# Maryland Cancer Survey

# Physician Survey of Cancer Screening Practices

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**Cancer Prevention, Education, Screening and Treatment Program**

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**Maryland Cancer Survey**

**Physician Survey of Cancer Screening Practices, 2004**

**Results of a Pilot Study**

**Highlights**

The Maryland Cancer Survey Physician Survey of Cancer Screening Practices (MCS-PS) was a pilot study conducted in Summer 2004. The major impetus was the Maryland Cancer Survey (MCS) 2002, a population-based landline telephone survey of Maryland adults, age 40 years and older, where one prominent reason respondents gave for not undergoing cancer screening was **"the physician did not recommend it."** The MCS-PS was sent to a sample of primary care physicians (PCPs) consisting of physicians who practice general internal medicine, family practice, or general medicine and obstetrician/gynecologists (OBGYNs) practicing in Maryland to gather information on the recommendations physicians give to their patients regarding cancer screening. Among respondents, we found:

- The vast majority of physicians recommended screening for one or more cancers for their average risk clients.
- Screening recommendations for colorectal cancer (CRC) and breast and cervical cancers varied between PCPs and OBGYNs.
- Physicians practicing in rural areas were more aware of the cancer screening services provided by their local health departments than physicians practicing in either urban or suburban areas.

- **Colorectal Cancer Screening**
  - 75% of physicians recommended home fecal occult blood test (FOBT) and 70% recommended or performed in-office FOBT.
  - 87% of physicians recommended colonoscopy while 24% recommended flexible sigmoidoscopy.
  - Colonoscopy every 10 years was the screening test most commonly recommended for average risk patients (by 47% of physicians), followed by colonoscopy every 3-5 years (by 27%).

- Colonoscopy every 3-5 years was recommended by almost 80% of physicians for patients with a family history of CRC or polyps.
- While 52% of physicians reported they had been trained to perform sigmoidoscopies only 5% were currently performing that procedure.

- **Prostate Cancer Screening**
  - 90% of PCPs recommended the prostate specific antigen (PSA) test to their average risk male patients for prostate cancer screening.
  - Of those who recommended screening with PSA, 63% began screening average risk patients at age 50, while 26% began at age 40.
  - Over 60% of PCPs did not specify an age at which PSA testing should be stopped.
  - For men with a family history of prostate cancer, 12% of PCPs recommended screening at less than 40 years of age, while 68% thought screening should begin at 40-44 years of age.

- **Women's Health**
  - Pap testing was recommended or performed by 90% of PCPs and 99% of OBGYNs.
  - Mammography was recommended by 98% of physicians.
  - 68% of physicians who recommended mammography said screening should begin at age 40 years; 22% said screening should begin before age 40; 10% said screening should begin later than age 40.

- **Strengths of the MCS-PS**
  - The survey was offered to a large number of PCPs and OBGYNs practicing throughout Maryland (3,190).
  - The questionnaire asked about several different types of cancer screening tests.

- **Limitations**
  - After excluding 510 physicians for non-eligibility (i.e., those who were not PCPs, did not practice in Maryland, or were deceased), the response rate for the survey was

25.4% (680/2,680). The generalizability of our findings to the population of all Maryland PCPs and OBGYNs is not known.

- Rural providers were over-sampled compared to urban providers. Because the responses were anonymous, we were unable to identify respondents as rural or urban providers and were therefore unable to: 1) calculate an urban and rural response rate, and 2) weight the survey responses back to the population of Maryland providers.
- Many questions in the survey were open-ended, allowing respondents to answer in a variety of ways. Subsequently, it was necessary to recode many answers.
- All answers were self-reported. No medical chart reviews were done to verify whether the providers' clients had screening services that matched the providers' self-reported recommendations. While questions were asked to elicit screening recommendations, the survey may have measured physicians' knowledge and not necessarily their practices.

- **Recommendations**
  - Based on the results of the pilot survey, interventions to increase the knowledge of providers or change the practices of providers in Maryland could focus on:
    - The age at which screening for cancers should begin for people in various risk groups;
    - The intervals for repeat screenings for CRC based on procedure and risk;
    - The use of the in-office FOBT test. Recent studies show that it should **not** be used as the only CRC screening test; and
    - Educating PCPs about programs and services provided by local health departments.
  - If another survey were done in the future, the following areas should be investigated before the survey was repeated:
    - Contact non-responders by telephone to determine eligibility and to increase response rate;
    - Record whether respondents are from urban or rural counties, to weight the responses according to the sampling scheme;

- Use more focused and fewer open-ended questions to better determine screening practices;
- Consider including non-physician primary health care providers; and
- Consider providing greater incentives, such as paying providers for participating in the survey.

## Section 1 – Introduction

Cancer is the second leading cause of death in Maryland after heart disease. In 2001, there were 23,038 cases of cancer reported (excluding non-melanoma skin cancer) and 10,179 deaths due to cancer.[1] Primary care physicians (PCPs) who practice internal medicine, family practice, and general medicine, and physicians who practice obstetrics and gynecology or gynecology only (OBGYNs) have the important role of recommending, ordering, and/or performing the tests and procedures for screening and diagnosis of cancer. Guidelines for screening and early detection of cancer in asymptomatic people have been developed by various scientific and expert groups (Table 1-1). For colorectal, breast, and cervical cancer, guidelines generally concur about the need for screening, the age at which screening is recommended, the tests that should be performed, and the screening intervals. In contrast, screening for prostate cancer is more controversial, with less agreement among guidelines.

In 2002, the Maryland Cancer Survey (MCS) found that one of the most important factors contributing to whether an individual received a cancer screening test was a health care provider's (HCP) recommendation to have that test. For example, among Marylanders 50 years of age and older who reported that a provider recommended a lower gastrointestinal (GI) endoscopy, 85% reported they had a sigmoidoscopy or colonoscopy. Among those who reported that no provider had recommended endoscopy, only 12% had a sigmoidoscopy or colonoscopy.[2]

Assessment of physicians' knowledge, attitudes, and practices is important because of the impact that the physician's recommendation has on whether a person gets screened. The MCS found that one of the reasons people frequently reported for not having colorectal (CRC) or prostate cancer screening was because "the doctor did not order it." These findings led to the planning and development of a pilot survey in 2004, the Maryland Cancer Survey Physician Survey of Cancer Screening Practices (MCS-PS), to assess the recommendations physicians make to their clients for cancer screening. The purpose of the survey was two-fold: 1) to determine the cancer screening recommendations made to patients by PCPs and OBGYNs in Maryland, and 2) to determine whether the screening recommendations follow published guidelines. The Maryland Department of Health and Mental Hygiene, Center for Cancer

[1] Annual Cancer Report, Cigarette Restitution Fund Program, September 2004, Maryland Department of Health and Mental Hygiene. http://www.fha.state.md.us/cancer/html/crf_ann_can_rpt.html
[2] Maryland Cancer Survey 2002 report. http://www.fha.state.md.us/cancer/pdf/MCS_Report_2002-V3.pdf

Surveillance and Control contracted with the University of Maryland Baltimore, Department of Epidemiology and Preventive Medicine to develop and administer the MCS-PS to a sample of PCPs and OBGYNs who are in clinical practice in Maryland.

Having information about the cancer screening recommendations by physicians may enable the development of interventions to increase appropriate cancer screening practices in Maryland. This could improve the detection of cancer in its pre-malignant and early malignant stages while limiting inappropriate screening.

**Table 1-1 Cancer Screening Recommendations for Asymptomatic Adults**

| **Cancer and Risk Category** | **Professional Organizations** | | |
|---|---|---|---|
| **Colorectal Cancer** | **American Cancer Society** | **American Gastroenterological Association** | **US Preventive Services Task Force** |
| Average Risk | Annual FOBT starting at age 50 years<br>Sigmoidoscopy every 5 years starting at age 50 years<br>Annual FOBT and Sigmoidoscopy every 5 years starting at age 50 years<br>Colonoscopy every 10 years starting at age 50 years<br>DCBE every 5 years starting at age 50 years | Annual FOBT starting at age 50 years<br>Sigmoidoscopy every 5 years starting at age 50 years<br>Annual FOBT and Sigmoidoscopy every 5 years starting at age 50 years<br>Colonoscopy every 10 years starting at age 50 years<br>DCBE every 5 years starting at age 50 years | The USPSTF found fair to good evidence that several screening methods are effective in reducing mortality from colorectal cancer. The USPSTF concluded that the benefits from screening substantially outweigh potential harms, but the quality of evidence, magnitude of benefit, and potential harms vary with each method. |
| Increased Risk (family history of CRC or adenomatous polyps in a first degree relative (FDR) before the age of 60, personal history of adenomatous polyps or CRC, inflammatory bowel disease, familial CRC syndromes) | Screening with colonoscopy, beginning at an earlier age (at least by age 40 years) and at more frequent intervals, determined by the specific risk factor | Screening with colonoscopy, beginning at an earlier age (at least by age 40 years) and at more frequent intervals, determined by the specific risk factor | |
| **Prostate Cancer** | **American Cancer Society** | **American Urological Society** | **US Preventive Services Task Force** |
| Average Risk | The Prostate Specific Antigen (PSA) test should be offered annually, starting at age 50 years for men who have a life expectancy of at least 10 more years. | Early detection of prostate cancer should be offered to asymptomatic men 50 years of age or older with an estimated life expectancy of more than 10 years. | Insufficient evidence to recommend for or against routine screening |
| Increased Risk (men with a family history of prostate cancer in a FDR or men who are African American) | Men should be offered prostate cancer screening beginning at age 45 years and earlier if there is a strong family history in two or more relatives. | It is reasonable to offer testing at an earlier age to men with defined risk factors, including men with a FDR who has prostate cancer and African American men. | |

American Cancer Society. Accessed at http://www.cancer.org/docroot/home/index.asp. 02/28/2006
US Preventive Services Task Force, Guide to Clinical Preventive Services. Accessed at http://www.ahrq.gov/clinic/cps3dix.htm#cancer. 02/28/2006
American Gastroenterological Society. Accessed at http://www2.us.elsevierhealth.com/inst/serve?action=get-
American Urological Society. Accessed at http://www.cancernetwork.com/journals/oncology/o0002e.htm?_requestid=233923. 02/28/2006

**TABLE 1-1 CANCER SCREENING RECOMMENDATIONS FOR ASYMPTOMATIC ADULTS (continued)**

| Cancer and Risk Category | Professional Organizations | | |
|---|---|---|---|
| **Breast Cancer** | **American Cancer Society** | **American College of Obstetrics and Gynecology** | **US Preventive Services Task Force** |
| | **Mammography** | **Mammography** | **Mammography** |
| Average Risk | Begin annual mammography at age 40 years | Per American Cancer Society Guidelines | Screening mammography, with or without clinical breast examination (CBE), every 1-2 years for women aged 40 and older |
| Increased Risk (Women with a family history of breast cancer) | Speak with your physician about the best screening approach | | |
| | **Clinical Breast Exam (CBE)** | | **Clinical Breast Exam (CBE)** |
| Average Risk | For women in their 20's and 30's, CBE is recommended as part of a periodic health exam at least every 3 years. For women, age 40 years and older, CBE should be part of a periodic health exam preferably annually. | | Insufficient evidence to recommend for or against routine CBE alone to screen for breast cancer |
| **Cervical Cancer** | **American Cancer Society** | **American College of Obstetrics and Gynecology** | **US Preventive Services Task Force** |
| Average risk | Begin having Pap tests 3 years after the initiation of sexual intercourse or by age 21 years.<br><br>Women at age 30 years may have the test every 2-3 years if they have 3 normal Pap smears in a row and have not other risk factors. | Begin having Pap tests 3 years after the initiation of sexual intercourse or by age 21 years.<br><br>Women at age 30 years may have the test every 2-3 years if they have 3 normal Pap smears in a row and have not other risk factors. | Begin having Pap tests 3 years after the initiation of sexual intercourse or by age 21 years and screening every 3 years. |
| **Oral Cancer** | **American Cancer Society** | **American Dental Association** | **US Preventive Services Task Force** |
| | Screening exam should be done during a routine periodic health examination. | Recommends oral cancer screening with each dental examination | Insufficient evidence to recommend for or against routine screening |
| **Skin Cancer** | **American Cancer Society** | | **US Preventive Services Task Force** |
| | Screening exam should be done during a routine periodic health examination. | | Insufficient evidence to recommend for or against routine screening |

American Cancer Society. Accessed at http://www.cancer.org/docroot/home/index.asp. 02/28/2006
US Preventive Services Task Force, Guide to Clinical Preventive Services. Accessed at http://www.ahrq.gov/clinic/cps3dix.htm#cancer 02/28/2006
American College of Obstetrics and Gynecology. Accessed at http://www.acog.org/acog_districts/dist_notice.cfm?recno=1&bulletin=1698 02/28/2006
American Dental Association. Accessed at http://www.ada.org/prof/resources/pubs/jada/reports/oralcancer.asp 02/28/2006

## Section 2 – Methods for Survey Development, Data Collection, and Analysis

### 2.1 Survey Development

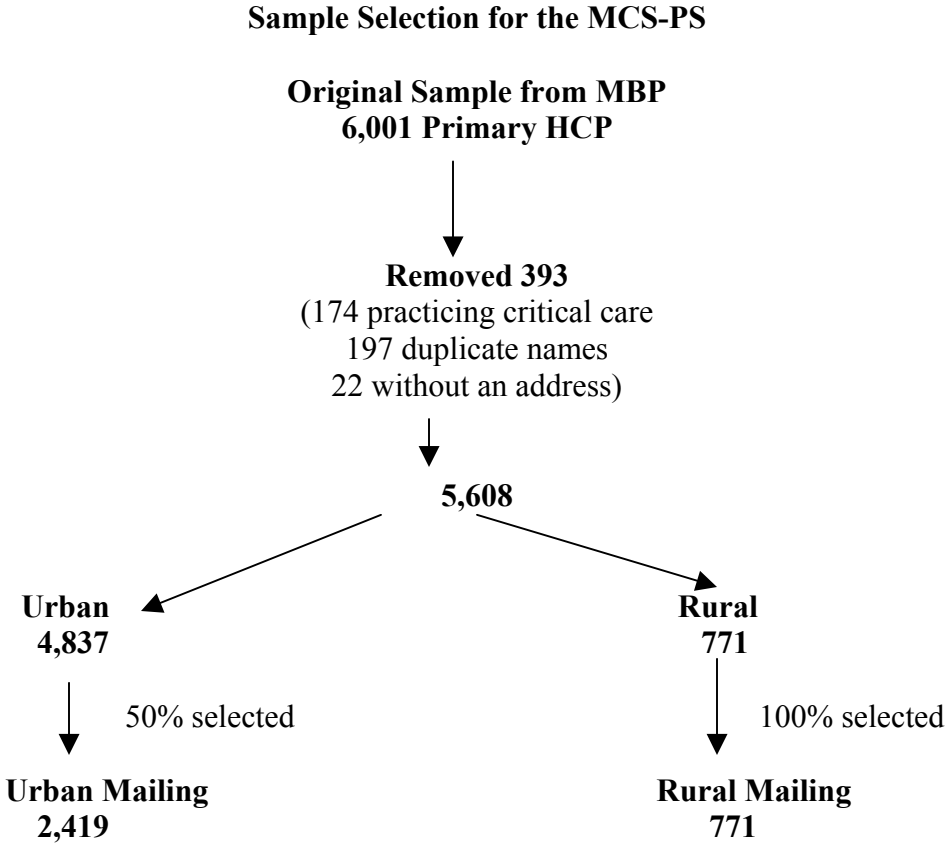
Staff of the Center for Cancer Surveillance and Control at the Maryland Department of Health and Mental Hygiene (DHMH) and the University of Maryland, Baltimore (UMB) developed a questionnaire based on the National Cancer Institute Survey of Colorectal Cancer (CRC) Screening Practices,[1] and questions on CRC screening and familial risk provided by Paul C. Schroy III, MD MPH.[2] Some questions were original to this survey. Each physician respondent was asked questions about his/her demographics, medical specialty, and sources of medical information that influence his/her recommendations on screening. The survey asked whether the provider ordered or performed a variety of cancer screening tests for asymptomatic, average-risk patients, the age of initiation of routine screening, and the frequency of screening. Physicians were asked which CRC test(s) they most frequently recommended to patients at average risk and to patients at increased risk. Regarding prostate cancer screening, the survey asked about the tests the provider most commonly recommended to men of average risk and to men with a family history of prostate cancer. The survey asked about the physician's knowledge of cancer screening services provided by local health departments and about whether the physician had ever referred patients for those services.

### 2.2 Sampling

We obtained a list from the Maryland Board of Physicians (MBP) of 6,001 physicians who practice Internal Medicine, Family Practice, or General Medicine (PCPs) or Obstetrics and Gynecology or Gynecology only (OBGYNs). Together this group can be considered to be primary care health care providers (HCPs). We removed from the sample 174 names listed as practicing critical care, 22 names with no address, and 197 duplicate names. The state was divided into two geographic regions: urban, consisting of Baltimore City and the seven counties in the Metropolitan Baltimore-Washington, D.C. area (Anne Arundel, Baltimore, Carroll, Harford, Howard, Montgomery, and Prince George's counties) and rural, consisting of the remaining 16 counties in Western Maryland (Allegany, Frederick, Garrett, and Washington

[1] Survey of Colorectal Cancer Screening Practices, http://healthservices.cancer.gov/surveys/colorectal/prim0520.pdf
[2] Barrison AF, Smith C, Oviedo J, Heeren T, and Schroy PC. Colorectal cancer screening and familial risk: a survey of internal medicine residents' knowledge and practice patterns. American Journal of Gastroenterology 2003 June98 (6)1410-14

counties), Southern Maryland (Calvert, Charles, and St. Mary's), and the Eastern Shore of Maryland (Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester counties). The final list included 4,837 physicians with urban mailing addresses and 771 physicians with rural mailing addresses. We selected all rural physicians, and randomly selected 50% of the urban physicians, making an initial eligible physician sample of 3,190.




In the summer of 2004, an introductory letter was mailed along with the survey instrument to the 3,190 physicians, inviting them to participate in the survey and to respond either via the Internet or by returning an enclosed printed survey via U.S. mail. The introductory letter stated that each respondent would be entered into a drawing for one of ten $100 catalog gift certificates to an outdoor retailer as thanks for participation. No other financial incentive was offered. After four weeks, a reminder postcard was sent to those who had not returned the survey. Approximately four weeks after the postcard, another reminder mailing with the survey form was sent out to non-respondents. The Institutional Review Board at the UMB approved the project. The Institutional Review Board at DHMH reviewed the project.

## 2.3 Response to the Survey

Of the 3,190 physicians who initially received mailings, 322 names were removed from the eligible list: 73 physicians notified us that they did not practice a primary care specialty, 162 surveys were returned because of incorrect address, 76 were retired, 5 did not practice in Maryland, 4 refused to participate, and 2 were deceased. There was no response from 2,000 physicians after three mailings. A total of 868 surveys were returned. From these 868, we removed the responses of 188 physicians from the analytic dataset: 172 did not practice primary care or obstetrics/gynecology (reported practicing a medical sub-specialty, being a researcher, in public health, an administrator, etc.), 13 did not provide a medical specialty, and 3 did not practice in Maryland.

Of the 680 eligible physicians who completed the survey, 535 (79%) were PCPs, 145 (21%) were OBGYNS; 617 (91%) returned the survey via U.S. mail and 63 (9%) responded via the Internet website. The response rate was 25.4%, which is calculated as the number of known primary care HCPs (PCPs and OBGYNs) who responded to the survey divided by the number of known primary care HCPs plus the number of possible primary care HCPs (for whom we had no additional information (680/2,000+680)). After three mailings, no further attempts were made to contact the 2,000 non-responders to determine whether they were still in practice in Maryland.

## 2.4 Statistical Analysis

The data were analyzed as an unweighted convenience sample using SAS 9.1. We calculated frequencies and, where appropriate, reported frequencies for PCPs, OBGYNs, and all respondents combined. When reviewing the tables 'n' stands for the number of HCPs who answered a question, 'N' stands for the number that answered yes to a question or had that characteristic. Because this survey was anonymous, the specific response rates for urban and rural areas of practice are not known. We asked physicians to name the jurisdiction(s) in which they practice; because of an 18% non-response rate to this question, we have not included these data; 97% of respondents described their primary practice location as being "urban," "suburban," or "rural," but the counties we used for urban and rural sample selection may or may not have matched their self-selected categorization. Because of these limitations, we have not weighted the data by our sampling frame of urban and rural areas of practice.

## Section 3 – The Survey Sample-Description and Demographics

The analytic sample was comprised of 680 primary care HCPs licensed to practice medicine in Maryland who responded to the MCS-PS. Seventy-nine percent (79%) of the respondents reported that they were PCPs and 21% reported OBGYN as their primary specialty. The distribution of medical specialties among the responding physicians is shown in Table 3-1.

**TABLE 3-1 Distribution of Medical Specialties among Physician Respondents.**

| Medical Specialty | N | Percent |
|---|---|---|
| Internal medicine | 341 | 50.2% |
| Family medicine | 185 | 27.2% |
| General medicine | 9 | 1.3% |
| OBGYN | 145 | 21.3% |

Approximately two-thirds of the responding physicians were between the ages of 40 and 59 years (Table 3-2). Male physicians made up 63% of the sample. Only 4% of the respondents reported Hispanic or Latino ethnicity. Whites comprised 63% of the respondents, African-Americans 5%, Asians 16%, and persons reporting "other" races 3%. For 13% of the sample, race was unknown.

Almost 80% of the reporting physicians have practiced medicine for over 10 years; 45% had practiced medicine at least 20 years. Over half reported practicing in suburban areas; 23% in urban areas, and 20% in rural areas.

Table 3-2 also shows demographic characteristics by practice type. Physicians who reported their specialty as OBGYN tended to be older and to have been in practice longer. Only 4% of the OBGYNs were under the age of 40, as compared to 19% of the PCPs. More than 32% of OBGYNs were 60 years or older, compared to less than 12% of PCPs. Of OBGYNs, 7% have been in practice under 10 years, compared to 24% of PCPs. In general, OBGYNs have practiced longer than the PCPs, with 27% in practice for 30 or more years, compared to less than 14% of PCPs. The remaining descriptive characteristics (gender and area of primary practice) were fairly evenly distributed across practice type.

Table 3-3 shows the factors reported to influence a physician's cancer screening recommendations. Clinical evidence published in the medical literature was cited as "very influential" by the highest percentage of respondents (79%). American Cancer Society (ACS) and United States Preventive Services Task Force (USPSTF) recommendations are also "very

influential" in provider recommendations (60% and 59%, respectively). Twenty-one percent (21%) reported that third party reimbursement was "very" influential in their recommendations; 36% reported third party reimbursement was "somewhat influential," and 44% reported third party reimbursement was "not" influential at all. Forty-seven percent (47%) of responding physicians reported that continuing education, meetings, and conferences were "very" influential in their screening recommendations, while these meetings were "somewhat" influential for 47%.

**TABLE 3-2 DISTRIBUTION OF DEMOGRAPHIC VARIABLES BY MEDICAL SPECIALTY, AMONG PHYSICIAN RESPONDENTS**

| | All Specialities Combined (n=680) | | Internal Medicine, Family Medicine, General Medicine (n=535) | | Obstetrics and/or Gynecology (n=145) | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Age** | | | | | | |
| 30-39 years | 106 | 15.6% | 101 | 18.9% | 5 | 3.5% |
| 40-49 years | 238 | 35.0% | 197 | 36.8% | 41 | 28.3% |
| 50-59 years | 214 | 31.5% | 166 | 31.0% | 48 | 33.1% |
| 60-64 years | 49 | 7.2% | 29 | 5.4% | 20 | 13.8% |
| 65 years and older | 62 | 9.1% | 35 | 6.5% | 27 | 18.6% |
| Unknown/Unreported | 11 | 1.6% | 7 | 1.3% | 4 | 2.8% |
| **Gender** | | | | | | |
| Male | 426 | 62.7% | 326 | 60.9% | 100 | 69.0% |
| Female | 247 | 36.3% | 204 | 38.1% | 43 | 29.7% |
| Unknown/Unreported | 7 | 1.0% | 5 | 0.9% | 2 | 1.4% |
| **Ethnicity** | | | | | | |
| Hispanic | 26 | 3.8% | 21 | 3.9% | 5 | 3.5% |
| Non-Hispanic | 639 | 94.0% | 505 | 94.4% | 134 | 92.4% |
| Unknown/Unreported | 15 | 2.2% | 9 | 1.7% | 6 | 4.1% |
| **Race** | | | | | | |
| White | 428 | 62.9% | 329 | 61.5% | 99 | 68.3% |
| African American | 34 | 5.0% | 22 | 4.1% | 12 | 8.3% |
| Asian | 109 | 16.0% | 93 | 17.4% | 16 | 11.0% |
| Other | 22 | 3.2% | 20 | 3.7% | 2 | 1.4% |
| Unknown/Unreported | 87 | 12.8% | 71 | 13.3% | 16 | 11.0% |
| **Years in Practice** | | | | | | |
| <10 years | 138 | 20.3% | 128 | 23.9% | 10 | 6.9% |
| 10-19 years | 228 | 33.5% | 188 | 35.1% | 40 | 27.6% |
| 20-29 years | 196 | 28.8% | 142 | 26.5% | 54 | 37.2% |
| 30-39 years | 71 | 10.4% | 46 | 8.6% | 25 | 17.2% |
| 40 years or more | 40 | 5.9% | 26 | 4.9% | 14 | 9.7% |
| Unknown/Unreported | 7 | 1.0% | 5 | 0.9% | 2 | 1.4% |
| **Area of Primary Practice (self-reported)** | | | | | | |
| Urban | 154 | 22.7% | 123 | 23.0% | 31 | 21.4% |
| Suburban | 372 | 54.7% | 294 | 54.9% | 78 | 53.8% |
| Rural | 135 | 19.9% | 107 | 20.0% | 28 | 19.3% |
| Unknown/Unreported | 19 | 2.8% | 11 | 2.1% | 8 | 5.5% |

**TABLE 3-3 REPORTED FACTORS THAT MAY INFLUENCE A PHYSICIAN'S RECOMMENDATION FOR CANCER SCREENING**

| | Very influential | | Somewhat influential | | Not influential | |
|---|---|---|---|---|---|---|
| **Factors that may influence recommendations for cancer screening** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| Clinical evidence published in the medical literature (n=647) | 512 | 79.1% | 129 | 19.9% | 6 | 0.9% |
| American Cancer Society (ACS) recommendations (n=644) | 389 | 60.4% | 229 | 35.6% | 26 | 4.0% |
| United States Preventive Services Task Force (USPSTF) recommendations (n=624) | 370 | 59.3% | 206 | 33.0% | 48 | 7.7% |
| Continuing education and meetings (n=641) | 301 | 47.0% | 304 | 47.4% | 36 | 5.6% |
| American College of Obstetrics and Gynecology (ACOG) recommendations (n=606) | 258 | 42.6% | 207 | 44.6% | 78 | 12.9% |
| American Medical Association (AMA) recommendations (n=623) | 217 | 34.8% | 310 | 49.8% | 96 | 15.4% |
| Maryland Department of Health and Mental Hygiene recommendations (DHMH) (n=617) | 170 | 27.6% | 300 | 48.6% | 147 | 23.8% |
| American Society of Clinical Oncologists recommendations (ASCO) (n=569) | 137 | 24.1% | 269 | 47.3% | 163 | 28.7% |
| Third party reimbursement (n=590) | 122 | 20.7% | 211 | 35.8% | 257 | 43.6% |
| American Urological Association recommendations (AUA) (n=539) | 89 | 16.5% | 272 | 50.5% | 178 | 33.0% |

## Section 4 - Colorectal Cancer (CRC) Screening Recommendations

A variety of tests can be performed to screen for CRC. Physicians were asked about recommendations they make to their patients regarding the home fecal occult blood test (three specimen FOBT), in-office FOBT (single specimen), sigmoidoscopy, screening colonoscopy, double contrast barium enema (DCBE), and DNA testing of stool. Frequently recommended screening methods were assessed for asymptomatic patients aged 50 years and older according to CRC risk (average vs. increased risk). Finally, physicians were asked about their training in and performance of flexible sigmoidoscopies and colonoscopies. Results were stratified by practice type (PCP vs. OBGYN).

### 4.1 Home FOBT

Three-fourths (75%) of the sampled physicians reported that they routinely order home FOBT screening (Table 4-1). More PCPs order the home FOBTs (82%) than OBGYNs (52%). Of all respondents who recommend home FOBTs, 63% recommended that FOBT screening begin at the age of 50, while 29% recommended that screening start at 40-45 years. When asked about screening frequency, 90% of physicians who recommend home FOBT screening reported recommending the test annually. Overall, 84% of physicians did not recommend a specific age for cessation of home FOBT screening (82% of PCPs and 97% of OBGYNs).

### 4.2 In-office FOBT

Physicians were asked whether they routinely perform an in-office FOBT, following a digital rectal exam (DRE) in the doctor's office. Seventy percent (70%) of the sampled physicians reported routinely performing this screening test (Table 4-2). Of those physicians who reported performing the in-office FOBT, 47% recommended beginning this test when the patient reaches 50 years of age and 40% recommended starting at 40-45 years of age. Forty-nine percent (49%) of PCPs recommended starting screening before 50 years of age, compared with 67% of OBGYNs. When asked about screening frequency, almost 90% of all respondents reported performing an in-office FOBT annually for average-risk patients (88% of PCPs and 96% of OBGYNs). Eighty-seven percent (87%) of the responding physicians did not recommend a specific age for cessation of the in-office FOBT; this was nearly universal among

OBGYN respondents. Among PCPs, 12% recommended stopping in-office FOBT screening when patients are age 80 years or older.

### 4.3 Sigmoidoscopy Screening Recommendations

Only 24% of all respondents (26% of PCPs and 15% of OBGYNs) reported they routinely order or perform sigmoidoscopies for CRC screening (Table 4-3). Of those who order or perform sigmoidoscopies for cancer screening, 84% begin screening average-risk patients at 50 years of age. When asked about screening frequency, 59% of those who recommended routine sigmoidoscopy replied it should be done every five years; 33% responded that it should be performed at more frequent intervals. Overall, 73% did not recommend a specific age limit for cessation of routine sigmoidoscopies (70% of PCPs and 94% of OBGYNs).

### 4.4 Colonoscopy Screening Recommendations

Eighty-seven percent (87%) of the responding physicians reported they routinely order or perform colonoscopies for their average-risk patients (Table 4-4). PCPs were much more likely to routinely order colonoscopies (93%) than OBGYNs (64%) (Table 4-4). Of those who recommend colonoscopy for cancer screening, 93% recommended starting at 50 years of age for average-risk patients (92% of PCPs and 97% of OBGYNs). Among PCPs, almost 5% recommended starting colonoscopy at younger than 50 years of age. When asked about screening frequency for average-risk patients, 28% of the respondents recommended ordering a routine colonoscopy every 5 years, while 45% reported ordering a routine colonoscopy every 10 years. Frequency of recommended colonoscopy screening varied by clinical practice type: 47% of the PCPs recommended screening every 10 years, compared to 32% of OBGYNs. Those who practice OBGYN were more likely to recommend more frequent routine colonoscopy screening every 5 years (44%) compared to PCPs (25%). Overall, 73% of responding physicians did not recommend cessation of colonoscopies at a specific age. Ninety-four percent (94%) of OBGYNs did not recommend a specific age for cessation, compared with only 70% of PCPs. Twenty-two percent (22%) of PCPs recommended cessation of screening with colonoscopy by the age of 80 years.

Very few physicians order other screening tests for CRC. Only 7% of the surveyed physicians routinely order DCBEs for CRC screening and 3% order DNA probes in stool (data not shown).

### 4.5 CRC Screening by Cancer Risk Level

Chart 4-1 summarizes the proportions of PCPs and OBGYNs who recommended home FOBT, in-office FOBT, sigmoidoscopy, and colonoscopy to their average-risk patients. Physicians were then asked which screening method they **most frequently recommend** to asymptomatic patients age 50 years and older under two different risk scenarios: 1) patients at average-risk for developing CRC; 2) patients with a family history of CRC (increased risk for developing CRC). For patients at average-risk, physicians most often recommended a colonoscopy every 10 years (47%) (Table 4-5 and Chart 4-2). Less frequently recommended was colonoscopy every 3-5 years (27%) and annual FOBT with periodic flexible sigmoidoscopy (11%). Home FOBT testing (with or without a DRE) was recommended by 10% of physicians for average-risk patients. Colonoscopy screening (at either 3-5 or 10 year intervals) was recommended by 75% of PCPs and 67% of OBGYNs. Most clinical guidelines (e.g., American Gastroenterological Association, American Cancer Society) recommend that, if colonoscopy is done for screening in people of average-risk (i.e., no personal or first degree relative history of CRC or adenomas, and no personal history of inflammatory bowel disease, endometrial or ovarian cancer), the procedure should be done every 10 years. A higher proportion of PCPs (50%) recommended a 10-year screening interval compared to OBGYNs (34%).

Patients with a positive family history are considered to be at increased risk for developing CRC and should begin screening earlier and potentially receive colonoscopy screening at more frequent intervals. This was recognized by most of the surveyed physicians (Table 4-5 and Chart 4-3). Colonoscopy every 3-5 years was recommended by 79% of the respondents, followed by colonoscopy every 10 years (12%). PCPs were more likely than OBGYNs to recommend colonoscopy every 10 years for patients at increased risk (14% vs. 4%) and less likely to recommend annual FOBTs with flexible sigmoidoscopy every 5 years (3% vs. 9%).

Physicians were also asked whether they routinely ask their younger (less than 40 years of age), asymptomatic patients about a family history of CRC or adenomatous polyps. Overall,

24% of the physicians indicated that they do inquire about family history in younger asymptomatic patients (data not shown). By medical specialty, 26% of PCPs asked this of their younger patients, compared to only 15% of OBGYNs.

### 4.6 Training and Current Performance of Endoscopic Screening Tests

Physicians were asked whether they had ever received training in the performance of either flexible sigmoidoscopy or colonoscopy (Table 4-6). Over 60% of PCPs reported having been trained to do a flexible sigmoidoscopy, compared to only 12% of OBGYNs. Despite the high proportion of physicians who have been trained to perform sigmoioscopy, only 6.5% of the PCPs and none of the OBGYNs respondents currently perform this test. When analyzed by area of practice, 9.4% of rural PCPs reported they currently perform flexible sigmoidoscopies, followed by 6.9% of suburban PCPs, and 3.3% of urban PCPs (data not shown). A much smaller proportion of physicians in the survey reported training in performing colonoscopies (6%) and less than 1% currently perform the procedure in their practice.

**TABLE 4-1 RECOMMENDATION FOR CRC SCREENING WITH HOME FECAL OCCULT BLOOD TEST FOR ASYMPTOMATIC, AVERAGE-RISK PATIENTS, BY MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Do you routinely order a home FOBT for asymptomatic, average-risk patients? (n=661)** | | | | | | |
| Yes | 498 | 75.3% | 427 | 81.5% | 71 | 51.8% |
| No | 163 | 24.7% | 97 | 18.5% | 66 | 48.2% |
| **Recommended starting age for home FOBT screening for asymptomatic, average-risk patients (n=489)** | | | | | | |
| < 40 years | 39 | 8.0% | 36 | 8.6% | 3 | 4.2% |
| 40-45 years | 141 | 28.8% | 114 | 27.3% | 27 | 38.0% |
| 50 years | 307 | 62.8% | 266 | 63.6% | 41 | 57.8% |
| 55 years | 2 | 0.4% | 2 | 0.5% | 0 | 0.0% |
| **Frequency of routine home FOBT screening for asymptomatic, average-risk patients (n=483)** | | | | | | |
| Every year | 434 | 89.9% | 373 | 90.1% | 61 | 88.4% |
| Every 2-5 years | 49 | 10.1% | 41 | 9.9% | 8 | 11.6% |
| **Age at which home FOBT screening is no longer recommended for asymptomatic, average-risk patients (n=467)** | | | | | | |
| 70-75 years | 16 | 3.4% | 15 | 3.8% | 1 | 1.5% |
| 80-85 years | 44 | 9.4% | 44 | 11.0% | 0 | 0.0% |
| $\geq$ 90 years | 13 | 2.8% | 12 | 3.0% | 1 | 1.5% |
| Cessation of screening NOT recommended | 394 | 84.4% | 328 | 82.2% | 66 | 97.1% |

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**TABLE 4-2 RECOMMENDATION FOR CRC SCREENING WITH IN-OFFICE FECAL OCCULT BLOOD TEST FOR ASYMPTOMATIC, AVERAGE-RISK PATIENTS, BY MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Do you routinely perform an in-office FOBT for asymptomatic, average risk patients? (n=663)** | | | | | | |
| Yes | 464 | 70.0% | 375 | 71.3% | 89 | 65.0% |
| No | 199 | 30.0% | 151 | 28.7% | 48 | 35.0% |
| **Recommended starting age for in-office FOBT for asymptomatic, average-risk patients (n=452)** | | | | | | |
| < 30 years | 19 | 4.2% | 12 | 3.3% | 7 | 8.0% |
| 30-35 years | 37 | 8.2% | 34 | 9.3% | 3 | 3.4% |
| 40-45 years | 180 | 39.8% | 131 | 36.0% | 49 | 55.7% |
| 50 years | 214 | 47.3% | 185 | 50.8% | 29 | 32.9% |
| > 50 years | 2 | 0.4% | 2 | 0.5% | 0 | 0.0% |
| **Frequency of routine in-office FOBT screening for asymptomatic, average-risk patients (n=449)** | | | | | | |
| Every year | 402 | 89.5% | 318 | 88.1% | 84 | 95.5% |
| Every 2-5 years | 47 | 10.5% | 43 | 11.9% | 4 | 4.5% |
| **Age at which in-office FOBT is no longer recommended for asymptomatic, average-risk patients (n=418)** | | | | | | |
| 50-75 years | 13 | 3.1% | 12 | 3.6% | 1 | 1.3% |
| ≥ 80 years | 43 | 10.3% | 42 | 12.4% | 1 | 1.3% |
| Cessation of screening NOT recommended | 362 | 86.6% | 284 | 84.0% | 78 | 97.5% |

**TABLE 4-3 RECOMMENDATION FOR CRC SCREENING WITH FLEXIBLE SIGMOIDOSCOPY FOR ASYMPTOMATIC, AVERAGE-RISK PATIENTS BY MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Do you routinely order or perform a flexible sigmoidoscopy for asymptomatic, average-risk patients? (n=659)** | | | | | | |
| Yes | 156 | 23.7% | 137 | 26.0% | 19 | 14.5% |
| No | 503 | 76.3% | 391 | 74.0% | 112 | 85.5% |
| **Recommended starting age for flexible sigmoidoscopy for asymptomatic, average-risk patients (n=150)** | | | | | | |
| < 50 years | 22 | 14.4% | 22 | 16.3% | 0 | 0.0% |
| 50 years | 128 | 83.7% | 111 | 82.2% | 17 | 94.4% |
| > 50 years | 3 | 2.0% | 2 | 1.5% | 1 | 5.6% |
| **Frequency of routine flexible sigmoidoscopy screening for asymptomatic, average-risk patients (n=153)** | | | | | | |
| < 5 years | 51 | 33.3% | 47 | 34.8% | 4 | 22.2% |
| 5 years | 90 | 58.8% | 80 | 59.3% | 10 | 55.6% |
| > 5 years | 12 | 7.8% | 8 | 5.9% | 4 | 22.2% |
| **Age at which flexible sigmoidoscopy is no longer recommended for asymptomatic, average-risk patients (n=147)** | | | | | | |
| < 65 years | 3 | 2.0% | 3 | 2.3% | 0 | 0.0% |
| 65-75 years | 8 | 5.4% | 8 | 6.2% | 0 | 0.0% |
| $\geq$ 80 years | 29 | 19.7% | 28 | 21.7% | 1 | 5.6% |
| Cessation of screening NOT recommended | 107 | 72.8% | 90 | 69.8% | 17 | 94.4% |

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**TABLE 4-4 RECOMMENDATION FOR CRC SCREENING WITH COLONOSCOPY FOR ASYMPTOMATIC, AVERAGE-RISK PATIENTS, BY MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Do you routinely order or perform a colonoscopy for asymptomatic, average-risk patients? (n=672)** | | | | | | |
| Yes | 583 | 86.8% | 493 | 92.7% | 90 | 64.3% |
| No | 89 | 13.2% | 39 | 7.3% | 50 | 35.7% |
| **Recommended starting age for colonoscopy for asymptomatic, average-risk patients (n=570)** | | | | | | |
| < 50 years | 22 | 3.9% | 22 | 4.6% | 0 | 0.0% |
| 50 years | 529 | 92.8% | 443 | 92.1% | 86 | 96.6% |
| > 50 years | 19 | 3.3% | 16 | 3.3% | 3 | 3.4% |
| **Frequency of routine colonoscopy screening for asymptomatic, average-risk patients (n=547)** | | | | | | |
| < 5 years | 56 | 10.2% | 48 | 10.3% | 8 | 9.9% |
| 5 years | 154 | 28.2% | 118 | 25.3% | 36 | 44.4% |
| 6-9 years | 92 | 16.8% | 81 | 17.4% | 11 | 13.6% |
| 10 years | 245 | 44.8% | 219 | 47.0% | 26 | 32.1% |
| **Age at which colonoscopy is no longer recommended for asymptomatic, average-risk patients (n=531)** | | | | | | |
| 65-79 years | 31 | 5.8% | 30 | 6.7% | 1 | 1.2% |
| 80 years | 72 | 13.6% | 69 | 15.4% | 3 | 3.7% |
| 85 years | 21 | 4.0% | 21 | 4.7% | 0 | 0.0% |
| $\geq$ 90 years | 19 | 3.6% | 18 | 4.0% | 1 | 1.2% |
| Cessation of screening NOT recommended | 388 | 73.1% | 311 | 69.3% | 77 | 93.9% |

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**CHART 4-1 PERCENT OF PHYSICIANS WHO ORDER OR PERFORM SPECIFIC TESTS FOR COLORECTAL CANCER, BY MEDICAL SPECIALTY**

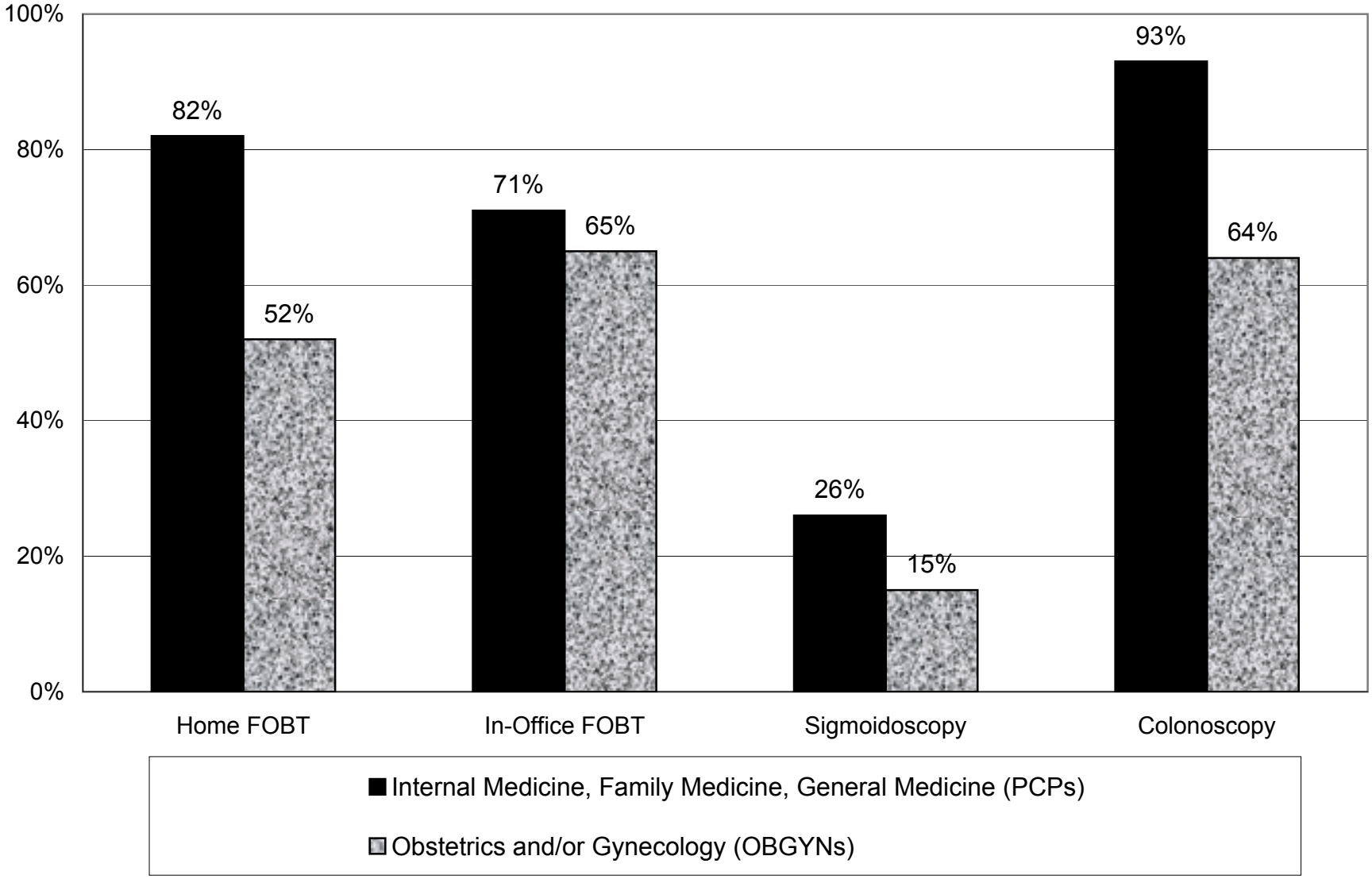

**TABLE 4-5 METHOD MOST FREQUENTLY RECOMMENDED FOR COLORECTAL CANCER SCREENING FOR PATIENTS AGE 50 YEARS AND OLDER, BY CANCER RISK AND MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Recommended CRC screening method** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **For asymptomatic patients age 50 years and older at average risk for CRC** | | | | | | |
| Digital rectal exam (DRE) only | 11 | 1.6% | 8 | 1.5% | 3 | 2.1% |
| Annual FOBT +/- DRE | 68 | 10.1% | 50 | 9.5% | 18 | 12.5% |
| Flexible sigmoidoscopy only every 5 years | 10 | 1.5% | 9 | 1.7% | 1 | 0.7% |
| Annual FOBT and Flex sig every 5 years | 75 | 11.2% | 58 | 11.0% | 17 | 11.8% |
| Colonoscopy every 3-5 years | 181 | 26.9% | 134 | 25.4% | 47 | 32.6% |
| Colonoscopy every 10 years | 313 | 46.6% | 264 | 50.0% | 49 | 34.0% |
| Other | 10 | 1.5% | 5 | 1.0% | 5 | 3.5% |
| Does not recommend CRC screening | 4 | 0.6% | 0 | 0.0% | 4 | 2.8% |
| **For asymptomatic patients age 50 years and older with family hx of CRC** | | | | | | |
| Digital rectal exam (DRE) only | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Annual FOBT +/- DRE | 10 | 1.5% | 6 | 1.1% | 4 | 2.8% |
| Flexible sigmoidoscopy only every 5 years | 1 | 0.2% | 0 | 0.0% | 1 | 0.7% |
| Annual FOBT and Flex sig every 5 years | 29 | 4.3% | 16 | 3.0% | 13 | 9.0% |
| Colonoscopy every 3-5 years | 531 | 79.0% | 421 | 79.7% | 110 | 76.4% |
| Colonoscopy every 10 years | 81 | 12.1% | 76 | 14.4% | 5 | 3.5% |
| Other | 18 | 2.7% | 9 | 1.7% | 9 | 6.3% |
| Does not recommend CRC screening | 2 | 0.3% | 0 | 0.0% | 2 | 1.4% |

**CHART 4-2 CRC SCREENING METHOD MOST FREQUENTLY RECOMMENDED TO PATIENTS OF AVERAGE RISK, AGE 50 YEARS AND OLDER, BY MEDICAL SPECIALTY**

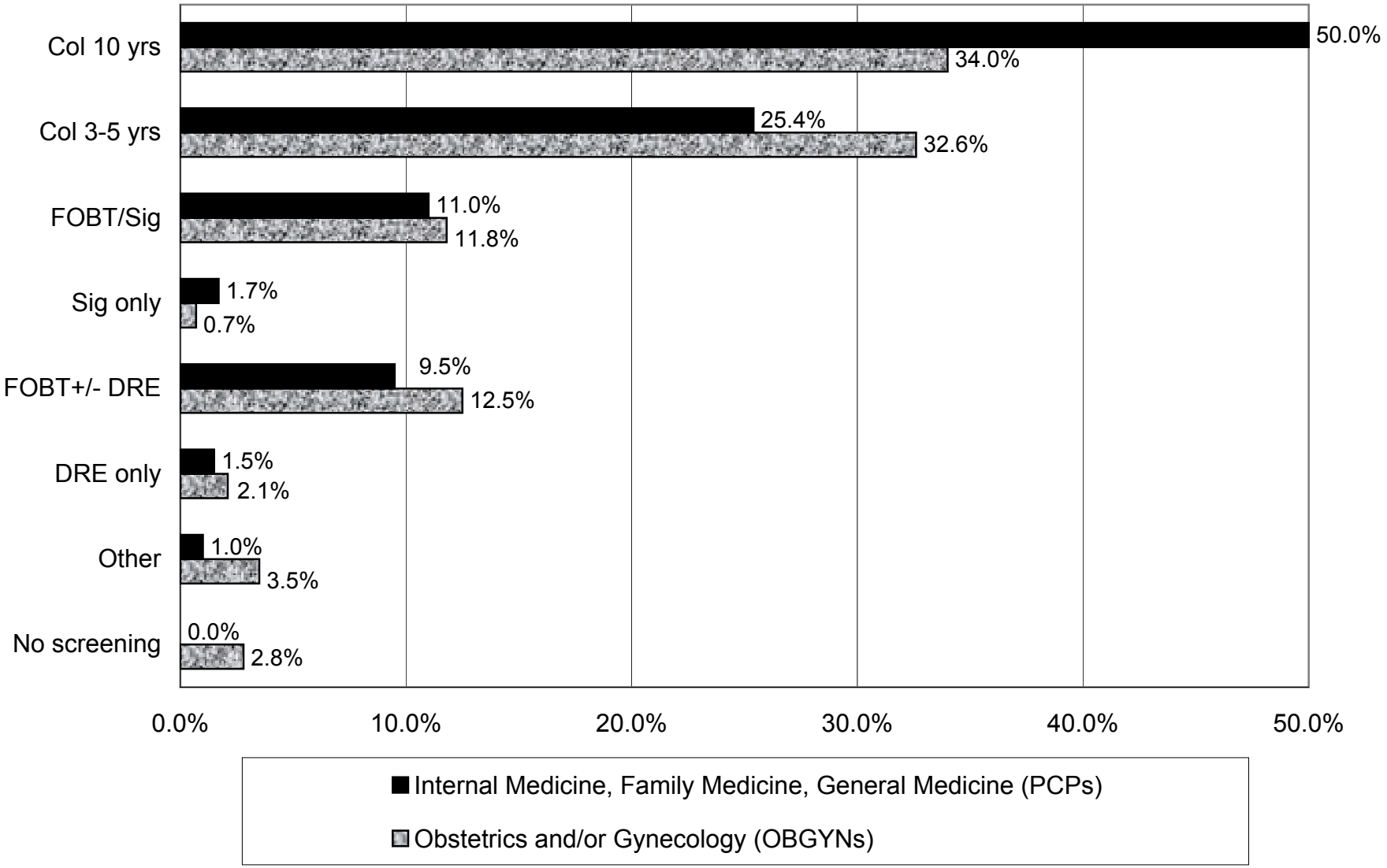

**CHART 4-3 CRC SCREENING METHOD MOST FREQUENTLY RECOMMENDED TO PATIENTS WITH A FAMILY HISTORY OF CRC, AGE 50 YEARS AND OLDER, BY MEDICAL SPECIALTY**

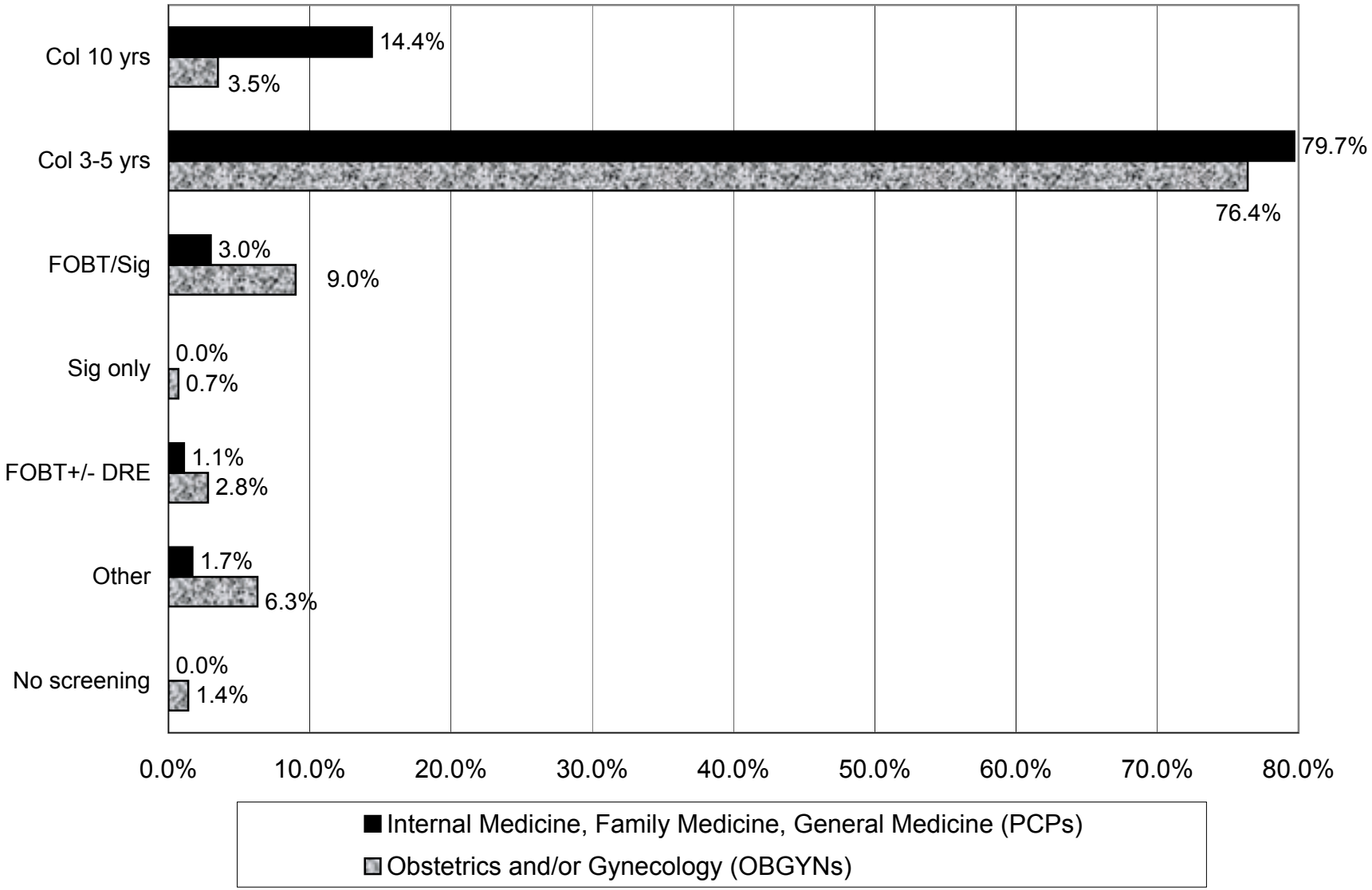

**TABLE 4-6 COLORECTAL CANCER SCREENING TRAINING PRACTICES AND PERFORMANCE, BY MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Have you ever been trained to do a flexible sigmoidoscopy?** | | | | | | |
| Yes | 349 | 52.4% | 333 | 63.1% | 16 | 11.6% |
| No | 317 | 47.6% | 195 | 36.9% | 122 | 88.4% |
| **Do you currently perform flexible sigmoidoscopies?** | | | | | | |
| Yes | 34 | 5.1% | 34 | 6.5% | 0 | 0.0% |
| No | 628 | 94.9% | 491 | 93.5% | 137 | 100.0% |
| **Have you ever been trained to do a colonoscopy?** | | | | | | |
| Yes | 40 | 6.1% | 34 | 6.6% | 6 | 4.4% |
| No | 612 | 93.9% | 481 | 93.4% | 131 | 95.6% |
| **Do you currently perform colonoscopies?** | | | | | | |
| Yes | 6 | 0.9% | 5 | 1.0% | 1 | 0.8% |
| No | 641 | 99.1% | 509 | 99.0% | 132 | 99.2% |

## Section 5 - Prostate Cancer Screening Recommendations

Primary care physicians (PCPs) were asked about recommendations they make to their male patients regarding prostate cancer screening. Specific tests included screening with prostate specific antigen (PSA) testing and digital rectal examination (DRE). Frequently recommended screening methods were assessed for asymptomatic patients according to prostate cancer risk (i.e., average vs. increased).

### 5.1 Prostate Specific Antigen (PSA) Screening Recommendations

Ninety percent (90%) of PCPs reported that they routinely order PSA screening for their male patients (Table 5-1). For average risk patients, 63% of PCPs recommend starting PSA screening at the age of 50 years, 26% recommend starting at age 40 years, 8% recommend testing starting at 45-49 years, and 2% begin routine PSA testing when patients are less than 40 years of age. Eighty four percent (84%) of physicians reported that they recommend a routine PSA test annually for average-risk patients, 13% order this screening test every 1-2 years, and 3% order the test at intervals exceeding 2 years. Sixty-one percent (61%) of the PCPs did not recommend a specific age for cessation of PSA screening, and 25% recommended stopping screening between 71 and 80 years of age.

### 5.2 Prostate Cancer Screening by Cancer Risk Level

Physicians were asked which screening methods they recommend to asymptomatic male patients under two different risk scenarios: 1) a patient at average risk for developing prostate cancer; and 2) a patient with a family history of prostate cancer and at increased risk for developing the disease. (The race of the male patient was not included in the risk scenario.)

Table 5-2 shows that, for average risk men, nearly 82% of PCPs recommended both PSA and DRE for screening, while 6% obtain only a PSA and 8% report performing only a DRE. For men with a family history of prostate cancer, 91% of PCPs recommended both the PSA and DRE. Sixty-eight percent (68%) of PCPs recommended initiation of screening at age 40, while 9% recommended beginning screening between 45-49 years for men with a family history of prostate cancer.

**TABLE 5-1 RECOMMENDATION FOR PROSTATE CANCER SCREENING WITH THE PROSTATE SPECIFIC ANTIGEN TEST FOR ASYMPTOMATIC, AVERAGE RISK MEN**

| | Internal Medicine, Family Medicine, General Medicine | |
|---|---|---|
| **Selected Characteristic** | **N** | **Percent** |
| **Do you routinely order a PSA screening test for asymptomatic, average-risk patients? (n=526)** | | |
| Yes | 475 | 90.3% |
| No | 51 | 9.7% |
| **Recommended starting age for PSA screening test for asymptomatic, average-risk patients (n=467)** | | |
| 30-35 years | 10 | 2.1% |
| 40 years | 119 | 25.5% |
| 45-49 years | 39 | 8.4% |
| 50 years | 296 | 63.4% |
| > 50 years | 3 | 0.6% |
| **Recommended frequency of PSA screening test for asymptomatic, average-risk patients (n=462)** | | |
| Every year | 387 | 83.8% |
| Every 1-2 years | 62 | 13.4% |
| More than 2 years | 13 | 2.8% |
| **Age at which you no longer recommend the PSA screening test for asymptomatic, average-risk patients (n=446)** | | |
| 65-70 years | 32 | 7.2% |
| 71-80 years | 110 | 24.7% |
| > 80 years | 31 | 7.0% |
| Cessation of screening NOT recommended | 273 | 61.2% |

**TABLE 5-2 ROUTINE PROSTATE CANCER TEST RECOMMENDATIONS FOR ASYMPTOMATIC MALE PATIENTS, BY PROSTATE CANCER RISK LEVEL**

| | For average-risk male patients | | For male patients with positive family history of prostate cancer | |
|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** |
| **Recommended test(s) (n=529)** | | | | |
| PSA only | 29 | 5.5% | 28 | 5.3% |
| DRE only | 43 | 8.1% | 10 | 1.9% |
| PSA and DRE | 431 | 81.5% | 478 | 90.7% |
| Other | 12 | 2.3% | 7 | 1.3% |
| Does not recommend prostate screening | 14 | 2.7% | 4 | 0.8% |
| **Recommended age to start prostate cancer screening (n=521)** | See Table 5-1 | | | |
| < 40 years | | | 60 | 11.5% |
| 40 years | | | 356 | 68.3% |
| 45-49 years | | | 47 | 9.0% |
| 50 | | | 51 | 9.8% |
| > 50 years | | | 1 | 0.2% |
| 10 years earlier than relative at diagnosis | | | 6 | 1.2% |

## Section 6 – Women's Health: Cervical and Breast Cancer Screening Recommendations

Physicians were asked about recommendations they make to their female patients regarding screening for cervical and breast cancer. Specific tests of interest included the Papanicolaou test ("Pap test") and mammography screening. Questions assessed practice recommendations for the initiation, frequency, and cessation of screening among female patients.

### 6.1 Pap Test Screening Recommendations

Overall, 92% of the sampled physicians reported they routinely order or perform Pap tests (Table 6-1). Sixty-three percent (63%) recommended starting Pap testing between 18 and 20 years of age. Ninety-three percent (93%) of OBGYNs and 87% of PCPs recommended starting Pap test screening no later than the age of 21. Forty physicians (6.6%) did not give a specific age, but said when the patient is "sexually active." When asked about screening frequency, 92% of OBGYNs, but only 68% of PCPs reported ordering or performing a routine Pap test annually. Twenty-five percent (25%) of the PCPs recommended screening every 1-2 years. Approximately three-fourths of the OBGYNs did not recommend a specific age to stop screening compared to one-third of PCPs. Over one-half of the PCPs recommended Pap testing be stopped between the ages of 65 and 75 years.

### 6.2 Mammography Screening Recommendations

Physicians were asked about recommendations they give to their female patients regarding mammography for breast cancer screening. Ninety-eight percent (98%) of physicians recommend mammograms for their asymptomatic, average risk patients (Table 6-2). Of the physicians who recommend mammography screening, 68% recommended screening when their patients reach 40 years of age, 22% recommended that screening begin at less than 40 years of age, and 10% begin when the women are older than 40 years of age. Ninety-eight percent (98%) of OBGYNs recommended starting mammography at age 40 years or younger compared to 88% of PCPs. Annual mammography was recommended by 64% of responding physicians and 15% recommended screening every one to two years. Seventy-five percent (75%) of respondents reported there was no specific age at which they no longer recommended mammography screening. Twenty-two percent (22%) would stop screening when their patients reach age 71 years or older.

**TABLE 6-1 RECOMMENDATION FOR CERVICAL CANCER SCREENING WITH PAP TESTING, FOR ASYMPTOMATIC, AVERAGE-RISK WOMEN BY MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Do you routinely order or perform a Pap test for asymptomatic, average-risk patients? (n=678)** | | | | | | |
| Yes | 626 | 92.3% | 482 | 90.4% | 144 | 99.3% |
| No | 52 | 7.7% | 51 | 9.6% | 1 | 0.7% |
| **Recommended starting age for a Pap test for asymptomatic, average-risk patients (n=607)** | | | | | | |
| < 18 years | 81 | 13.3% | 51 | 10.9% | 30 | 21.7% |
| 18-20 years | 382 | 62.9% | 296 | 63.1% | 86 | 62.3% |
| 21 years | 74 | 12.2% | 62 | 13.2% | 12 | 8.7% |
| > 21 years | 30 | 4.9% | 30 | 6.4% | 0 | 0.0% |
| When sexually active (as only criteria) | 40 | 6.6% | 30 | 6.4% | 10 | 7.2% |
| **Frequency of a routine Pap test for asymptomatic, average-risk patients (n=607)** | | | | | | |
| Every year | 445 | 73.3% | 315 | 67.7% | 130 | 91.5% |
| Every 1-2 years | 126 | 20.8% | 114 | 24.5% | 12 | 8.5% |
| Every 3 years | 35 | 5.8% | 35 | 7.5% | 0 | 0.0% |
| Every 5 years | 1 | 0.2% | 1 | 0.2% | | |
| **Age at which a Pap test is no longer recommended for asymptomatic, average-risk patients (n=592)** | | | | | | |
| 55-64 years | 8 | 1.4% | 6 | 1.3% | 2 | 1.5% |
| 65 years | 114 | 19.3% | 109 | 23.8% | 5 | 3.7% |
| 66-75 years | 146 | 24.7% | 130 | 28.4% | 16 | 11.9% |
| > 75 years | 71 | 12.0% | 62 | 13.5% | 9 | 6.7% |
| Cessation of screening NOT recommended | 253 | 42.7% | 151 | 33.0% | 102 | 76.1% |

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**TABLE 6-2 RECOMMENDATION FOR BREAST CANCER SCREENING WITH MAMMOGRAPHY FOR ASYMPTOMATIC, AVERAGE-RISK WOMEN BY MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Do you routinely order mammography screening for asymptomatic, average-risk patients? (n=679)** | | | | | | |
| Yes | 665 | 97.9% | 523 | 97.8% | 142 | 98.6% |
| No | 14 | 2.1% | 12 | 2.2% | 2 | 1.4% |
| **Recommended starting age for mammography for asymptomatic, average-risk patients (n=652)** | | | | | | |
| < 40 years | 144 | 22.1% | 108 | 21.1% | 36 | 25.7% |
| 40 years | 444 | 68.1% | 343 | 67.0% | 101 | 72.1% |
| > 40 years | 64 | 9.8% | 61 | 11.9% | 3 | 2.1% |
| **Frequency of routine mammography for asymptomatic, average-risk patients (n=625)** | | | | | | |
| Every year | 402 | 64.3% | 313 | 63.2% | 89 | 68.5% |
| Every 1-2 years | 92 | 14.7% | 72 | 14.6% | 20 | 15.4% |
| > 2 years | 131 | 21.0% | 110 | 22.2% | 21 | 16.2% |
| **Age at which mammography is no longer recommended for asymptomatic, average-risk patients (n=623)** | | | | | | |
| 65-70 years | 20 | 3.2% | 20 | 4.1% | 0 | 0.0% |
| 71-80 years | 102 | 16.4% | 94 | 19.1% | 8 | 6.2% |
| > 80 years | 33 | 5.3% | 29 | 5.9% | 4 | 3.1% |
| Cessation of screening NOT recommended | 468 | 75.1% | 350 | 71.0% | 118 | 90.7% |

## Section 7 – Skin and Oral Cancer Screening Recommendations

### 7.1 Skin Cancer Screening Recommendations

Eighty-two percent (82%) of PCPs and 36% of OBGYNs report they perform routine skin cancer screening (Table 7-1). About one-third of all physicians who order or perform skin cancer screening begin when patients are younger than 20 years of age and almost all responded the screening interval should be annually or every 1-2 years. Ninety-six percent (96%) responded that they do not recommend an age for cessation of skin cancer screening.

### 7.2 Oral Cancer Screening Recommendations

Among OBGYNs, only 9% reported they perform oral cancer screening (data not shown). Among PCPs, 65% report they routinely perform oral cancer screening (Table 7-2). Of the PCPs that perform oral cancer screening, 25% report they begin when the patient is less than 20 years of age and 15% begin when the patient is between 20-25 years of age. About three-fourths of those that perform oral cancer screening perform the exam annually and 95% reported there is no age at which they recommend cessation of oral cancer screening.

**TABLE 7-1 RECOMMENDATION FOR SKIN CANCER SCREENING FOR ASYMPTOMATIC, AVERAGE RISK PATIENTS, BY MEDICAL SPECIALTY**

| | All Specialties combined | | Internal Medicine, Family Medicine, General Medicine | | Obstetrcis and/or Gynecology | |
|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **Percent** | **N** | **Percent** | **N** | **Percent** |
| **Do you routinely order or perform skin cancer screening for asymptomatic, average-risk patients? (n=673)** | | | | | | |
| Yes | 486 | 72.2% | 437 | 81.7% | 49 | 35.5% |
| No | 187 | 27.8% | 98 | 18.3% | 89 | 64.5% |
| **Recommended starting age for skin cancer screening for asymptomatic, average-risk patients (n=454)** | | | | | | |
| < 20 years | 165 | 36.3% | 143 | 35.0% | 22 | 48.9% |
| 20-25 years | 72 | 15.9% | 68 | 16.6% | 4 | 8.9% |
| 30-35 years | 78 | 17.2% | 70 | 17.1% | 8 | 17.8% |
| 40-45 years | 84 | 18.5% | 80 | 19.6% | 4 | 8.9% |
| ≥ 50 years | 31 | 6.8% | 29 | 7.1% | 2 | 4.4% |
| Variable responses | 24 | 5.3% | 19 | 4.7% | 5 | 11.1% |
| **Frequency of routine skin cancer screening for asymptomatic, average-risk patients (n=457)** | | | | | | |
| Every year | 339 | 74.2% | 295 | 72.0% | 44 | 93.6% |
| Every 1-2 years | 108 | 23.6% | 105 | 25.6% | 3 | 6.4% |
| Variable responses | 10 | 2.2% | 10 | 2.4% | | |
| **Age at which skin cancer screening is no longer recommended for asymptomatic, average-risk patients (n=424)** | | | | | | |
| 70-80 years | 6 | 1.4% | 6 | 1.6% | 0 | 0.0% |
| ≥ 85 years | 10 | 2.4% | 9 | 2.4% | 1 | 2.3% |
| Cessation of screening NOT recommended | 408 | 96.2% | 365 | 96.1% | 43 | 97.7% |

**TABLE 7-2 RECOMMENDATION FOR ORAL CANCER SCREENING BY PRIMARY CARE PHYSICIANS, FOR ASYMPTOMATIC, AVERAGE-RISK PATIENTS**

| | Internal Medicine, Family Medicine, General Medicine | |
|---|---|---|
| **Selected Characteristic** | **N** | **Percent** |
| **Do you routinely perform/order oral cancer screening for asymptomatic, average-risk patients? (n=532)** | | |
| Yes | 346 | 65.0% |
| No | 186 | 35.0% |
| **Recommended starting age for oral cancer screening for asymptomatic, average-risk patients (n=318)** | | |
| < 20 years | 78 | 24.5% |
| 20-25 years | 48 | 15.1% |
| 30-35 years | 47 | 14.8% |
| 40 years | 85 | 26.7% |
| 50 years | 40 | 12.6% |
| Variable responses | 20 | 6.3% |
| **Frequency of routine oral cancer screening for asymptomatic, average-risk patients (n=318)** | | |
| Every year | 241 | 75.8% |
| Every 2-5years | 68 | 21.4% |
| Variable responses | 9 | 2.8% |
| **Age at which oral cancer screening is no longer recommended for asymptomatic, average-risk patients (n=302)** | | |
| 70-80 years | 7 | 2.3% |
| $\geq$ 85 years | 8 | 2.6% |
| Cessation of screening NOT recommended | 287 | 95.0% |

## Section 8 –Knowledge of Local Health Department Cancer Screening Programs

Throughout the state of Maryland, local health departments (LHDs) serve as providers and payers of various cancer screening services. In this survey, physicians were asked whether they were aware that these services are available, and if aware, whether they had ever advised their patients to utilize cancer screening services at the LHDs. Table 7-1 summarizes physician awareness of LHD screening programs by medical specialty and geographic area of practice. Overall, rural physicians reported a higher level of awareness of the services available at their LHDs than their urban and suburban counterparts (81% compared to 43% and 46%, respectively). Both awareness and utilization were highest among OBGYNs practicing in rural areas of the state. Among all physicians who were aware of the LHD services, almost all rural physicians advised patients to use such services (99%) compared to 92% of urban and 83% of suburban practitioners. By specialty, OBGYNs were more aware of the availability of cancer screening services than PCPs (62% compared to 50%).

**TABLE 8-1 AWARENESS OF CANCER SCREENING AT LOCAL HEALTH DEPARTMENTS, BY GEOGRAPHIC AREA* AND MEDICAL SPECIALTY**

| | TOTAL | | URBAN | | SUBURBAN | | RURAL | |
|---|---|---|---|---|---|---|---|---|
| **Selected Characteristic** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** |
| **ALL SPECIALTIES COMBINED** | | | | | | | | |
| **Are you aware of cancer screening services at the local health department? (n=659)** | | | | | | | | |
| Yes | 344 | 52.2% | 65 | 42.8% | 170 | 45.7% | 109 | 80.7% |
| No | 315 | 47.8% | 87 | 57.2% | 202 | 54.3% | 26 | 19.3% |
| **If aware, have you ever advised any of your patients to use these services?** | | | | | | | | |
| Yes | 304 | 89.7% | 57 | 91.9% | 140 | 82.8% | 107 | 99.1% |
| No | 35 | 10.3% | 5 | 8.1% | 29 | 17.2% | 1 | 0.9% |
| **INTERNAL MEDICINE, FAMILY PRACTICE AND GENERAL PRACTICE** | | | | | | | | |
| **Are you aware of cancer screening services at the local health department? (n=522)** | | | | | | | | |
| Yes | 259 | 49.5% | 52 | 43.0% | 123 | 41.8% | 84 | 78.5% |
| No | 263 | 50.3% | 69 | 57.0% | 171 | 58.2% | 23 | 21.5% |
| **If aware, have you ever advised any of your patients to use these services?** | | | | | | | | |
| Yes | 230 | 89.8% | 46 | 92.0% | 102 | 82.9% | 82 | 98.8% |
| No | 26 | 10.2% | 4 | 8.0% | 21 | 17.1% | 1 | 1.2% |
| **OBSTETRICS AND/OR GYNECOLOGY** | | | | | | | | |
| **Are you aware of cancer screening services at the local health department? (n=137)** | | | | | | | | |
| Yes | 85 | 62.0% | 13 | 41.9% | 47 | 60.3% | 25 | 89.3% |
| No | 52 | 38.0% | 18 | 58.1% | 31 | 39.7% | 3 | 10.7% |
| **If aware, have you ever advised any of your patients to use these services?** | | | | | | | | |
| Yes | 74 | 89.2% | 11 | 91.2% | 38 | 82.6% | 25 | 100.0% |
| No | 9 | 10.8% | 1 | 8.3% | 8 | 17.4% | 0 | 0.0% |

* Self-reported

Maryland Cancer Survey
Physican Survey of Cancer Screening Practices, 2004

## Section 9 – Summary, Strengths, Limitations, and Recommendations

### 9.1 Summary

The idea for this pilot survey was originally conceived in response to the questions in the Maryland Cancer Survey 2002 that asked respondents why they had never been screened for different cancers or why they had not been screened in a timely manner. The response, "the doctor did not order the test or didn't say the test was needed," was often a prominent reason. Because of this, we decided to ask physicians who provide primary health care in Maryland, which tests are they recommending for screening, the age at which they recommend screening to begin and end, and the time intervals at which they recommend repeat screening.

We found that the vast majority of physicians who responded to our survey reported that they are recommending cancer screening test to their average risk clients. However, not all physicians who responded follow currently recommended guidelines. We found that 70% performed the in-office FOBT. If this test is the only CRC screening test that is performed on a patient, then that patient is not being adequately screened for CRC. Twenty-seven percent (27%) of physicians reported they recommend colonoscopy every 3-5 years for **average risk** patients. The screening interval recommended by major groups (ACS and American Gastroenterological Association) is every 10 years for people 50 years of age and older who are at average risk. Almost 80% of respondents knew that patients with a family history of CRC are at higher risk for developing cancer and should be screened with colonoscopy at an earlier age and more frequently.

Prostate cancer screening is more controversial, and randomized clinical studies are being conducted to determine how screening with the PSA test should be offered for routine cancer prevention including "informed decision making" with the client. The USPSTF states the evidence is insufficient to recommend for or against prostate cancer screening. The ACS recommends offering annual screening to average-risk men beginning at age 50, and earlier to African American men or men with a family history of prostate cancer. Ninety percent (90%) of PCP survey respondents recommended the PSA test to their average-risk male patients for prostate cancer screening. Of those who recommend screening with PSA, 63% recommend beginning at age 50, while 26% begin at age 40. For patients with a family history of prostate

cancer, 12% recommended that screening begin at less than 40 years of age while 68% recommended screening begin at 40 years of age.

Mammography was almost universally recommended by both PCPs and OBGYNS. Sixty-eight percent (68%) said screening should begin at age 40 and 21% reported that screening should begin in women younger than 40 years. Pap testing was also recommended or performed by 92% of responding physicians.

### 9.2 Strengths and Limitations of the MCS-PS

After conducting the statewide population-based Maryland Cancer Survey in 2002 and 2004 among adults age 40 years and older, the MCS-PS was our first attempt to gather information from health care providers. We reviewed the literature, searched for similar questionnaires, and planned our survey. Our goal for this pilot survey was to query a large number of PCPs and OBGYNs practicing throughout Maryland (3,190). Due to fiscal constraints, the chosen method of survey administration was U.S. mail, and responses were by U.S. mail and Internet. Three contacts via U.S. mail were made, but we did not have sufficient funding to pay providers for their responses or to call each non-respondent.

The first caveat is that due to the low response rate the results cannot be assumed to represent the screening practices recommended by all physicians in Maryland. The results are a summary of the responses of the physicians who answered our survey. After excluding 510 physicians for non-eligibility (that is, those who were not PCPs, did not practice in Maryland, or were deceased), the response rate for the survey was 25.4% (680/2,680). We have no information on the 2,000 physicians who did not respond. Therefore, the potential bias and the generalizability of our findings to the population of all Maryland PCPs and OBGYNs is not known.

Many questions in the survey were open-ended and allowed respondents to answer in a variety of ways. For instance, when we asked for a specific age, providers sometimes answered with a range of ages. (Example: "At what age should mammography screening begin?" response: "40-45 years.") When asked, which CRC screening test is most frequently recommended, some providers checked more than one test. Decisions for recoding responses were made by the research team and applied uniformly for ease of presenting the results.

Rural providers were over sampled compared to urban providers. Because the responses were anonymous, we were unable to identify responders as rural or urban providers and were therefore unable to: 1) calculate an urban and rural response rate, and 2) weight the survey responses back to the population of Maryland providers.

All answers were self-report. No medical chart reviews were done to verify whether the providers' clients had screening services that matched their self-reported recommendations. While questions were asked to elicit screening recommendations, the survey may be measuring physicians' knowledge and not necessarily their practices.

### 9.3 Recommendations

Based on the results of this pilot physician survey, interventions to increase the knowledge of providers or change the practices of providers in Maryland could focus on several areas. The age at which screening for different cancers should begin, based on the presence or absence of risk factors, was variable. A significant percent of physicians recommended that screening of average risk patients begin earlier than what is currently recommended by the ACS, e.g., for mammography and PSA. The intervals for colonoscopy screenings for CRC based on procedure and patient risk needs to be reinforced. Only 45% reported the screening interval for persons at average-risk to be 10 years, and 10% said the interval should be less than 5 years. The use of the in-office FOBT should not be used as the **only** method of CRC screening. If the in-office FOBT is done and is *negative*, the patient needs to have another form of CRC screening (either the home FOBT, home FOBT with sigmoidoscopy, or colonoscopy); if *positive*, the client needs to have a colonoscopy. Physicians need to be made aware of what cancer screening is available through the local health departments for their low-income patients without health insurance who may qualify for local programs.

If the survey is performed again, consideration should be given to the following areas:

1) Attempt to increase the response rate by contacting non-responders by telephone to determine their eligibility and encourage participation if eligible;
2) Record whether respondents are from urban or rural counties in order to weight the responses according to the sampling scheme;
3) Use more focused and fewer open-ended questions to better determine actual screening practices;

4) Consider including non-physician primary health care providers in the sample, and
5) Consider compensating providers for participating in the survey.