

**A survey of Indian Health Service and Tribal  
providers' colorectal cancer screening knowledge  
and practices, 2006  
(Preliminary report)**

**By Donald Haverkamp, MPH  
Public Health Prevention Specialist**

**December 13, 2006**

## **Acknowledgement**

I'd like to recognize the following people for their assistance with the development and distribution of this survey, and thank all of the IHS and Tribal providers who responded:

Linda Burhansstipanov, MSPH, DrPH, CHES

Nathaniel Cobb, MD

David Espey, MD

Richard Hoffman, MD, MPH

Marion Nadel PhD

Charles North, MD

Laura Seeff, MD

Mary Wachacha

Charlton Wilson, MD FACP

# **A survey of Indian Health Service and Tribal providers' colorectal cancer screening knowledge and practices, 2006**

## **Key Findings**

A recent nationwide survey of Indian Health Service (IHS) and Tribal providers regarding colorectal cancer (CRC) screening reveals that there are several areas in which improvements can be made. Addressing these issues may result in higher CRC screening rates among eligible American Indians and Alaska Natives.

Highlights from the full report:

- Many respondents (22%) recommend CRC screening to average-risk patients younger than age 50. Most guidelines recommend initiating screening at age 50 with average-risk patients.
- Many respondents recommend flexible sigmoidoscopy (24%) and colonoscopy (45%) at intervals that are inconsistent with national guidelines.
- About half of the respondents state that they complete a single, in-office fecal occult blood test (FOBT) card during a digital rectal exam as a method of screening for CRC.
- Nearly half (44%) reported that their facility has no reminder system in place to notify them when patients need CRC screening.
- Colonoscopy was perceived to be the most effective CRC screening procedure. However, only a small percentage of respondents perform colonoscopy (3%) or flexible sigmoidoscopy (4%) themselves.
- Respondents perform/make referrals for FOBT more frequently than other screening modalities.
- Respondents indicated that “Treatment capacity or funding” is a major barrier to CRC screening.

The attached report recommends:

- Provider education that reinforces guidelines on when and how often to screen patients for colorectal cancer.
- Provider education that discourages the practice of using a single, in-office FOBT sample, following digital rectal exam (DRE).
- Expand capacity to provide CRC screening within IHS facilities.
- Use of efficient systems that remind providers and patients when colorectal cancer screening is due.

## **Abstract**

### **Background**

We conducted a nationwide survey of IHS and Tribal providers regarding CRC screening knowledge, attitudes, and practices.

### **Methods**

We developed a survey by adapting (to an Indian health context) questions from previous regional and national CRC surveys. We sent a survey link to IHS/Tribal providers through electronic mail. Targeted providers included physicians, physician assistants, family nurse practitioners, and certified nurse-midwives providing clinical services.

### **Results**

Two hundred twenty nine providers responded to the survey. Colonoscopy was perceived to be the most effective CRC screening procedure. Yet few respondents perform colonoscopy (3%) or flexible sigmoidoscopy (4%) themselves, performing fecal occult blood tests (FOBT) more frequently. Some respondents (22%) recommend CRC screening to patients under age 50, and flexible sigmoidoscopy (24%) and colonoscopy (45%) at intervals that are inconsistent with national guidelines. About half of the respondents complete a single, in-office FOBT card during a DRE. Nearly half (44%) reported that their facility has no reminder system in place to notify them when patients need CRC screening.

### **Conclusions**

This survey suggests that IHS/Tribal providers are knowledgeable about CRC screening, although education around when and how often to screen for CRC is needed. Screening with a single card, in-office FOBT should be discouraged. Capacity for CRC screening in IHS facilities needs to be expanded. There is a need for efficient provider/patient reminder systems.

## **Introduction**

Although the colorectal cancer (CRC) mortality rate for American Indians and Alaska Natives (AI/AN) is lower than the rate for all races combined in the United States, there are important regional differences in rates.<sup>1</sup> The CRC mortality rates for AI/AN in both the Alaska and Northern Plains regions are significantly higher than the CRC mortality rate for all races combined in the United States.<sup>1,2</sup> When comparing the period 1996-2001 with 1990-1995, the CRC mortality rate among AI/AN increased 15 percent, whereas the United States all races rate dropped by 11 percent.<sup>1</sup>

When CRC is found early and treated, the 5-year relative survival rate is 90%, and since screening rates are low for CRC, less than 40% of these cancers are found early.<sup>3</sup> American Indians and Alaska Natives are more likely to be diagnosed with CRC at a distant stage compared to non-Hispanic whites and Asian Americans/Pacific Islanders.<sup>4</sup>

Through timely screening, CRC can be detected early or even prevented. One of the objectives of Healthy People 2010 is to “Increase the proportion of adults who receive a CRC screening examination”. To realize this objective, targets have been set to increase to 50 percent the proportion of adults ages 50 years and older who have received a fecal occult blood test (FOBT) within the preceding two years, and to increase to 50 percent the proportion of adults ages 50 years and older who have ever had a sigmoidoscopy. Results from the National Health Interview Survey in 2000 show that only 30.6% of AI/AN reported having had either (or both) an FOBT in the preceding year and an endoscopy procedure (either flexible sigmoidoscopy or colonoscopy) during the past 5 years, compared to 39.4% of the total United States population.<sup>4</sup>

To learn more about knowledge, attitudes, and practices of IHS and Tribal providers regarding CRC screening, the Indian Health Service, with the assistance of assignees from the Centers for Disease Control and Prevention, developed the IHS Provider Survey on Colorectal Cancer Screening Practices. The survey of IHS and Tribal primary care providers gathered current data on CRC screening practices in the IHS/Tribal health care system, and identified barriers to screening. It also gauged the interest level among providers in acquiring the skills necessary to perform flexible sigmoidoscopy and/or colonoscopy. We will use this information in the development of a strategic plan to increase CRC screening rates among AI/AN.

## **Methods**

### **Survey design and data collection**

Questions from previous national and regional provider surveys on CRC screening were adapted for IHS and Tribal providers. Once the survey was developed we created a web-based version using “Survey Monkey” software, designed for online data collection and survey completion. The survey took approximately 10 minutes to complete and contained the following sections: knowledge and attitudes, practices, perceived barriers, education/training, and provider and practice demographics. The survey only asked

respondents to provide the IHS Area and Service Unit where they worked, what type of provider they are, and their specialty. Respondents could also choose to not respond to any particular question. No attempt was made to identify any respondents.

### **Sampling methods**

The survey was open to physicians (MD/DO), physician assistants (PA), family nurse practitioners (FNP), and certified nurse-midwives (CNM) currently providing clinical services at an IHS or Tribal facility. No comprehensive list of all IHS and Tribal providers exists, so we sent the web-based survey link to Service Unit Clinical Directors through the National Council of Clinical Directors listserv, with instruction to forward to all providers in their Service Units.\* Through this method, we collected a convenience sample of IHS and Tribal providers from all IHS Areas.

### **Statistical analysis**

Descriptive statistics summarizing results by provider type and screening modality were generated. Statistical significance was determined using the Chi square test.

## **Results**

### **Respondent characteristics**

A total of 229 IHS and Tribal providers responded to the web-based survey during a four week period. It is not possible to calculate the response rate for this survey. Because of the method of distributing the survey, we could not know how many providers actually received the email that contained the link to the online survey.

Almost two thirds of the survey respondents were physicians. The “other” provider type responses included: OB-GYN Nurse Practitioner, Adult NP, Optometric Physician, PHN, CRNA, Behavioral Health Specialist, FNP/CNM, and a Pediatrician who does general practice.

Overall, over two thirds of the respondents worked in family practice. All of the FNP respondents indicated that they were in family practice. Ninety percent of the PA respondents and 67% of the MD respondents were from family practice settings. The “other” specialty responses included: preventive health, administration, general practice, behavioral health, anesthesia, various combinations of specialty types, etc.

---

\* A Service Unit is the basic health organization for a geographic area served by the IHS, just as a county or city health department is the basic health organization in a state health department. The Service Units are grouped into 12 larger cultural-demographic management jurisdictions which are administered by IHS Area Offices.

Table 1: Survey respondents by provider type and specialty  
(missing = 17)

	Emergency Medicine	Family Practice	General Surgery	Internal Medicine	OB- GYN	Other	Provider Type Totals N (%)
CNM	0	0	0	0	8	0	8 (3.8)
FNP	0	43	0	0	0	0	43 (20.3)
MD/DO	1	88	4	19	6	13	131 (61.8)
PA	0	19	1	0	1	0	21 (9.9)
Other	0	0	0	1	1	7	9 (4.2)
Specialty Totals N (%)	1 (0.5)	150 (70.8)	5 (2.4)	20 (9.4)	16 (7.5)	20 (9.4)	212 (100.0)

Respondents stated that they were from the following Indian Health Service Areas (Where % refers to the percent of total survey respondents, followed by total number of respondents from that IHS Area):

- Aberdeen 10.5% (22)
- Alaska 11.4% (24)
- Albuquerque 12.4% (26)
- Bemidji 1.9% (4)
- Billings 5.2% (11)
- California 12.4% (26)
- Nashville 2.9% (6)
- Navajo 17.6% (37)
- Oklahoma 11.4% (24)
- Phoenix 7.1% (15)
- Portland 5.2% (11)
- Tucson 1.9% (4)

[missing = 8.3% (19)]

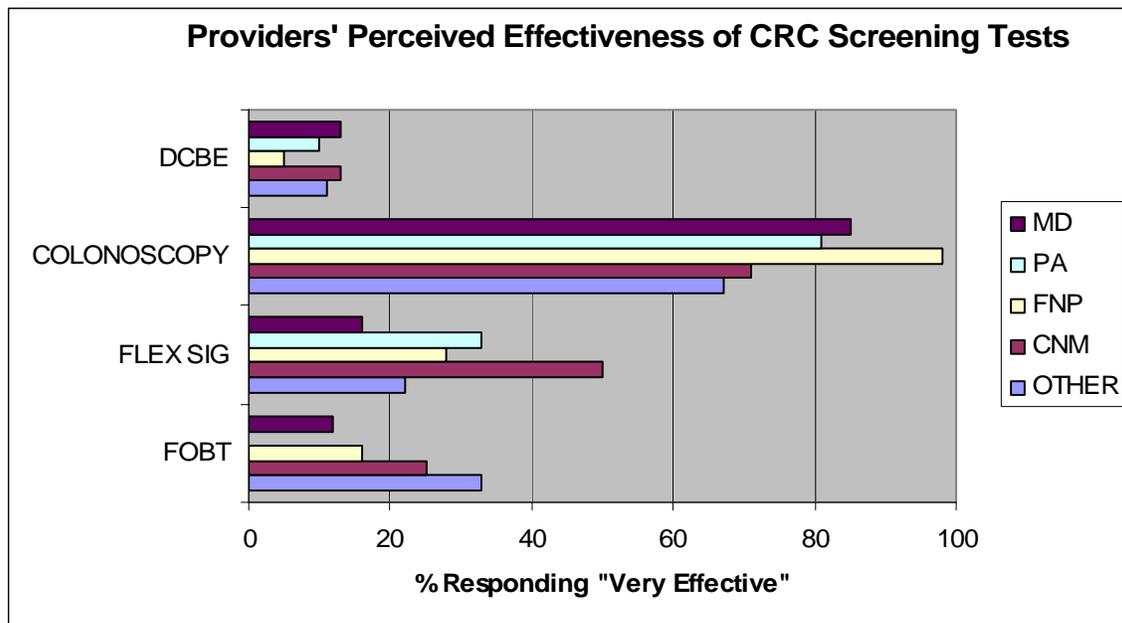
Fifty-two percent of all survey respondents work primarily in rural settings (population of less than 2,500). Another 25% work in suburban settings (population of 2,500 to 49,999), and 21% reported that they work in an urban setting (population of at least 50,000).

Seventy-six percent of all respondents reported that they spend more than 75% of their time in direct patient care (face to face patient care).

## Perceived CRC screening test effectiveness

Overall, eighty-four percent of respondents reported that they believe that colonoscopy is a “**very** effective” screening procedure in reducing CRC mortality. Figure 1 shows views about the effectiveness of the most common CRC screening procedures, by provider type.

Fig. 1



The following are the overall percentages of respondents indicating that they believe that the procedures are “**somewhat** effective” in reducing CRC:

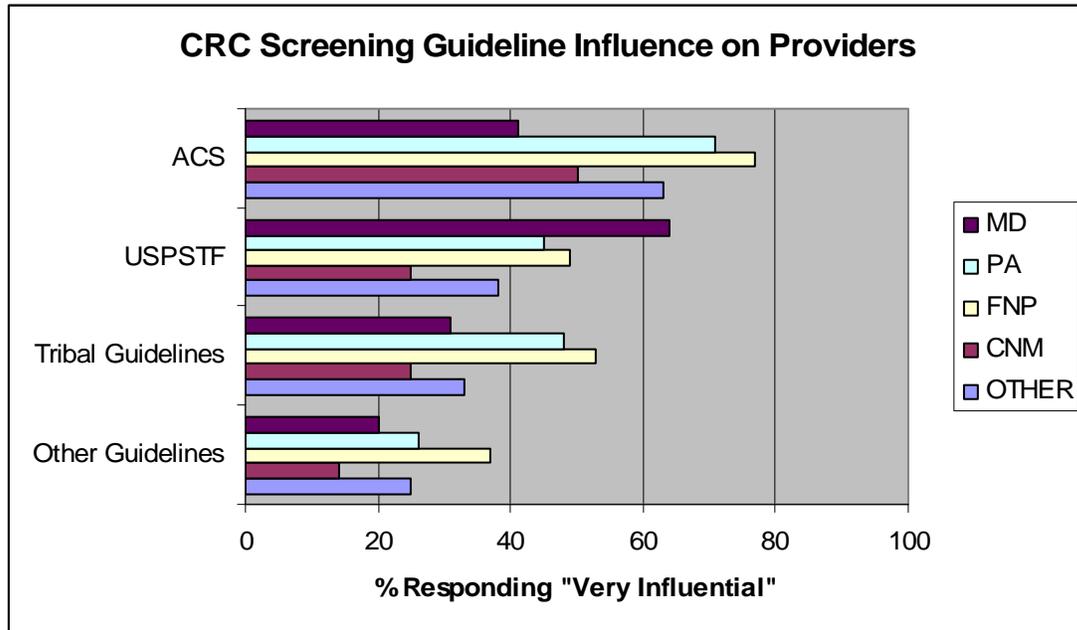
- Double Contrast Barium Enema (DCBE) ..... 63%
- Colonoscopy .....15%
- Flexible sigmoidoscopy .....73%
- FOBT .....69%

## Influence of screening guidelines

Guidelines from the United States Preventive Service Task Force (USPSTF) and the American Cancer Society (ACS) were “**very** influential” in provider decisions, for 55.6% and 53.1% of all respondents, respectively. The ACS seemed to be more influential for physician assistants and family nurse practitioners than for physicians. Around three quarters of physician assistants, and family nurse practitioners reported the ACS as “**very** influential”, while only 41% of physicians reported the ACS as “**very** influential”. Physicians seemed to be influenced more by recommendations of the USPSTF; with almost two thirds of physician respondents ranking the USPSTF recommendations as being “**very** influential” (Figure 2). Tribal guidelines seem to be more influential than other specialty society guidelines.

Other specialty society guidelines and those from IHS or Tribal programs were more likely to be “**somewhat influential**” in decisions regarding CRC screening, with 59% and 43% of all respondents choosing this response category, respectively.

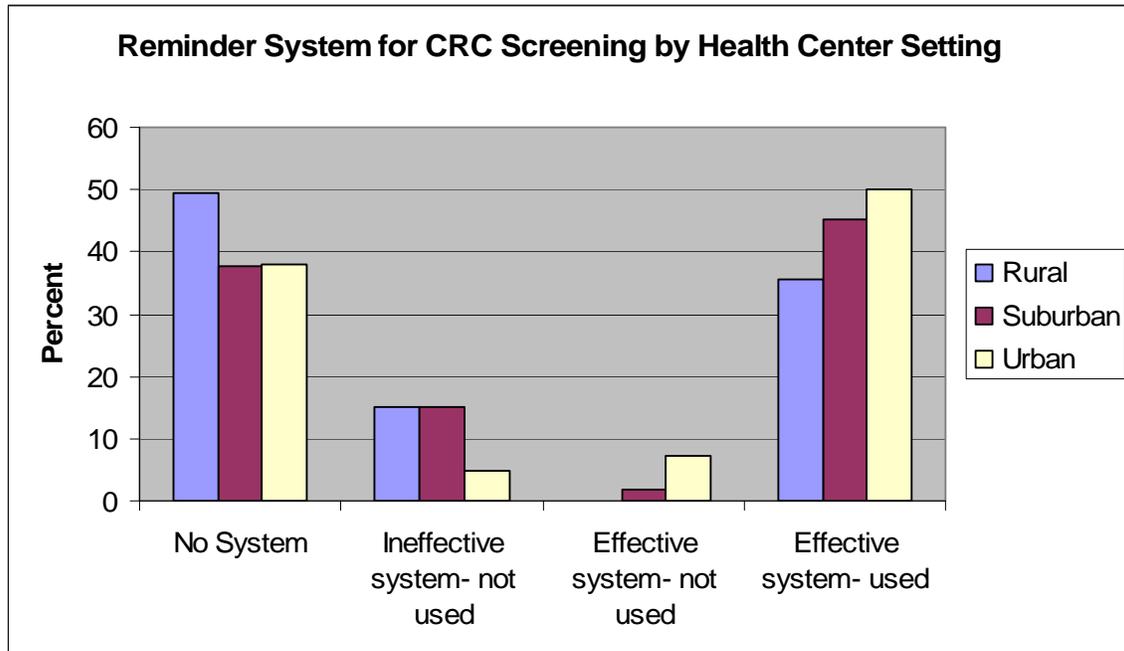
Fig. 2



### Reminder Systems

Overall, only 40% of all respondents reported that their clinic has a reminder system that alerts them when a patient is due for CRC screening. About 44% of providers reported that their facility has no system in place at all, and 14% reported that a system exists, but that it is ineffective, so they do not use it. The remaining 2% of respondents state that they have an effective system, but they don't use it. When considering healthcare center setting, nearly 50% of respondents working in rural facilities reported having no reminder system at all versus 38% of respondents in suburban facilities, and 38% of those in urban settings (Figure 3)

Fig. 3



**Practice**

About half (51%) of all responding providers reported that they nearly always recommend CRC screening to their average-risk patients. Another 32% of respondents reported that they “usually” recommend CRC screening. Only 1% of respondents stated that they “never” recommend CRC screening for their average-risk, asymptomatic patients.

Seventy-six percent of the respondents to this survey answered that they begin screening average-risk patients for CRC at age 50. Another 14% of respondents stated that they begin screening average-risk patients for CRC at age 40.

Focusing on the four most common methods for CRC screening, we looked at what percentages of providers recommend (or would recommend) these procedures at the suggested screening interval. Ninety-two percent of respondents answered that they recommend the FOBT every year. Seventy-six percent of respondents answered that they recommend the flexible sigmoidoscopy every 5 years for average risk patients. Fifty-five percent of respondents stated that they recommended colonoscopy every 10 years. However, another 31% stated that they recommended a colonoscopy every 5 years. Fifty-seven percent of respondents stated that they recommend the DCBE at 5 year intervals. Twelve percent of respondents recommended 10 year intervals for the DCBE. Another 8% recommended DCBE at the “20+” year interval.

Of providers who refer for or perform CRC screening, 12% responded that they did not perform any FOBT during a typical month with asymptomatic, average risk patients (Figure 4). Of the providers not performing FOBT for CRC screening, the most common reasons for not doing so were:

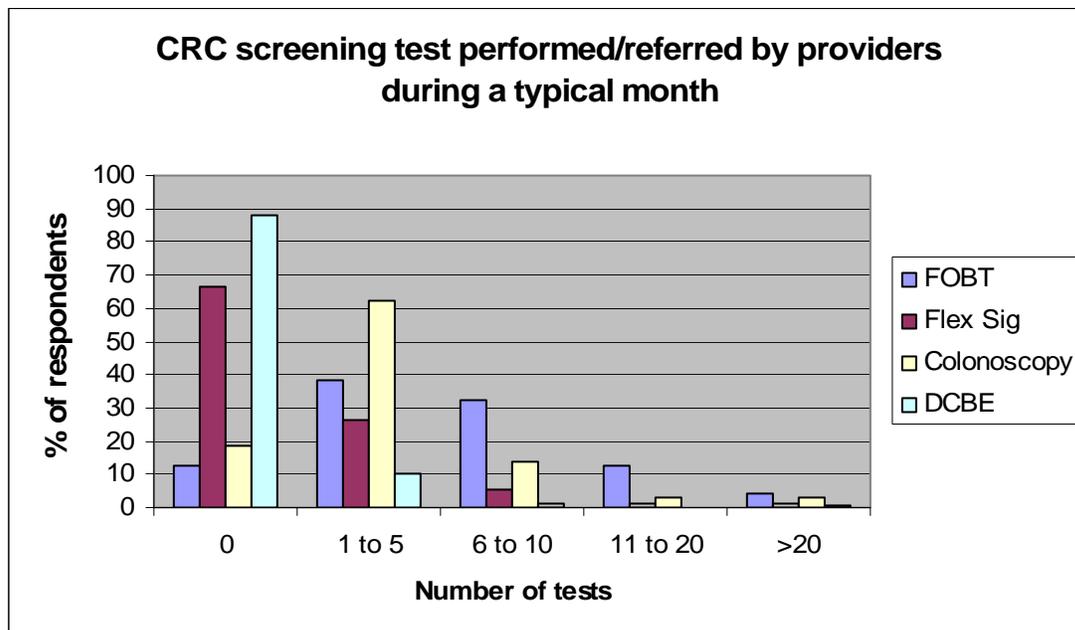
- Too many false positive results (42% of respondents)
- Too inconvenient for patients (19% of respondents)
- Poor patient compliance (19% of respondents)
- Too many false negative results (15% of respondents)

Only about 4% of providers stated that “no time” was a reason for not performing the test. Responses that were added in the “other reason” category included:

- Concern over high false positive rate due to the “*H. pylori* effect”
- Most patients on aspirin or unable to follow recommended diet
- On-site screening colonoscopy available
- Colonoscopy available

When asked about which method(s) they use to do FOBT, 49% responded that they performed FOBT by completing a single FOBT card in the office during a digital rectal exam. Seventy five percent also stated that they give or mail patient a set of three FOBT cards to complete at home.

Fig. 4

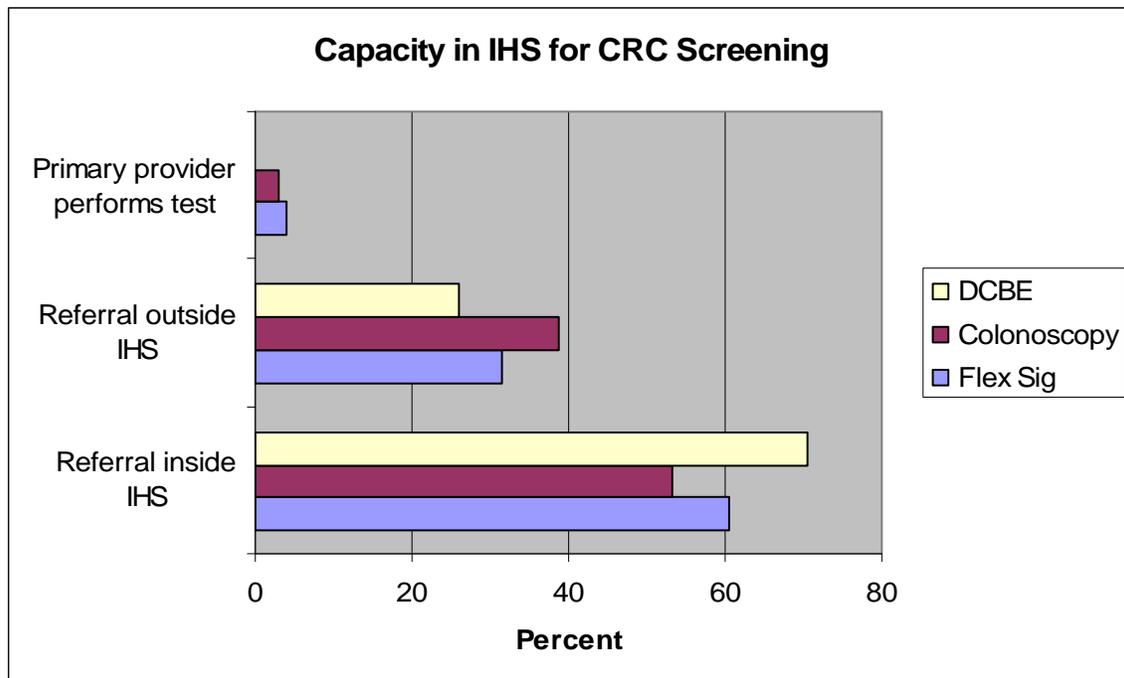


Among providers who refer for or perform CRC screening, 66% responded that they did not perform or make referrals for any flexible sigmoidoscopy tests during a typical month with asymptomatic, average risk patients (Figure 4). Only about 4% stated that they

performed the flexible sigmoidoscopy themselves and 32% of the recommended flexible sigmoidoscopies are referred to providers outside of IHS/Tribal practice (Figure 5). Among providers who refer for or perform CRC screening, 19% responded that they did not perform or make referrals for any colonoscopies during a typical month with asymptomatic, average risk patients (Figure 4). Only about 3% stated that they performed the colonoscopy themselves. Of respondents who made referrals for colonoscopy, 39% stated that they referred to providers outside of IHS/Tribal practice (Figure 5).

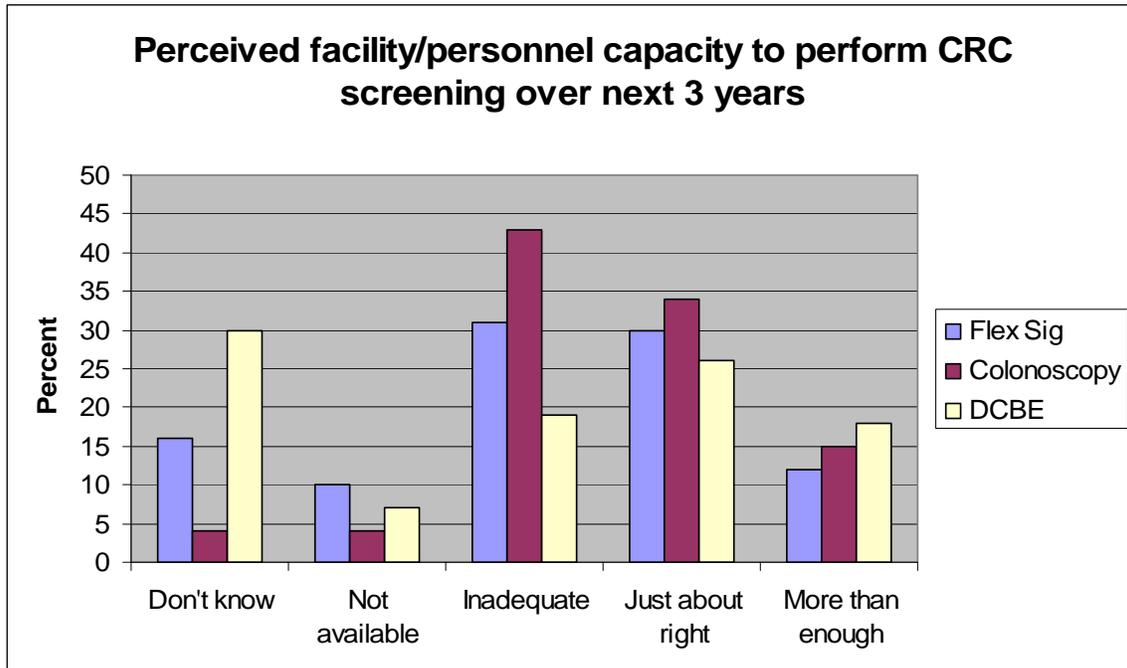
Among providers who refer for or perform CRC screening, 88% responded that they did not refer for any DCBE tests during a typical month with asymptomatic, average risk patients (Figure 4). The majority of these referrals (70%) are made to providers inside IHS/Tribal practice (Figure 5).

Fig. 5



When asked to comment on the capacity of facilities and personnel in their geographic area to perform cancer screening procedures over the next 3 years, 43% of respondents stated that they believed there was inadequate capacity to meet demand for colonoscopy, and 31% stated that they believed there was inadequate capacity to meet demand for flexible sigmoidoscopy (Figure 6). Thirty percent of respondents stated that they “didn’t know” about capacity to meet demand for double contrast barium enema (Figure 6).

Fig. 6



**Barriers**

Respondents indicated that there are several **major** barriers to CRC screening:

- Inadequate contract health funds .....49%
- Treatment capacity or funding .....46%
- Patient lacks insurance coverage for screening procedures .....43%
- Patient anxiety or embarrassment about screening tests .....41%
- Patient does not perceive colorectal cancer as a serious threat .....40%

Respondents also categorized several barriers as **minor** barriers. These included:

- Patient fear of finding cancer .....55%
- Transportation issues .....52%
- Time constraints for patients .....50%
- Patient anxiety or embarrassment about screening tests .....47%
- Patient belief that screening benefit is not worth discomfort involved ....44%
- Patient does not perceive colorectal cancer as a serious threat (41%)

Other barriers that were written in by survey respondents included (but were not limited to): Funding in general, low priority of preventive services, no time during patient visit, not enough surgeons, patient no-shows, difficulty with preparation regimen.

According to 17% of survey respondents, both FOBT and flexible sigmoidoscopy are tests that are “frequently declined” by patients. Just over 28% of respondents stated that

colonoscopy is “frequently declined” by patients. Only 11% stated that DCBE is “frequently declined”.

### **Patient education**

Only 4% of respondents stated that they do not educate patients about CRC screening. The most reported method of providing patient education was “providers discuss screening with their patients” (94%). Respondents also stated that “other staff members discuss screening with patients” (39%), and that “posters/brochures are displayed in exam/waiting rooms” (36%). Only 26% of providers stated that brochures about CRC screening are actively distributed to patients. Only 1 in every 5 providers stated that they use patient education protocols and codes from IHS to educate patients about CRC screening.

### **Training in CRC screening procedures**

When asked if they would participate in flexible sigmoidoscopy training if it were readily available at minimal/no charge, 38% responded either “yes” or “probably”. When asked if their facility would/does provide support (time, space, equipment, etc.) to someone who was trained to do flexible sigmoidoscopy, 29% responded either “yes” or “probably”, and 35% responded “no”. Of only the providers who stated that they would “yes or probably” participate in flexible sigmoidoscopy training, 44% also stated that their facility would “yes or probably” provide the needed support. When stratified by provider type, 46% of FNPs stated that they would participate in this type of training, versus 17% of MDs.

When asked if they would participate in colonoscopy training if it were readily available for you at minimal/no charge, 42% responded either “yes” or “probably”. When asked if their facility would/does provide support to someone who was trained to do colonoscopy, 37% responded either “yes” or “probably”, and 36% responded “no”. Of only the providers who stated that they would “yes or probably” participate in colonoscopy training, 57% also stated that their facility would “yes or probably” provide the needed support. When stratified by provider type, 52% of physician assistants stated that they would participate in this type of training, versus 30% of MDs.

## **Discussion**

Results from this survey of IHS/Tribal providers were similar to those from a 2000 national CRC screening survey of primary care physicians<sup>5</sup>, which also covered all of the most common CRC screening methods (FOBT, sigmoidoscopy, colonoscopy, and DCBE).

One key finding from our survey is that many providers are still utilizing the in-office FOBT after performing DRE. This is a poor screening method for CRC and should not be recommended as the only test. Trauma from DRE may cause bleeding. In one study, when digital FOBT was performed as part of a primary care physical examination, negative results did not decrease the odds of advanced CRC<sup>6</sup>. In another study, the first test card would have missed 42 percent of cancers detected by screening<sup>7</sup>.

Current guidelines from ACS, USPSTF, among others, recommend that CRC screening in asymptomatic, average-risk patients begin at age 50. However, twenty two percent of the survey respondents indicated that they recommend CRC screening in average risk patients prior to age 50. There is also inconsistency with the intervals that are recommended for repeating certain types of CRC screening. Most respondents (92%) stated that the FOBT should be repeated annually. However, the recommended intervals for other CRC screening tests seemed to be less clear to respondents. For example, only 55% of respondents selected the recommended 10 year interval for colonoscopy, with another 31% recommending the test every 5 years. Providers indicated that certain CRC screening guidelines, such as those from ACS and USPSTF, can be very influential. Education that reinforces these guidelines, along with tribal guidelines that are available, can be utilized to improve the quality and timeliness of CRC screening by IHS/Tribal providers.

We also found that the lack of a reminder system for CRC screening, and the lack of use of existing systems, is a problem at many IHS/Tribal healthcare centers. Based on survey results, this may be more of a problem in rural settings. Size and/or type of facility may be a confounder when looking at results by healthcare center setting. The Task Force on Community Preventive Services found “sufficient evidence” to recommend client reminders as an effective way to increase CRC screening. Visit the following link to learn more about this recommendation:

<http://www.thecommunityguide.org/CANCER/screening/ca-screen-int-cc-client-remind.pdf> .

Survey results suggest that about one third of CRC screening tests (not including FOBT) are referred to providers outside of IHS. Survey responses also indicate that “Treatment capacity or funding” is a major barrier to CRC screening as well. These are possible indications that the capacity does not exist within IHS to offer certain CRC screening procedures to patients. The survey also shows that only a very small percentage of providers are performing flexible sigmoidoscopy and/or colonoscopy themselves, and that there is substantial interest in receiving training to do these procedures.

One challenge to increasing colorectal cancer screening rates within a healthcare system is to make screening services available to all of its eligible population. The barriers most often categorized as “major barriers” by survey respondents were “Inadequate contract health funds” and “treatment capacity or funding”, indicating that screening services are not available to all AI/AN.

Survey respondents also perceived that patients often lack insurance coverage for CRC screening procedures. One survey from California concluded that people are more likely to be screened for CRC if they have health insurance and a regular source of health care <sup>8</sup>.

Most respondents saw “patient does not perceive colorectal cancer as a serious threat” as either a major or minor barrier to getting CRC screening. This needs to be addressed through patient education efforts about this type of cancer.

When asked to write in suggestions that would make them more likely to screen for CRC, about 29% of respondents gave suggestions. These generally fell into four areas:

- Need for reminder system (for provider and patient)
- Education for patients and staff
- Need for more capacity (staff, equipment, and funding)
- More time with patients

Limitations of the survey included use of a convenience sample, inability to gauge the response rate precisely, and dependence upon on providers to state their own screening practices.

Given the results of this survey, we make the following summary recommendations:

Providers should:

- Advise every average-risk, asymptomatic patient, age 50 and over, to get screened for CRC.
- Provide education to patients regarding benefits of CRC screening.
- Discontinue practice of performing in-office, single sample FOBT.

Clinic Managers should:

- Work to reduce bureaucratic barriers to screening.
- Work to allocate more time for providers to spend with patients on preventive services.

Quality Improvement staff should:

- Ensure that staff members are cognizant of the most current CRC screening guidelines, by providing continuing education opportunities to providers.
- Put in place reminder systems that notify provider and/or patient of the need for CRC screening.
- Work to increase capacity to provide various options for CRC screening within IHS facilities.
- Provide patients with access to health education materials regarding CRC screening.

## References

1. Espey DK, Paisano RE, and Cobb N. Regional patterns and trends in cancer mortality among American Indians and Alaska Natives, 1990-2001. *Cancer* 2005; 103: 1045-53.
2. Espey DK, Paisano RE, and Cobb N. Cancer mortality among American Indians and Alaska Natives: Regional differences, 1994-1998. Indian Health Service. IHS Pub. No. 97-615-28, revised October 2003. Rockville, MD.
3. Centers for Disease Control, colorectal cancer screening rates. [http://www.cdc.gov/colorectalcancer/statistics/screening\\_rates.htm](http://www.cdc.gov/colorectalcancer/statistics/screening_rates.htm) Accessed on January 19, 2006.
4. American Cancer Society, Colorectal cancer facts & figures, Special Edition. 2005. <http://www.cancer.org/downloads/STT/CAFF2005CR4PWSecured.pdf> Accessed on January 19, 2006.
5. Klabunde CN, Frame PS, Meadow A, Jones E, Nadel M, and Vernon SW. A national survey of primary care physicians' colorectal cancer screening recommendations and practices. *Preventive Medicine* 2003; 36: 352-362.
6. Collins JF, Lieberman DA, Durbin TE, et al. Accuracy of screening for fecal occult blood on a single stool sample obtained by digital rectal examination: A comparison with recommended sampling practice. *Annals of Internal Medicine* 2005; 142: 81-86.
7. Yamamoto M, Nakama H. Cost-effectiveness analysis of immunochemical occult blood screening for colorectal cancer among three fecal sampling methods. *Hepatology* 2000; 47(32):396-99.
8. Etzioni DA, Ponce NA, Babey SH, Spencer BA, et al. A population-based study of colorectal cancer test use: results from the 2001 California Health Interview Survey. *Cancer* 2004; 101 (11): 2523-32.