puts a short, thin, flexible, lighted tube into your rectum. The doctor checks for polyps or cancer inside the rectum and lower third of the colon.

Colonoscopy: This test is similar to flexible sigmoidoscopy, except the doctor uses a longer, thin, flexible, lighted tube to check for polyps or cancer inside the rectum and the entire colon. Before the colonoscopy, you get medication that makes you sleepy. During the test, the doctor can find and remove most polyps and some cancers.

7. Have you ever had a...

- a) FOBT
- b) DCBE
- c) Sigmoidoscopy
- d) Colonoscopy

Yes

- 1
- 1
- 1
- 1

No

- 2
- 2
- 2
- 2

Don't know

- 3
- 3
- 3
- 3

If you answered "YES" to any of these tests, go to page 3.

If you answered "NO" to all of these tests, answer question 8 below.

If you answered, "Don't know" to all of these tests, skip to page 4.

8. If you answered "No" to question 7, what are your top three reasons for not getting screened? (**Choose top three**)

- a) Too difficult to schedule (A)
- b) Required too much preparation before the test (B)
- c) Requires me to take time off from work (C)
- d) Requires me to bring someone with me to the appointment (D)
- e) Too embarrassing (E)
- f) Too invasive (F)
- g) Instructions are too hard to follow (G)
- h) Too uncomfortable (H)
- i) I don't want to go to a doctor that I don't know (I)
- j) Is not covered by my health insurance (J)
- k) My provider has not mentioned it to me (K)
- l) I am afraid of the side effects or complications (L)
- m) I would have to go too far from home to get to the test (M)
- n) I don't feel I need screening (N)

Go to page 4.

	Yes	No	Don't remember	
9. Was your screening a...				63
a) FOBT, within the past year?	1	2	3	61
b) DCBE, within the past 5 years?	1	2	3	60
c) Sigmoidoscopy, within the past 5 years?	1	2	3	59
d) Colonoscopy, within the past 10 years?	1	2	3	58
				57
10. What was your reason or motivation for having the colorectal cancer screening done? (Check all that apply)				56
a) Family history of colorectal cancer			(A)	54
b) Family history of colon disease (e.g., irritable bowel syndrome, colitis, diverticulitis, Crohn's Disease)			(B)	53
c) I know someone other than family member who had/has colorectal cancer			(C)	52
d) Part of the routine tests recommended for someone my age			(D)	51
e) My health care provider specifically recommended the screening			(E)	50
f) I know someone else who had the screening done			(F)	49
g) I noticed bleeding or had other problems			(G)	48
h) I have been told by doctor or nurse that I am at high risk for colon cancer			(H)	47
i) It gives me peace of mind to know that I don't have colorectal cancer			(I)	46
j) Other			(J)	45
				44

Perception of the Screening Process

Below is a list of reasons for choosing one test over another. Which of the following best describes your reasons for choosing the screening you did? (Choose top three reasons)

11. I chose the screening that—				43
a) Was the least difficult to schedule			(A)	42
b) Required the least amount of preparation before the test			(B)	41
c) Did not require me to take time off from work			(C)	40
d) Did not require me to bring someone with me to the appointment			(D)	39
e) Seemed the least embarrassing			(E)	38
f) Was the least invasive			(F)	37
g) Had the easiest instructions			(G)	36
h) Seemed the least uncomfortable			(H)	35
i) Did not require me to go to a doctor that I didn't know			(I)	34
j) Was covered by my health insurance			(J)	33
k) My provider recommended			(K)	32
l) Had the least possible side effects or complications			(L)	31
m) Could be done closest to my home			(M)	30
n) Wouldn't need to be repeated again for a long time			(N)	29
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				26
				25
				24
12. In the future, will you get any type of screening for colorectal cancer?				23
a) Yes	(A)			22
b) No	(B)			21
c) Don't know	(C)			20
				19
13. If you answered "No" or "Don't know" to question 12, what are your top three reasons for not getting screened again? (Choose top three)				18
a) Too difficult to schedule			(A)	17
b) Required too much preparation before the test			(B)	16
c) Requires me to take time off from work			(C)	15
d) Requires me to bring someone with me to the appointment			(D)	14
e) Too embarrassing			(E)	13
f) Too invasive			(F)	12
g) Instructions were too hard to follow			(G)	11
h) Too uncomfortable			(H)	10
i) I don't want to go to a doctor that I don't know			(I)	9
j) Is not covered by my health insurance			(J)	8
k) My provider has not mentioned it to me			(K)	7
l) I did not like the side effects or complications from the last time I had that screening done			(L)	6
m) I would have to go too far from home to get to the test			(M)	5
n) I don't feel I need another screening			(N)	4
				3
				2
				1

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Background Information

14. Do you know anyone else who has been screened for colorectal cancer?
a) Yes (A) **Go to question 15.**
b) No (B) **Go to question 16.**
15. If **“Yes”**: What is your relationship to that person(s) (**Check all that apply**):
a) Aunt/uncle (A)
b) Cousin (B)
c) Friend (C)
d) Grandparent (D)
e) Parent (E)
f) Sibling (F)
g) Spouse/partner (G)
h) Other (H)
16. Has a family member ever been diagnosed with any type of cancer?
a) Yes (A)
b) No (B)
c) Don't know (C)
17. In general, how concerned are you about developing any type of cancer in the future?
a) Very concerned (A)
b) Somewhat concerned (B)
c) Not at all concerned (C)
18. Has a family member ever been diagnosed with **colorectal** cancer?
a) Yes (A)
b) No (B)
c) Don't know (C)
19. In general, how concerned are you about developing **colorectal** cancer in the future?
a) Very concerned (A)
b) Somewhat concerned (B)
c) Not at all concerned (C)

20. Have you ever been told by a doctor or nurse that you have colon disease (e.g., irritable bowel syndrome, colitis, diverticulitis, Crohn's Disease)?
a) Yes (A)
b) No (B)
c) Don't remember (C)
21. Have you ever been told by a doctor or nurse that you have cancer?
a) Yes (A)
b) No (B)
c) Don't remember (C)
22. What is your race or ethnicity?
a) Black or African American (A)
b) White or European American (B)
c) Hispanic or Latino (C)
d) Asian, Asian American (D)
e) Native American (E)
f) Other (F)
23. What is the highest level of education that you have completed?
a) Less than high school (A)
b) High school graduate or GED (B)
c) Trade/technical education or associate's degree (C)
d) 4-year college degree (D)
e) Postgraduate training or degree (E)
24. Are you—
a) Male (A)
b) Female (B)

Thank you!

PLEASE DO NOT WRITE IN THIS AREA



[SERIAL]

