Maryland Cancer Screening and Risk Behaviors Report, 2012

An Analysis of Behavioral Risk Factor Surveillance System Data

Cigarette Restitution Fund Program
Cancer Prevention, Education, Screening, and Treatment Program

Center for Cancer Prevention and Control
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Dedication
We dedicate this report to the staff working at the local programs throughout Maryland.
Without their tireless efforts to promote education about cancer screening and prevention
among all Marylanders and their work to screen uninsured and low-income individuals,
the results highlighted in this report would not be possible.

Citation
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Surveillance System Data. [1]Department of Epidemiology and Public Health, University of
Maryland School of Medicine, Baltimore, MD and [2]Center for Cancer Prevention and Control,
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List of Acronyms

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AAPOR	American Association for Public Opinion Research
ACS	American Cancer Society
BMI	body mass index
BRFSS	Behavioral Risk Factor Surveillance System
CATI	computer-assisted telephone interview
CBE	clinical breast exam
CCPC	Center for Cancer Prevention and Control
CDC	Centers for Disease Control and Prevention
CI	confidence interval
CPEST	Cancer Prevention, Education, Screening, and Treatment
CRC	colorectal cancer
CRF	Cigarette Restitution Fund
CT	computerized tomography
DCBE	double contrast barium enema
DHMH	Department of Health and Mental Hygiene
FIT	fecal immunochemical test
FOBT	fecal occult blood test
GED	General Equivalency Diploma
GI	gastrointestinal
HCP	health care provider
HPV	human papillomavirus
HP 2010	Healthy People 2010
HP 2020	Healthy People 2020
MRI	magnetic resonance imaging
MSC	melanoma skin cancer
MSG	Genesys – Marketing Systems Group
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NHQR	National Healthcare Quality Report
NMSC	non-melanoma skin cancer
PSA	prostate-specific antigen
SPF	sun protection factor
USPSTF	U.S. Preventive Services Task Force
UV	ultraviolet
VSA	Vital Statistics Administration

Maryland Cancer Screening and Risk Behaviors Report, 2012
Highlights

As Maryland continues to make strides in its efforts to bring down the incidence and mortality from cancer, it remains of great importance to continue measuring the factors which impact these rates, namely cancer screening, lifestyle factors, and access to health care. It is also important to measure Maryland's progress towards meeting the nation's objectives as outlined in Healthy People 2020.   As the nation strives for health equity and a reduction in health disparities, it is important to examine these factors by demographic (including gender, race, education, and area of residence) and health care access factors. This will enable the public health and medical communities to determine groups which require greater attention and the areas of need. The purpose of this report is to analyze data collected from the 2012 Behavioral Risk Factor Surveillance System (BRFSS) survey and to report on the prevalence of self-reported cancer screening tests in Maryland, smoking and alcohol intake, body mass index, and measures of access to health care and their relationship to cancer screening.

Survey Sample and Demographics

- In 2012, BRFSS was successful in completing interviews with 12,812 Maryland residents age 18 years and older, of which 73% were white, 20% were black/African American, 3% were Hispanic, and 5% were of other races.
- Women made up 62% of the sample.
- 51% of the respondents were age 40-64 years.
- 18% of respondents reported an annual household income of less than $25,000.
- 93% of respondents completed at least a high school education.
- The results of the survey are weighted to the Maryland population, taking into account age, gender, race and ethnicity, education, marital status, home ownership vs. renting and phone ownership.

Access to Health Care

Health insurance, among adults age 18 years and older
- 87% reported having health insurance.
    - This measure was highest among whites compared to blacks, persons of other races, and Hispanics.
    - Having health insurance was higher among adults who had at least some college education.

Having a personal doctor or health care provider, among adults age 18 years and older
- 83% reported having at least one person they think of as their personal doctor or health care provider.
    - This measure was higher among whites compared to persons of other races and Hispanics.
        - There was no significant difference between whites and blacks.
    - Having a personal doctor was highest among those who had at least some college compared to those with less than a high school education.

Visiting a doctor in the past 12 months for a routine checkup, among adults age 18 years and older
- 76% reported having a routine checkup in the past 12 months.
  - This measure was highest among black women compared to other gender and race/ethnic groups.
  - Having a personal doctor was highest among those age 65 years and older.
  - There was no difference by education level.

Self-reported Cancer Screening in Maryland

Colorectal cancer (CRC) screening, among adults age 50 years and older
- 37% reported ever having a fecal occult blood test (FOBT) and 72% reported ever having a sigmoidoscopy or colonoscopy.
- 69% of adults age 50 years and older reported being up-to-date with CRC screening with FOBT in the past year, sigmoidoscopy in the past 5 years (with or without FOBT in the past year), or colonoscopy in the past 10 years.
  - There was no significant difference by race.
- Being up-to-date with CRC was higher among adults with health insurance (71%) compared to those without health insurance (40%) and higher among those who have at least one person they think of as their personal doctor (72%) compared to those without a personal doctor (31%).

Prostate cancer screening, among men age 40 years and older
While prostate cancer screening is not recommended by the United States Preventive Services Task Force, the BRFSS asks questions about informed decision making and prostate cancer screening with the prostate-specific antigen (PSA) blood test.
- 62% of men reported having discussed the advantages of PSA testing with a health care provider while only 30% reported having discussed the disadvantages of PSA testing.
- 58% reported they had ever had a PSA test.
- After removing men from the sample who had reported their last PSA was done because of a prostate problem or because they were told they had prostate cancer, 38% of men reported they had a PSA test in the past year, presumably for screening.
  - There was no significant difference by race.
  - This percent was higher among men age 60-64 years and older compared to men age 50-54 years and younger.
- Having a PSA in the past year was higher among men with health insurance (41%) compared to those without health insurance (11%) and higher among those who have at least one person they think of as their personal doctor (41%) compared to those without a personal doctor (17%).

Breast cancer screening, among women age 40 years and older
- 93% reported ever having a mammogram and 79% reported having a mammogram in the past 2 years.
  - A higher proportion of black women reported having a mammogram in the past 2 years compared to the other race and ethnicity groups.

- Having a mammogram in the past 2 years was higher among women with health insurance (81%) compared to those without health insurance (50%) and higher among women who have at least one person they think of as their personal doctor (81%) compared to those without a personal doctor (50%).

Cervical cancer screening, among women age 18 years and older who have not had a hysterectomy
- 95% reported ever having a Pap test and 88% reported having a Pap test in the past 3 years.
  - A higher proportion of black women (92%) had a Pap test in the past 3 years than women of other races (77%).
  - Hispanic women reported comparable rates of Pap testing in the past 3 years (91%) to black women.
  - 87% of white women reported Pap testing in the past 3 years, but this was not significantly different from black women.
- Having a Pap test in the past 3 years was higher among women with health insurance (90%) compared to those without health insurance (75%) and higher among women who have at least one person they think of as their personal doctor (89%) compared to those without a personal doctor (79%).
- As time increased since their last routine check-up, the percent of women reporting having a Pap test in the past 3 years decreased.

Oral cancer screening, among adults age 18 years and older
- 32% reported ever having an oral cancer screening exam and 23% reported having an oral cancer screening exam in the past year.
  - A higher proportion of whites (31%) reported having the oral cancer exam in the past year compared to blacks (11%), persons of other races (16%), and Hispanics (19%).

Sun Exposure Prevention in Maryland

Among adults age 18 years and older, 2% reported they do not go out in the sun. 37% reported they always or almost always avoid the sun between the hours of 10 a.m. and 4 p.m.
- When outdoors for an hour or more on a sunny day
  - 27% always or almost always use a sunscreen lotion of an SPF rating of 15 or higher.
  - 25% always or almost always wear a hat with a broad brim.
  - 23% always or almost always wear protective clothing like a long sleeve shirt or long pants.
- 68% reported they use always or almost always use at least one sun protective method (including sun avoidance).

Lifestyle Factors

Current cigarette smoking, among adults age 18 years and older
- 16% of adults reported they are current cigarette smokers.

o This was highest among men and those under the age of 65 years.

High-risk alcohol consumption, among adults age 18 years and older
- 18% of adults reported high-risk alcohol consumption (for men, high-risk drinking is defined as either consuming more than 14 drinks per week or engaging in binge drinking [five or more drinks at one occasion] and for women, high-risk drinking is defined as either consuming more than seven drinks per week or engaging in binge drinking [four or more drinks at one occasion]).
    o High-risk alcohol consumption was higher among men (23%) compared to women (13%).
    o High-risk alcohol consumption was higher among whites (21%) compared to blacks (14%) and people of other races (12%).
    o High-risk alcohol consumption generally decreased with increasing age.

Strengths and Limitations of the BRFSS 2012

Strengths of the BRFSS survey include:

- The BRFSS is a population-based sample, weighted to the Maryland population.
- The BRFSS has a large sample size and gathers information from adults age 18 years and older.

Limitations of the BRFSS include:

- Only persons who lived in a private residence or college housing were included in the survey; the institutionalized population (e.g.; nursing homes or prisons) was not included in the survey.
- Responses are self-reported and are not verified by clinical chart review.

Chapter 1. Introduction

This report contains information on cancer screening and behavioral risk factors among Maryland adults, as analyzed from the Behavioral Risk Factor Surveillance System (BRFSS) survey conducted in 2012. In its mission to reduce the burden of cancer in Maryland, the Surveillance and Evaluation Unit of the Center for Cancer Prevention and Control (CCPC) at the Maryland Department of Health and Mental Hygiene (DHMH) has been monitoring these very important aspects of cancer control, primarily through the Maryland Cancer Surveys from 2002-2008 and now through analysis of the BRFSS survey since 2010.

While deaths from cancer account for almost a quarter of all Maryland deaths, cancer mortality has shown a steady decline in recent years. For the period 1989-1993, Maryland had the fifth highest cancer mortality rate among the fifty states and the District of Columbia.[1] For the period 2006-2010, Maryland's cancer mortality rate dropped to the 24th position.[2] This decline has been the result of great efforts in the State to promote risk reduction (e.g., smoking prevention and cessation and excess sun exposure prevention), encouraging age-appropriate cancer screening tests to detect pre-malignant lesions and early cancers (when they are more easily treated and cured), and by recent advances in cancer treatment.

It is believed that only 5-10% of cancer cases result from inherited genetic factors, while 90-95% are the result of lifestyle or environmental factors.[3] Tobacco and alcohol use, infections, and radiation exposure are known risk factors for cancer. Factors such as consuming a diet that is low in fruits and vegetables and high in red meat, lack of regular physical activity, and obesity have been implicated as risk factors for cancer. Primary prevention, undertaking an action to decrease the risk of developing cancer, includes behaviors aimed at smoking cessation, decreasing alcohol use, and decreasing exposure to sunlight and other sources of radiation. Secondary prevention, undertaking an action to detect cancer when it is in its earliest, most treatable stage, includes cancer screening for colorectal, prostate, breast, cervical, oral, and skin cancer.

Measuring the proportion of Maryland residents who engage in cancer screening and healthy behaviors and determining the factors associated with those behaviors (by sex, race, age, education, and health care access) will allow better targeting of groups at risk for interventions. With a greater emphasis on preventive behaviors and cancer screening, the age-adjusted cancer incidence and mortality rates will continue to decline.

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[1] SEER Cancer Statistics Review 1973-1993. National Cancer Institute. Bethesda, MD. Available at http://seer.cancer.gov/csr/1973_1993/. Last accessed November 8, 2013.

[2] Howlader N, Noone AM, Krapcho M, Garshell J, Neyman N, Altekruse SF, Kosary CL, Yu M, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Lewis DR, Chen HS, Feuer EJ, Cronin KA (eds). SEER Cancer Statistics Review, 1975-2010, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2010/, based on November 2012 SEER data submission, posted to the SEER web site, April 2013. Last accessed November 8, 2013.

[3] Anand P, Kunnumakara AB, Sundaram C, et al. Cancer is a preventable disease that requires major lifestyle changes. *Pharm Res.* 2008;25(9):2097-2116. Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2515569/?tool=pubmed. Last accessed November 8, 2013.

Section 2
Methods

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual state-based system of health surveys funded by the Centers for Disease Control and Prevention (CDC). It is a population-based, random-digit-dial telephone survey which uses disproportionate stratified sampling. The BRFSS is administered to adults, age 18 years and older, and focuses on behavioral risk factors, preventive health measures including cancer screening, and health care access. In Maryland, the survey is overseen by the Vital Statistics Administration (VSA) at the Maryland Department of Health and Mental Hygiene (DHMH).

Sampling and Technical Information[1]

The sampling scheme for BRFSS can be found on the BRFSS website at http://www.cdc.gov/brfss/annual_data/2012/pdf/Overview_2012.pdf. A pool of 151,110 landline and 16,350 cellular telephone numbers of Marylanders were provided by Genesys – Market Systems Group (MSG) for this survey. Telephone numbers are divided into two groups, or strata, and are sampled separately. Within each strata, there are the high-density (listed one-plus) and medium-density (unlisted one-plus) blocks. Each 'block' of telephone numbers consists of one hundred consecutive phone numbers that contain the same area code, prefix, and first two digits of the suffix and all possible combinations of the last two digits. Telephone numbers that come from hundred blocks with at least one listed household telephone number are put in the either the high-density stratum (listed one-plus blocks) or the medium-density stratum (unlisted one-plus blocks). The two strata provide a probability sample of all households in Maryland with landline telephones, such that each household has an equal chance of being selected for the survey. For the 2012 survey, 980 cell phone interviews were conducted. Cell phone numbers were selected as part of a random sample of cell phone numbers. In order to be eligible for the survey, cell phone respondents had to report that they receive at least 90% of their phone calls via the cell phone.

Data Collection

The survey was administered by Abt SRBI, a research and data collection firm, using computer assisted telephone interview (CATI) technology. To reach a final disposition for each telephone number, up to 15 calling attempts were made on various days of the week and at different times of the day. If someone answered the telephone, the number was confirmed to be a residential phone number. Non-residential numbers were ineligible. If the interviewer determined that there was only one person age 18 years or older living in the household, he or she was invited to participate in the survey. If two or more age-eligible persons lived there, one was randomly selected to be interviewed. An anonymous questionnaire was administered, lasting approximately 20 minutes. In 2012, interviewers asked questions about a variety of topics including demographics, cancer screening, chronic disease, health risk factors, and access to health care. The weighted American Association for Public Opinion Research (AAPOR) response rate was 49.9%.

Questionnaire and Variables

Questions analyzed for this report focused on cancer screening, health care access, and preventive and lifestyle behaviors. The complete questionnaire can be found at: http://www.marylandbrfss.org/pdf/MD_BRFSS_Questionnaire_2012.pdf.

Respondents were asked to report their ethnicity as either Hispanic or non-Hispanic and their race as one or more of the following: white; black or African American; Asian; Native Hawaiian or Other Pacific Islander; American Indian or Alaska Native; or Other. Respondents who reported their ethnicity as Hispanic are reported as Hispanic, regardless of race. Because of small numbers, people who reported their race as something different from white or black/African American or reported more than one race, were grouped together as people of "other race."

For all demographic variables except income, there were a small number of responses of 'Don't know/not sure' and 'Refused'; these responses were set to 'missing' and are excluded from the tabulated frequencies. An exception is for reported annual household income, where the categories of 'Don't know/not sure,' and 'Refused' are included in the tabulations. In the stratified results tables, urban or rural area of residence was determined by self-reported county of residence, where urban counties included Anne Arundel, Baltimore, Carroll, Harford, Howard, Montgomery, and Prince George's counties, and Baltimore City; rural counties included the remaining 16 counties in Southern and Western Maryland and on the Eastern Shore. For 520 respondents who did not report their county, county was imputed based on telephone number. Education levels were combined into five categories: completed through 8th grade or less, less than high school; high school graduate or General Equivalency Diploma (GED); some college (1-3 years) or technical school; and college graduate or higher. Reported annual household income categories were grouped into 7 categories: <$25,000; $25,000-<$35,000; $35,000-<$50,000; $50,000-<$75,000; $75,000 or greater; don't know or not sure; and refused. Results in the tables are based on the number of respondents that answered a question.

Respondents were asked whether they had ever received screening tests for specific cancers, including colon and rectum (colorectal), breast, cervical, prostate, and oral cancer, and the time since the most recent exam. Screening for colorectal cancer included the fecal occult blood test (FOBT), sigmoidoscopy or colonoscopy; mammography for breast cancer screening, Pap testing for cervical cancer screening, prostate-specific antigen (PSA) for prostate cancer screening, and receiving an oral cancer screening exam. The following table describes the specific segment of the sample for which screening questions on different cancers were analyzed:

Cancer Type	Men	Women	Age category
Colorectal	✓	✓	50 years and older
Breast		✓	40 years and older
Cervical		✓	21 to 65 years and older (who have not had a hysterectomy)
Prostate	✓		40 years and older
Oral	✓	✓	18 years and older

Screening tests were considered to be up-to-date by the following criteria: colorectal cancer if the respondent had an FOBT in the last year or sigmoidoscopy in the last 5 years or colonoscopy in the last 10 years; breast cancer with a mammogram in the last 2 years, cervical cancer screening with a Pap test in the last 3 years, and oral cancer screening with an exam in the last year. While prostate cancer screening is no longer recommend by the United States Preventive Services Task Force (USPSTF), we present results on prostate cancer screening with the PSA test in the last year. A respondent was considered to be 'not-up-to-date' with a screening test if he/she responded don't know/not sure or refused to give the time since the last test. (This was done to provide the same denominator for ever having a screening test and being up-to-date.) Men who reported having a PSA test were asked the reason for the last test. Men who answered either for a prostate problem or because they had prostate cancer were not included in the up-to-date analysis, as their test was done for a reason other than screening.

'Current smokers' were defined as those who smoked at least 100 cigarettes or more in their entire life and, at the time of the survey, smoked every day or some days. 'Former smokers' were those who smoked at least 100 cigarettes in their life but were not smoking cigarettes at the time of the survey. 'Never smokers' were those who smoked less than 100 cigarettes in their life or who had never smoked.

Alcohol consumption was categorized according to use in the last 30 days, as high-risk drinking, low-risk drinking, or non-drinkers. For women, high-risk drinking was defined as having more than seven drinks a week or engaging in binge drinking (having four or more drinks on one occasion). High-risk drinking for men was defined as consuming more than 14 drinks a week or engaging in binge drinking (having five or more drinks on one occasion.) Low-risk drinking was defined as reporting alcohol consumption in the last 30 days but did not meet the criteria for high-risk drinking. Non-drinkers reported no alcohol consumption in the last 30 days.

All respondents are asked the questions in the BRFSS core sections. One-half of the respondents, randomly selected from the total number of respondents with land-line telephones only, are designated split 1; the other half are split 2. Adults in split 1 are asked about half of the remaining questions from the optional modules and the state-added questions; those in split 2 are asked the other half of the questions. In Maryland, respondents in split 1 were asked questions about prostate cancer decision making, skin cancer prevention, oral cancer screening, and reasons for not having been screened for colorectal cancer.

Data Analysis

A final weight was assigned to each respondent according to the BRFSS Raking weighting methodology, which was used for the first time for the 2011 survey and is determined from the design weight and the raking.[2] The design weight was based on the sampling probability among six strata, residential telephone sampling among the two density strata of phone numbers (listed one-plus and not listed one-plus), the number of adults age 18 years and older in the respondent's household, and the inverse of the number of residential telephone numbers in each household. For the final weight, the design weight is 'raked' to take into account age group by gender, race/ethnicity, education, marital status, home ownership vs. renting (tenure), gender by race/ethnicity, age group by race/ethnicity, and phone ownership. As geographic regions are included for Maryland, four additional margins (region, region by age

group, region by gender, region by race/ethnicity) are included. The final weights were calculated so that the responses are representative of the Maryland population 18 years and older. We did not age adjust the data to the 2000 United States standard population.

Statistical analyses (population-based numbers and percentages) were performed with weighted data using SAS Version 9.2. Unless otherwise stated, results in the tables of the report have the following values:

- 'N' is the number of people in the sample who responded to a survey question;
- 'n' is the number of people answering "yes" to that question or having that characteristic;
- 'Sample %' is the unweighted percent of the sample that had that characteristic;
- 'wt %' (weighted percent) is the estimate of the percent of the Maryland population based on the weighted sample who answered 'Yes' to the question or had that characteristic; and
- '95% CI' is the 95% confidence interval around the weighted percent.

All weighted percentages are estimates of the population percentage and are based on the number of respondents answering the question. We have excluded missing, 'Don't know/not sure' and 'Refused' answers (except for income as previously described). No results are suppressed in this report because of the small number of respondents in some sub-groups. Prevalence estimates derived from samples with less than 50 observations are included in the tables, but may be unreliable due to small numbers. Caution should be exercised when making comparisons based on a small number of respondents.

In the tables, the heading 'P-value' gives the measure of statistical significance. Using standard convention, p-values < 0.05 are considered to be statistically significant. If a statistically significant difference is present for a given characteristic and there are more than two levels of that characteristic (for instance, the five levels of education), a statistically significant difference is present between at least two levels of that characteristic, but not necessarily between every pairwise comparison among the levels. When reviewing the tables, it is important to remember that, while a difference may be statistically significant, the clinical or practical importance of the difference may not be significant.

It is also important to note that the size of the sample plays a part in determining statistical significance. For some measures there may appear to be important differences between groups, but because the number of respondents is small, the p-value is > 0.05. This means that we do not know if the difference seen is a real and consistent difference between the groups, or whether the difference seen is due to a random variation of small numbers and there is no real difference between the groups.

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[1] Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System, Annual Survey Data, 2011 BRFSS Overview. Atlanta, Georgia: U.S. Department of Health and Human Services. Available at http://www.cdc.gov/brfss/annual_data/annual_2012.html. Last accessed November 8, 2013.

[2] Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. Technical Information and Data. BRFSS Weighting Formula. Atlanta, GA. U.S. Department of Health and Human Services. Available at http://www.cdc.gov/brfss/annual_data/2012/pdf/Weighting%20the%20Data_webpage%20content%2020130709. Last accessed November 8, 2013.

Chapter 3. The Survey Sample

The responses from 12,812 people are included in this analysis. The sample is weighted by the Centers for Disease Control and Prevention (CDC) to be representative of the Maryland population (see Section 2-Method). Table 3-1 shows the sample and weighted percentages for the respondents by demographic characteristics for respondents age 18 years and older. Race and ethnicity are reported in four groups; non-Hispanic white, non- Hispanic black, non-Hispanic other, and Hispanic and is specified as "Race" throughout the report. Respondents who reported their ethnicity as Hispanic are reported as Hispanic, regardless of race. The term "black" is used in the report to represent people who called their race African American or black. In the analysis, "other" race refers to people who called their race something different from white or black, and includes Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and multi-race. Whites comprised 72.8% of the sample, blacks made up 19.6%, Hispanics made up 2.7%, and other races comprised 4.9% of the sample (Asians comprised 2.0%, Native Hawaiians or other Pacific Islanders made up 0.2%, American Indians or Alaska Natives made up 0.5%, multiracial made up 1.2% and other responses comprised 1.0% of the sample). Whites are weighted to 54.9%, blacks are weighted to 28.8%, Hispanics are weighted to 8.3% and people of other races are weighted to 8.1%. Women made up 61.8% of the sample and are weighted to 52.4%. Table 3-2 shows the same sample and weighted percentages for the respondents by demographic characteristics for respondents age 40 years and older (as many of the screening tests are presented for older Marylanders).

Figures 3-1 and 3-2 compare the race/gender groups and the age groups of the survey respondents to their weighted percents for Marylanders age 18 years and older. White women made up 44.2% of the sample, whereas they account for 28.6% of the Maryland population when weighted (Figure 3-1). Black men made up 6.2% of the sample and are weighted to match 12.9% of the population. People age 75 years and older made up 14.7% of the sample and are weighted to 7.4% of the population (Figure 3-2).

The number of people who were surveyed in each jurisdiction, by gender and race, is shown in Table 3-3.

Chart 3-1 Comparison of the 2012 BRFSS Survey Sample to Maryland's Population by Race/Ethnicity and Gender
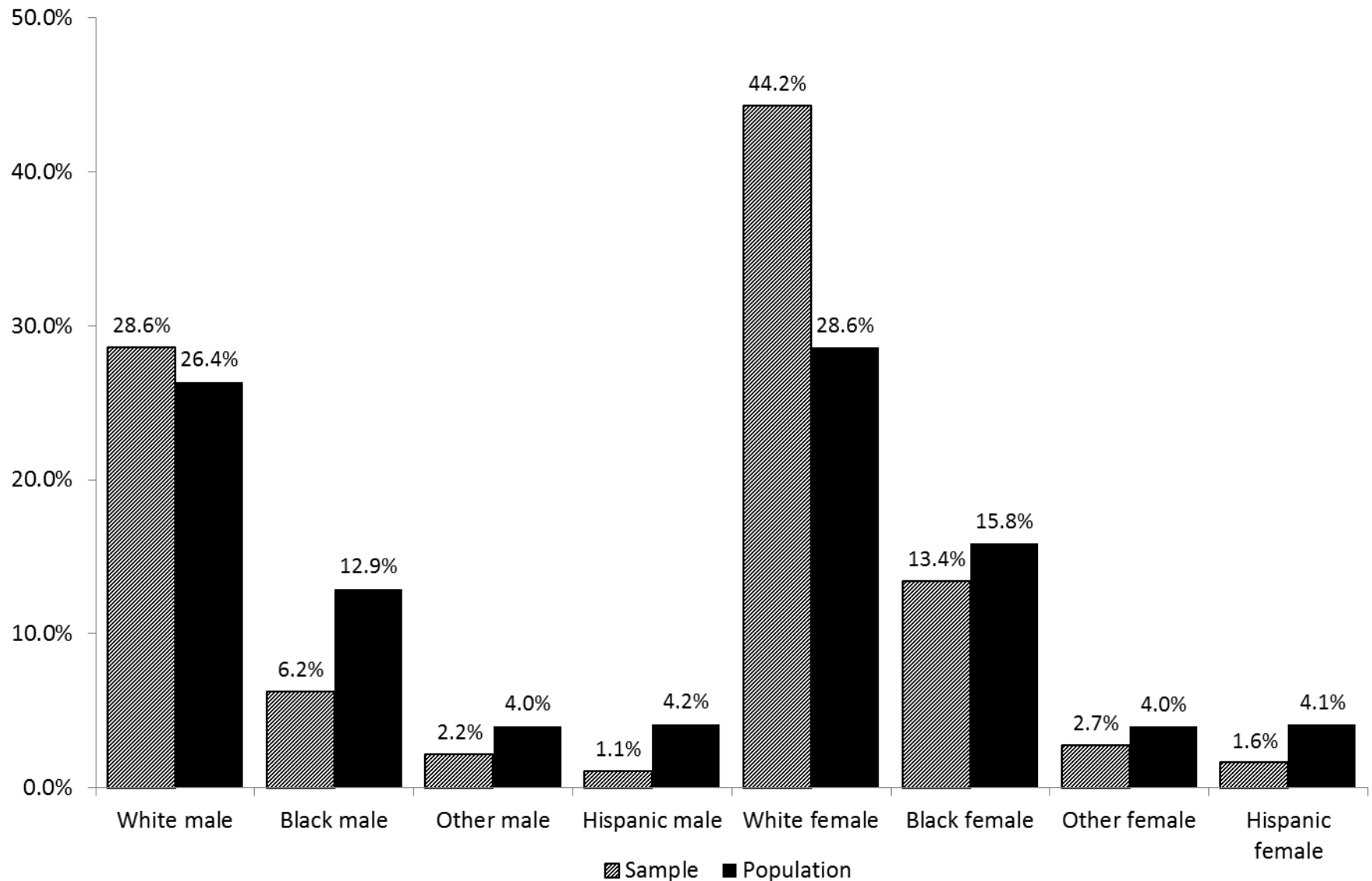
Chart 3-2. Comparison of the 2012 BRFSS Survey Sample to Maryland's Population by Age

TABLE 3-1. DEMOGRAPHICS OF THE SURVEY SAMPLE, AGE 18 YEARS AND OLDER, WEIGHTED TO THE MARYLAND POPULATION

Selected Characteristic	Sample N	Sample %	wt %	95% CI
Geographic location (N=12,812)				
Urban	7,069	55.2%	78.0%	76.9-79.0%
Rural	5,743	44.8%	22.0%	21.0-23.1%
Gender (N=12,812)				
Male	4,892	38.2%	47.6%	46.1-49.1%
Female	7,920	61.8%	52.4%	50.9-53.9%
Age in Years (N=12,623)				
18-29	752	6.0%	20.4%	18.9-22.0%
30-39	1,278	10.1%	16.5%	15.3-17.8%
40-49	2,149	17.0%	18.4%	17.3-19.5%
50-64	4,242	33.6%	27.1%	25.9-28.3%
65 -74	2,349	18.6%	10.1%	9.4-10.7%
75 and older	1,853	14.7%	7.4%	6.9-7.9%
Race (N=12,617)				
White	9,187	72.8%	54.9%	53.4-56.5%
Black or African American	2,476	19.6%	28.8%	27.3-30.2%
Asian	250	2.0%	5.9%	5.0-6.8%
Native Hawaiian/Other Pacific Islander	26	0.2%	0.2%	0.1-0.3%
American Indian/Alaska Native	61	0.5%	0.4%	0.2-0.5%
Other race	125	1.0%	0.7%	0.5-0.9%
Multiracial	155	1.2%	0.9%	0.7-1.1%
Hispanic	337	2.7%	8.3%	7.1-9.4%
Gender and Race (N=12,617)				
White male	3,606	28.6%	26.4%	25.1-27.6%
Black male	786	6.2%	12.9%	11.8-14.1%
Other male	272	2.2%	4.0%	3.3-4.7%
Hispanic male	134	1.1%	4.2%	3.3-5.0%
White female	5,581	44.2%	28.6%	27.4-29.8%
Black female	1,690	13.4%	15.8%	14.8-16.9%
Other female	345	2.7%	4.0%	3.4-4.7%
Hispanic female	203	1.6%	4.1%	3.3-4.9%
Marital Status (N=12,691)				
Married	7,039	55.5%	48.2%	46.7-49.7%
Divorced	1,680	13.2%	9.9%	9.1-10.7%
Widowed	1,740	13.7%	6.7%	6.2-7.2%
Separated	298	2.3%	2.3%	1.8-2.7%
Never married	1,684	13.3%	28.4%	26.8-29.9%
Partner of unmarried couple	250	2.0%	4.6%	3.8-5.4%

Selected Characteristic	Sample N	Sample %	wt %	95% CI
Education (N=12,738)				
Grade 8 or less	219	1.7%	2.9%	2.3-3.5%
Grades 9-11	650	5.1%	9.3%	8.2-10.4%
High school grad or GED	3,385	26.6%	26.6%	25.3-28.0%
College 1-3 years	3,090	24.3%	28.0%	26.6-29.4%
College graduate or more	5,394	42.3%	33.2%	31.9-34.4%
Employment Status (N=12,714)				
Employed for Wages	5,904	46.4%	55.1%	53.6-56.5%
Self Employed	985	7.7%	7.9%	7.0-8.7%
Unemployed > 1 year	365	2.9%	3.3%	2.8-3.9%
Unemployed < 1 year	292	2.3%	4.1%	3.4-4.9%
Homemaker	670	5.3%	4.6%	4.0-5.2%
Student	186	1.5%	5.1%	4.2-6.1%
Retired	3,724	29.3%	15.8%	15.0-16.6%
Unable to work	588	4.6%	4.0%	3.4-4.6%
Household Income (N=12,754)				
Less than $10,000	366	2.9%	4.0%	3.3-4.7%
$10,000-<$15,000	392	3.1%	2.8%	2.3-3.3%
$15,000-<$20,000	621	4.9%	5.4%	4.6-6.2%
$20,000-<$25,000	855	6.7%	7.1%	6.2-7.9%
$25,000-<$35,000	1,035	8.1%	8.3%	7.4-9.2%
$35,000-<$50,000	1,355	10.6%	10.6%	9.7-11.5%
$50,000-<$75,000	1,761	13.8%	13.9%	12.9-15.0%
$75,000 or greater	4,572	35.8%	35.2%	33.8-36.5%
Don't know/not sure	766	6.0%	6.9%	6.0-7.8%
Refused	1,031	8.1%	5.7%	5.1-6.3%

Sample N - respondents in the sample with that characteristic
Sample % - percent in the sample with that characteristic

Maryland Cancer Screening and Risk Behaviors, 2012

TABLE 3-2. DEMOGRAPHICS OF THE SURVEY SAMPLE, AGE 40 YEARS AND OLDER, WEIGHTED TO THE MARYLAND POPULATION

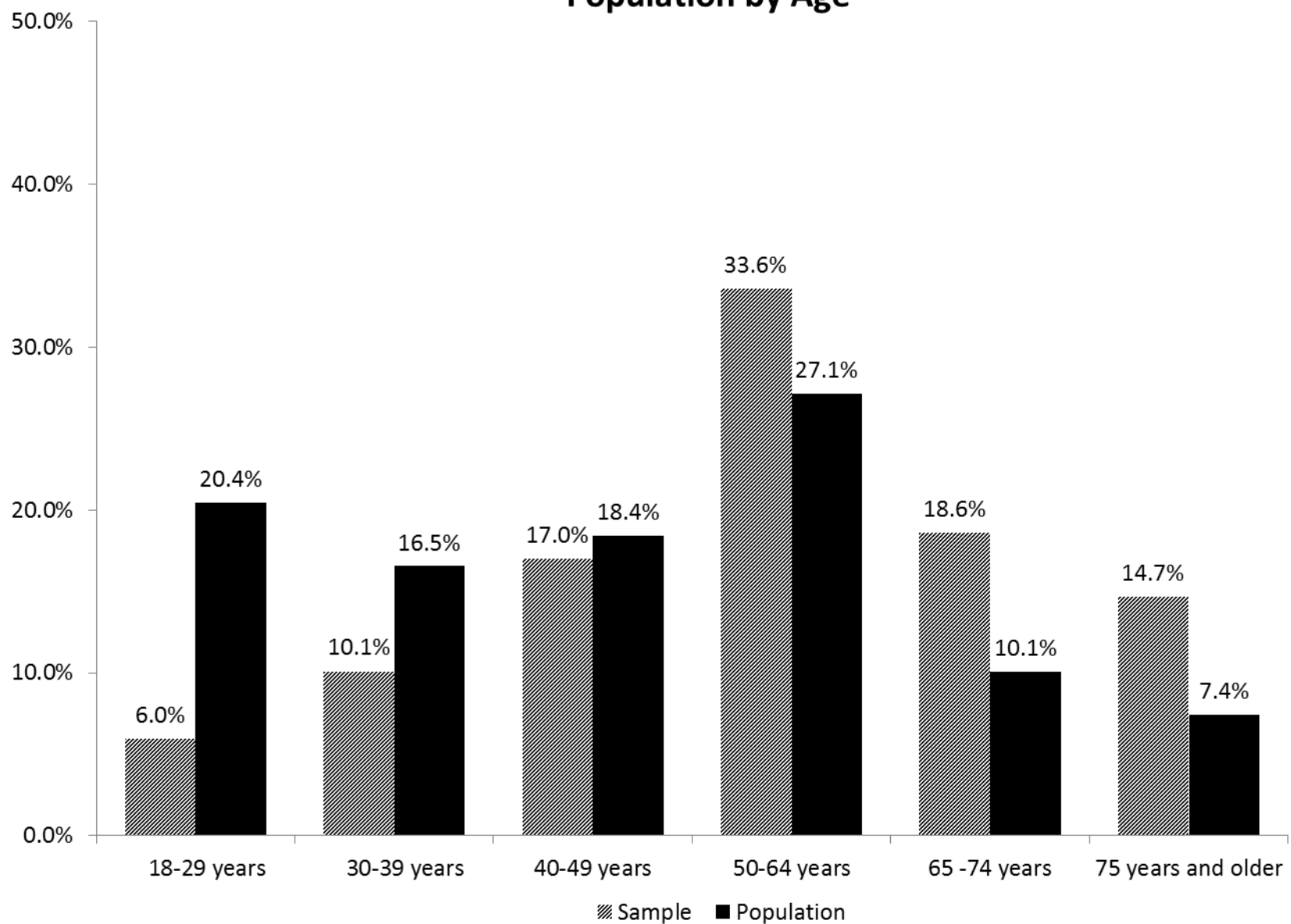| Selected Characteristic	Sample N	Sample %	wt %*	95% CI
Geographic location (N=10,593)				
Urban	5,647	53.3%	77.0%	75.9-78.1%
Rural	4,946	46.7%	23.0%	21.9-24.1%
Gender (N=10,593)				
Male	4,011	37.9%	46.6%	45.0-48.1%
Female	6,582	62.1%	53.4%	51.9-55.0%
Age in Years (N=10,593)				
40-44	972	9.2%	15.6%	14.2-16.9%
45-49	1,177	11.1%	13.7%	12.6-14.8%
50-54	1,403	13.2%	17.1%	15.9-18.3%
55-59	1,395	13.2%	13.4%	12.4-14.4%
60-64	1,444	13.6%	12.5%	11.5-13.4%
65 -74	2,349	22.2%	16.0%	15.0-16.9%
75 and older	1,853	17.5%	11.8%	10.9-12.6%
Race (N=10,444)				
White	7,896	75.6%	60.5%	58.9-62.1%
Black or African American	1,914	18.3%	27.5%	26.0-28.9%
Asian	152	1.5%	4.5%	3.6-5.4%
Native Hawaiian/Other Pacific Islander	18	0.2%	0.2%	0.07-0.3%
American Indian/Alaska Native	47	0.5%	0.5%	0.3-0.7%
Other race	97	0.9%	0.7%	0.5-0.8%
Multiracial	113	1.1%	0.7%	0.6-0.9%
Hispanic	207	2.0%	5.4%	4.4-6.4%
Gender and Race (N=10,444)				
White male	3,077	29.5%	28.3%	27.0-29.6%
Black male	604	5.8%	12.4%	11.2-13.7%
Other male	180	1.7%	3.2%	2.5-4.0%
Hispanic male	71	0.7%	2.4%	1.6-3.2%
White female	4,819	46.1%	32.2%	30.9-33.5%
Black female	1,310	12.5%	15.0%	14.0-16.1%
Other female	247	2.4%	3.4%	2.8-4.0%
Hispanic female	136	1.3%	3.0%	2.3-3.7%
Marital Status (N=10,513)				
Married	5,989	57.0%	59.3%	57.8-60.9%
Divorced	1,552	14.8%	13.6%	12.6-14.7%
Widowed	1,714	16.3%	10.5%	9.7-11.3%
Separated	243	2.3%	2.5%	2.0-3.0%
Never married	886	8.4%	11.7%	10.6-12.9%
Partner of unmarried couple	129	1.2%	2.4%	1.8-3.0%

Selected Characteristic	Sample N	Sample %	wt %*	95% CI
Education (N=10,541)				
Grade 8 or less	199	1.9%	3.2%	2.5-3.9%
Grades 9-11	569	5.4%	9.7%	8.5-10.8%
High school grad or GED	2,892	27.4%	27.2%	25.9-28.6%
College 1-3 years	2,477	23.5%	25.3%	24.0-26.6%
College graduate or more	4,404	41.8%	34.7%	33.3-36.0%
Employment Status (N=10,519)				
Employed for Wages	4,436	42.2%	50.4%	48.9-52.0%
Self Employed	861	8.2%	9.2%	8.2-10.2%
Unemployed > 1 year	289	2.7%	3.2%	2.7-3.7%
Unemployed < 1 year	190	1.8%	2.6%	2.0-3.2%
Homemaker	511	4.9%	4.2%	3.7-4.7%
Student	32	0.3%	0.3%	0.2-0.5%
Retired	3,662	34.8%	24.9%	23.7-26.0%
Unable to work	538	5.1%	5.2%	4.5-5.9%
Household Income (N=10,550)				
Less than $10,000	286	2.7%	3.0%	2.4-3.6%
$10,000-<$15,000	338	3.2%	2.8%	2.3-3.3%
$15,000-<$20,000	535	5.1%	5.1%	4.3-5.8%
$20,000-<$25,000	707	6.7%	6.4%	5.6-7.3%
$25,000-<$35,000	884	8.4%	8.6%	7.6-9.5%
$35,000-<$50,000	1,132	10.7%	10.6%	9.6-11.6%
$50,000-<$75,000	1,433	13.6%	14.0%	13.0-15.1%
$75,000 or greater	3,740	35.5%	37.8%	36.3-39.2%
Don't know/not sure	605	5.7%	5.0%	4.3-5.6%
Refused	890	8.4%	6.8%	6.2-7.5%

Sample N - respondents in the sample with that characteristic
Sample % - percent in the sample with that characteristic

Maryland Cancer Screening and Risk Behaviors, 2012

TABLE 3-3. TOTAL NUMBER AND PERCENT OF PEOPLE INTERVIEWED IN EACH JURISDICTION, BY GENDER AND RACE

Jurisdiction	Total n	% of sample	Males n	%	Females n	%	Whites n	%	Blacks n	%	Other Race n	%	Hispanic n	%
Allegany	343	2.7%	139	2.8%	204	2.6%	324	3.5%	8	0.3%	8	1.3%	0	0.0%
Anne Arundel	896	7.0%	338	6.9%	558	7.0%	725	7.9%	95	3.8%	40	6.5%	24	7.1%
Baltimore City	745	5.8%	235	4.8%	510	6.4%	294	3.2%	394	15.9%	34	5.5%	16	4.7%
Baltimore	1,523	11.9%	552	11.3%	971	12.3%	1035	11.3%	346	14.0%	72	11.7%	40	11.9%
Calvert	364	2.8%	139	2.8%	225	2.8%	299	3.3%	36	1.5%	13	2.1%	8	2.4%
Caroline	258	2.0%	92	1.9%	166	2.1%	219	2.4%	23	0.9%	7	1.1%	6	1.8%
Carroll	278	2.2%	118	2.4%	160	2.0%	257	2.8%	6	0.2%	8	1.3%	3	0.9%
Cecil	316	2.5%	117	2.4%	199	2.5%	276	3.0%	19	0.8%	14	2.3%	3	0.9%
Charles	514	4.0%	205	4.2%	309	3.9%	319	3.5%	146	5.9%	31	5.0%	10	3.0%
Dorchester	283	2.2%	85	1.7%	198	2.5%	205	2.2%	65	2.6%	8	1.3%	2	0.6%
Frederick	755	5.9%	317	6.5%	438	5.5%	654	7.1%	48	1.9%	30	4.9%	14	4.2%
Garrett	321	2.5%	112	2.3%	209	2.6%	309	3.4%	0	0.0%	5	0.8%	3	0.9%
Harford	472	3.7%	191	3.9%	281	3.5%	379	4.1%	57	2.3%	13	2.1%	14	4.2%
Howard	465	3.6%	188	3.8%	277	3.5%	336	3.7%	74	3.0%	37	6.0%	12	3.6%
Kent	214	1.7%	72	1.5%	142	1.8%	185	2.0%	20	0.8%	6	1.0%	2	0.6%
Montgomery	1,548	12.1%	675	13.8%	873	11.0%	1047	11.4%	212	8.6%	162	26.3%	97	28.8%
Prince George's	1,142	8.9%	415	8.5%	727	9.2%	306	3.3%	696	28.1%	64	10.4%	53	15.7%
Queen Anne's	348	2.7%	150	3.1%	198	2.5%	314	3.4%	20	0.8%	5	0.8%	4	1.2%
St. Mary's	384	3.0%	155	3.2%	229	2.9%	324	3.5%	27	1.1%	19	3.1%	7	2.1%
Somerset	160	1.2%	51	1.0%	109	1.4%	122	1.3%	29	1.2%	6	1.0%	1	0.3%
Talbot	380	3.0%	145	3.0%	235	3.0%	324	3.5%	39	1.6%	9	1.5%	3	0.9%
Washington	538	4.2%	184	3.8%	354	4.5%	494	5.4%	17	0.7%	13	2.1%	10	3.0%
Wicomico	344	2.7%	134	2.7%	210	2.7%	259	2.8%	67	2.7%	10	1.6%	4	1.2%
Worcester	221	1.7%	83	1.7%	138	1.7%	181	2.0%	32	1.3%	3	0.5%	1	0.3%

Maryland Cancer Screening and Risk Behaviors Report, 2012

Chapter 4. Access to Health Care and Cancer Screening

  Increasing the proportion of people living in the United States who have health insurance from 82.3% in 2008 to 100% is one of the goals of HP 2020.[1] Uninsured persons are less likely to receive medical care, more likely to die prematurely, and more likely to have poorer health status.[2] The 2012 National Healthcare Quality Report (NHQR) focused its cancer information on colorectal cancer (CRC) screening and treatment.[3] They found that from 2000-2010, among adults age 50-64 years, those without insurance were less likely to receive CRC screening than those with private insurance. In 2008 and 2010, adults with public insurance were less likely to receive CRC screening than adults with private insurance.

Health Care Coverage (Figure 4-1 and Table 4-1)

Among Maryland adults age 18 years and older, 87% reported they have some form of health insurance. Statistically significant differences in health insurance status were observed by several demographic characteristics.

- The proportion of Marylanders having health insurance differed by age. Among those age 18-29 years, 76% reported having health insurance, compared to 99% among adults age 75 years and older.
- A lower proportion of Hispanics (53%), blacks (87%), and persons of other race (85%) reported having health insurance compared to whites (92%).
- Health insurance was highest among high school graduates (84%), those with some college (88%), and those with a college degree or higher (95%) compared to those with an elementary education or less (63%) and some high school (71%).

Figure 4-1. Percentage of Adults Age 18 Years and Older Who Have Health Insurance by Demographics Maryland, 2012
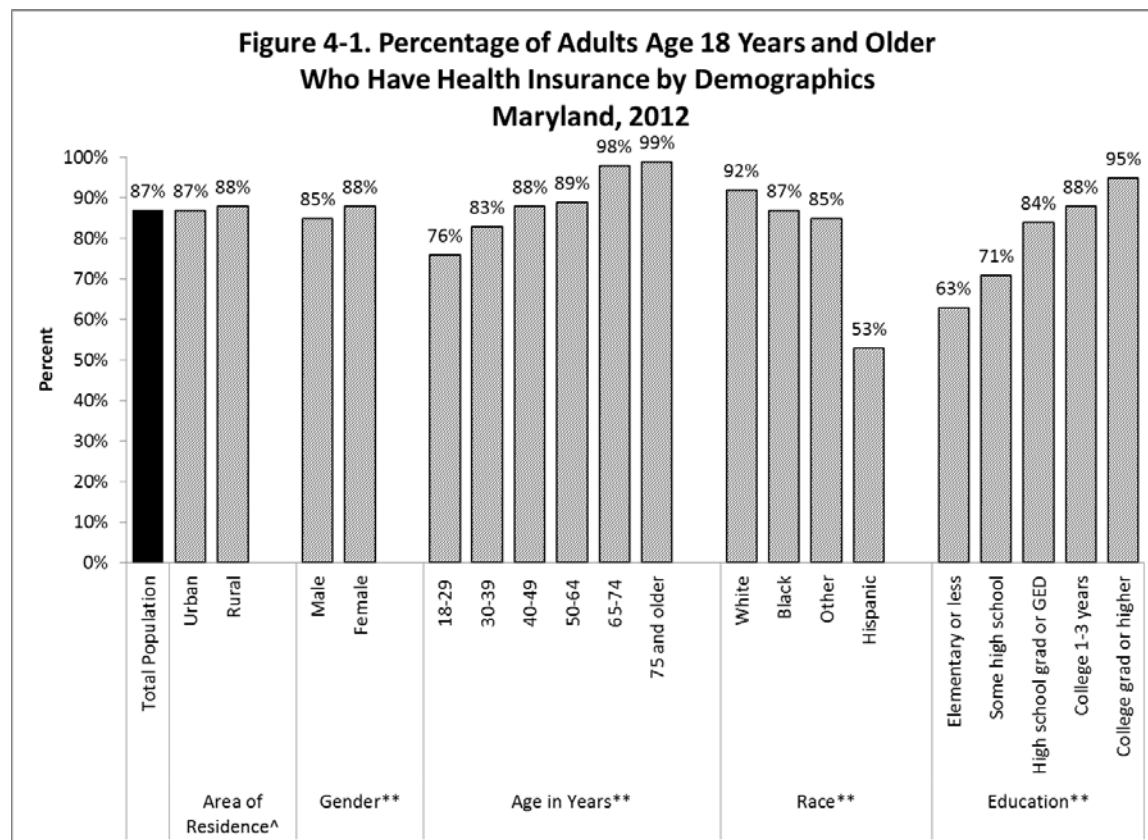
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Cost as a Barrier To Health Care Access (Figure 4-2 and Table 4-1)

The Healthy People 2020 also aims to reduce the proportion of individuals who are unable to obtain or delay in obtaining necessary medical care from 4.7% in 2007 to 4.2% by 2020.[4] A contributing factor to delaying obtaining medical treatment or selecting one treatment type over another may include the consideration of cost. This has been noted for cancer treatment.[5]

Among Maryland adults age 18 years and older,

- Twelve percent (12%) could not see a doctor in the past 12 months because of cost.
- This was lowest among adults age 75 years and older (3%) and age 65-74 years (5%). The remaining age groups ranged from 11-15%.
- Compared to whites (9%), Hispanics had the highest proportion (26%) that could not see a doctor within the past 12 months due to cost, followed by blacks (14%).
- Compared to college graduates, all other education groups reported higher prevalence of adults who could not see a doctor in the past 12 months because of cost. This was highest among those with an elementary education or less.

Figure 4-2. Percentage of Adults Age 18 Years and Older Who Could Not See a Doctor in the Past 12 Months Because of Cost by Demographics Maryland, 2012
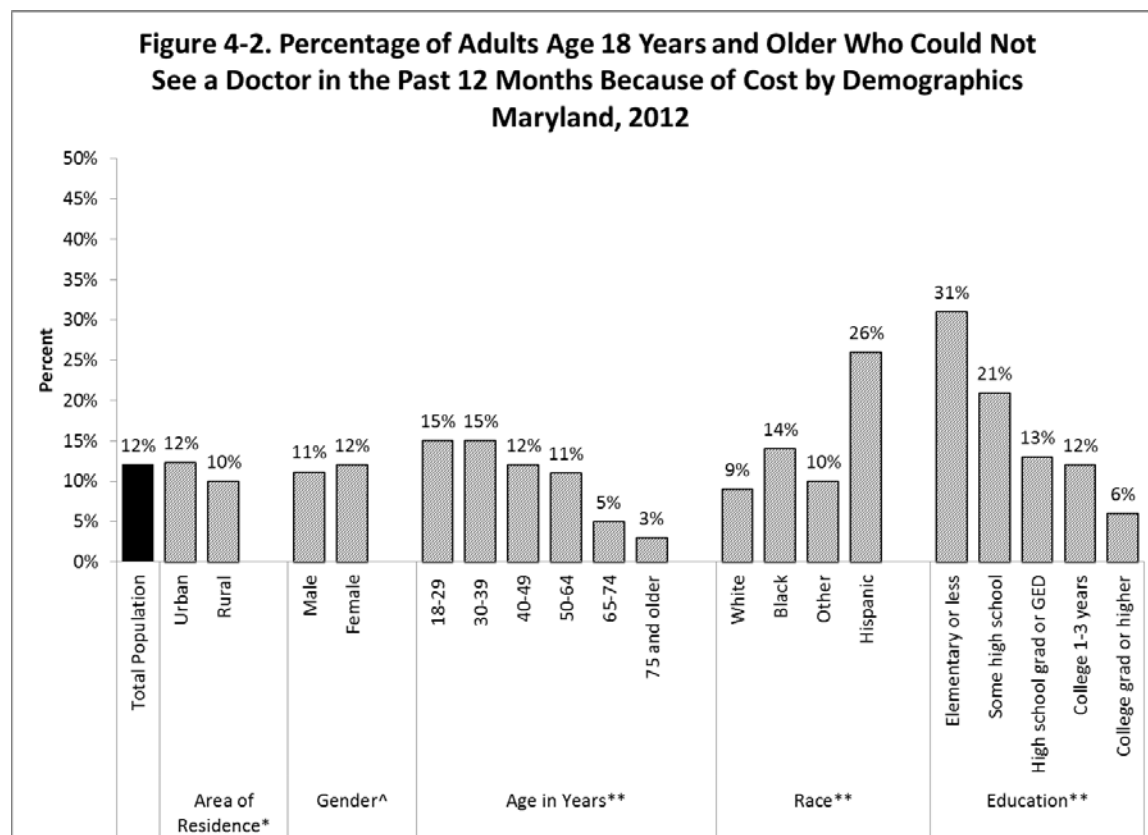
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Having a Health Care Provider (Figure 4-3 and Table 4-2)

Another Healthy People 2020 objective for Access to Health Services is to increase the proportion of people with a usual primary care provider from the baseline of 76.3% in 2007 to 83.9% in 2020.[6]

- Among Maryland residents age 18 years and older, 83% reported they had at least one person they considered as their personal doctor or health care provider (HCP).
- A higher proportion of women (88%) had an HCP compared to men (78%).
- As age increased, the proportion of respondents reporting having a HCP increased and was highest among those age 65 years and older.
- A higher proportion of whites (87%) had an HCP compared to persons of other race (78%) and Hispanics (60%). There was no significant difference between whites and blacks (85%).
- Access to an HCP differed by education level; a higher proportion of those with a college degree or higher (87%) reported having at least one person they consider to be their HCP compared to those with an elementary education or less (68%) and with some high school (76%).
- There was no difference by urban or rural area of residence.

Figure 4-3. Percentage of Adults Age 18 Years and Older Who Have At Least One Personal Doctor or Health Care Provider by Demographics Maryland, 2012
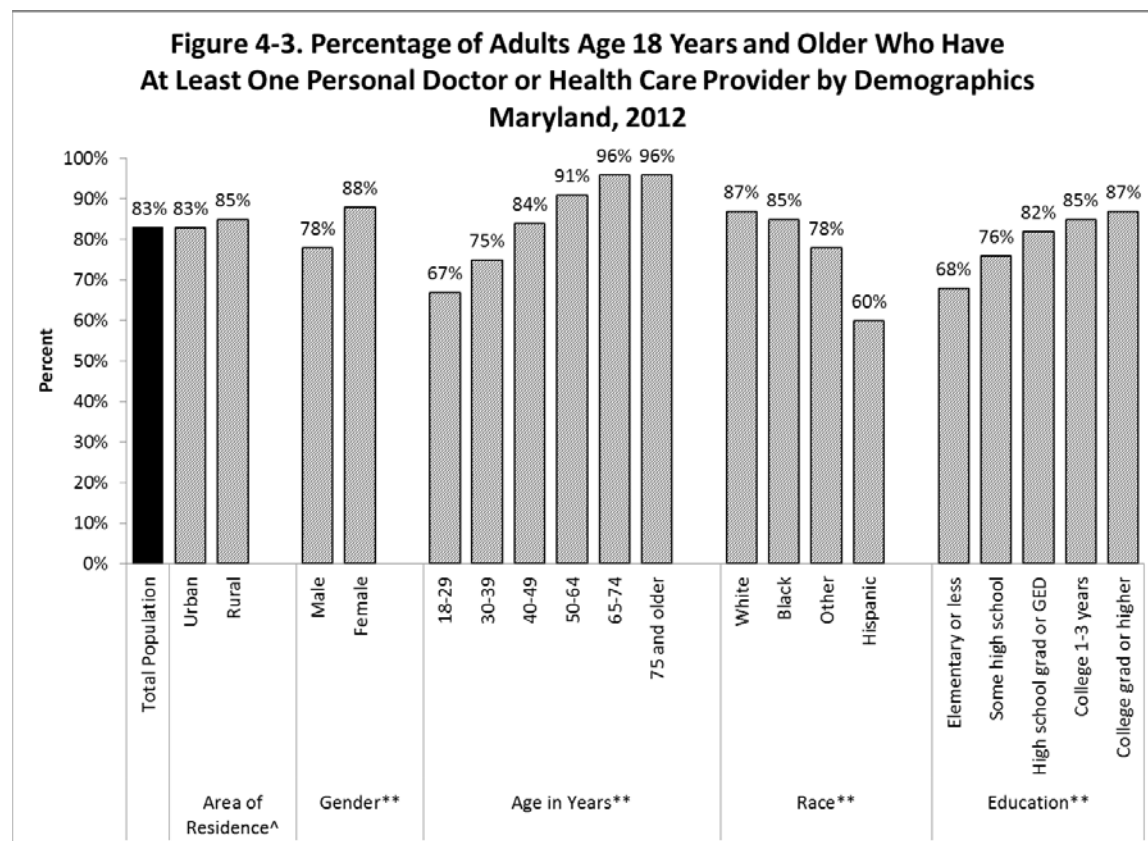
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

Regular Health Care Visit (Figure 4-4 and Table 4-2)

Access to health care (primarily health insurance coverage and having a usual source of care) is a strong predictor of recent cancer screening.[7] Across all racial and ethnic groups, those who lack health insurance or have inadequate access to care typically have higher cancer incidence and mortality rates and lower rates of cancer survival.[8]

Participants were asked how long it had been since they last visited a doctor for a routine checkup.

- Seventy-six percent (76%) of Marylanders age 18 years and older said they had a routine checkup in the past year.
- Seventy-two percent (72%) of men and 80% of women reported having a routine checkup within the past year.
- A significantly higher proportion of adults age 65-74 years (89%) and age 75 years and older (93%) reported having a routine checkup in the past year, compared to those age 50-64 years (82%). Adults in the age groups under age 50 reported even lower proportions.
- A significantly higher proportion of blacks (84%) reported a routine checkup within the past year compared with whites (75%), persons of other race (69%), and Hispanics (61%).
- The proportion of Marylanders having a routine checkup in the past year did not differ significantly by educational level.

Figure 4-4. Percentage of Adults Age 18 Years and Older Who Had a Routine Checkup in the Past Year by Demographics Maryland, 2012
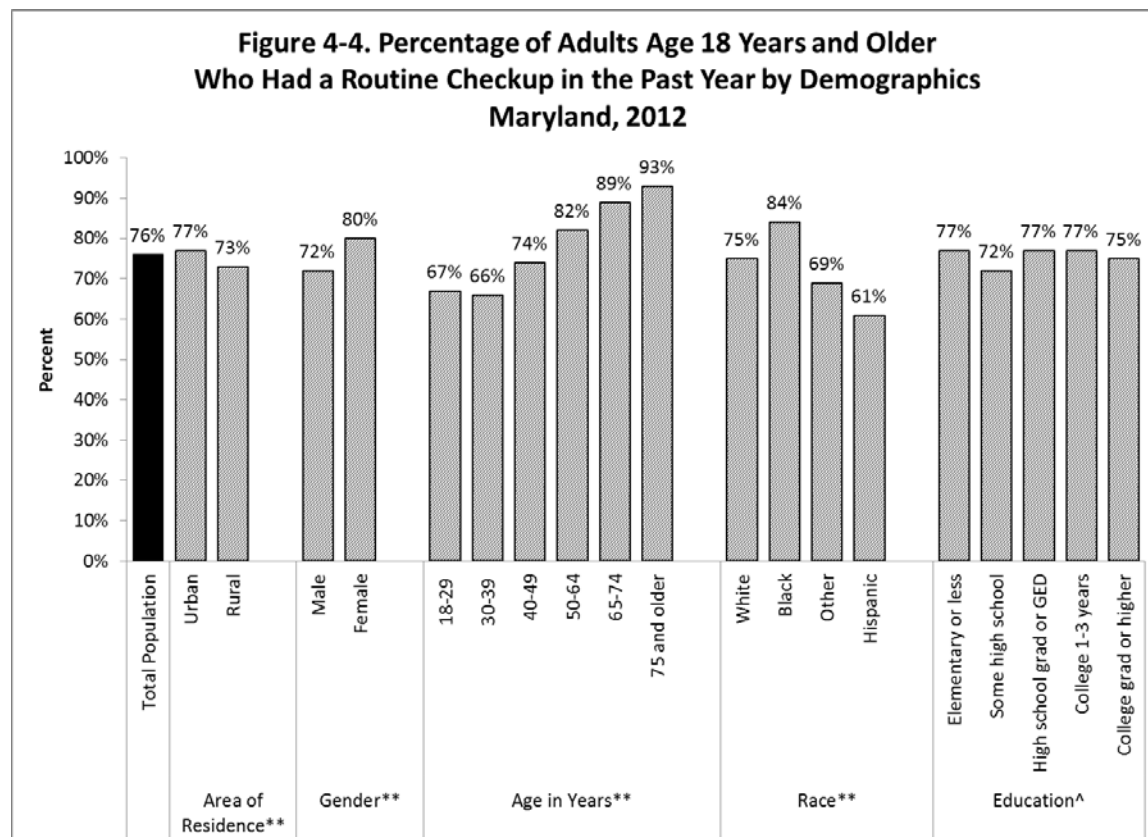
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

Health Care Access and Cancer Screening

Research has found that people who are uninsured or underinsured are less likely to be screened for cancer.[9,10,11,12]   In the analysis of the BRFSS 2012, we sought to determine whether our measures of health care access (having health insurance, the time since last routine checkup, having a primary HCP, and having delayed seeking care within the past 12 months due to cost) were associated with cancer screening. These results are reported for the individual screening tests in each chapter on cancer screening.

[1] U.S. Department of Health and Human Services. Healthy People 2020. Available at http://healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=1. Last accessed November 8, 2013.

[2] U.S. Department of Health and Human Services. Agency for Healthcare Research and Quality. National Healthcare Disparities Report, 2008. Chapter 3. Access to Healthcare. Available at http://www.ahrq.gov/qual/nhdr08/Chap3.htm. Last accessed November 8, 2013.

[3] U.S. Department of Health and Human Services. Agency for Healthcare Research and Quality. 2012 National Healthcare Disparities Report. Available at http://www.ahrq.gov/research/findings/nhqrdr/nhqr12/2012nhqr.pdf. Last accessed November 8, 2013.

[4] See footnote 1.

[5] Kaiser Family Foundation. National Survey of Households Affected by Cancer. 2006. Available at: http://www.kff.org/kaiserpolls/upload/7591.pdf. Last accessed November 8, 2013.

[6] See footnote 1.

[7] Smith RA, Cokkinides V, Hammon JE. American Cancer Society Guidelines for Early Detection of Cancer, 2006. *CA Cancer J Clin.* 2006; 56:11-25. Available at http://onlinelibrary.wiley.com/doi/10.3322/canjclin.56.1.11/pdf. Last accessed November 13, 2013.

[8] Institute of Medicine. The Unequal Burden of Cancer: An Assessment of NIH Research and Programs for Ethnic Minorities and the Medically Underserved. Washington, D.C., National Academy Press; 1999.

[9] Swan J, Breen N, Coates RJ, et al. Progress in cancer screening practices in the United States: Results from the 2000 National Health Interview Survey. *Cancer.* 2003;97(6):1528-40.

[10] Ross JS, Bradley EH, Busch SH. Use of health care services by lower-income and higher-income uninsured adults. *JAMA*. 2006; 295(17): 2027-36.

[11] Klabunde CN, Cronin KA, Breen N, et al. Trends in colorectal cancer test use among vulnerable populations in the U.S. *Cancer Epidemiol Biomarkers Prev*. 2011;20(8):1611–1621.

[12] Smith RA, Cokkinides V, Brooks D, Saslow D, Brawley OW. Cancer screening in the United States, 2010. A review of current American Cancer Society guidelines and issues in cancer screening. *CA Cancer J Clin.* 2010;60:99–119.

Table 4-1. HEALTH CARE ACCESS BY DEMOGRAPHIC CHARACTERISTICS-HAVING HEALTH INSURANCE AND NOT SEEING A DOCTOR BECAUSE OF COST, AMONG ADULTS AGE 18 YEARS AND OLDER

Selected Characteristic	Has Health Insurance					Could Not See Doctor in the Past 12 Months Because of Cost				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Total Population	12,786	11,876	87%	86-88%		12,785	1,098	12%	11-13%	
Area of Residence					^					*
Urban	7,054	6,541	87%	85-88%		7,055	648	12%	11-13%	
Rural	5,732	5,335	88%	86-90%		5,730	450	10%	8-12%	
Gender					**					^
Male	4,885	4,483	85%	83-87%		4,881	367	11%	9-13%	
Female	7,901	7,393	88%	87-90%		7,904	731	12%	11-14%	
Age in Years					**					**
18-29	746	601	76%	72-80%		751	99	15%	12-19%	
30-39	1,276	1,150	83%	79-86%		1,278	169	15%	12-18%	
40-49	2,144	1,978	88%	85-90%		2,146	228	12%	10-15%	
50-64	4,238	3,850	89%	88-91%		4,234	444	11%	10-13%	
65-74	2,347	2,306	98%	97-99%		2,347	96	5%	3-7%	
75 and older	1,849	1,818	99%	98-99%		1,841	50	3%	2-4%	
Race					**					**
White	9,173	8,675	92%	91-93%		9,168	615	9%	7-10%	
Black	2,471	2,236	87%	85-90%		2,470	326	14%	12-16%	
Other	612	544	85%	81-90%		616	75	10%	7-14%	
Hispanic	336	244	53%	46-61%		337	64	26%	19-33%	
Gender and Race					**					**
White male	3,602	3,390	91%	89-93%		3,597	202	7%	5-8%	
Black male	786	686	82%	78-86%		785	95	14%	11-18%	
Other male	270	235	88%	83-94%		272	32	8%	4-11%	
Hispanic male	133	91	53%	42-64%		134	30	28%	18-38%	
White female	5,571	5,285	93%	91-94%		5,571	413	10%	9-12%	
Black female	1,685	1,550	92%	89-94%		1,685	231	13%	11-16%	
Other female	342	309	82%	75-90%		344	43	13%	8-18%	
Hispanic female	203	153	54%	43-64%		203	34	24%	15-33%	
Education					**					**
Elementary or less	217	175	63%	51-74%		217	38	31%	20-42%	
Some high school	647	552	71%	65-78%		645	111	21%	15-26%	
High school grad or GED	3,378	3,023	84%	81-86%		3,373	369	13%	11-15%	
College 1-3 years	3,080	2,871	88%	86-91%		3,085	295	12%	10-14%	
College grad or higher	5,391	5,191	95%	93-96%		5,391	273	6%	5-7%	
Employment Status					**					**
Employed for wages	5,897	5,547	89%	87-91%		5,900	434	10%	8-11%	
Self-employed	985	854	75%	70-81%		984	113	16%	11-20%	
Out of work < 1 year	363	272	71%	64-79%		363	111	37%	28-45%	
Out of work at least 1 year	290	189	60%	51-69%		292	83	26%	18-34%	
Homemaker	667	603	81%	73-88%		668	52	13%	7-18%	
Student	183	158	83%	76-91%		185	18	9%	4-15%	
Retired	3,721	3,636	98%	97-99%		3,711	125	4%	3-5%	
Unable to work	584	530	88%	82-93%		585	145	28%	21-35%	
Household Income					**					**
<$25,000	2,229	1,844	69%	65-73%		2,223	483	29%	25-32%	
$25,000-<$35,000	1,035	906	77%	72-82%		1,034	118	15%	11-19%	
$35,000-<$50,000	1,354	1,245	86%	82-90%		1,354	133	12%	9-15%	
$50,000-<$75,000	1,759	1,684	92%	90-95%		1,758	120	8%	6-10%	
$75,000 or greater	4,570	4,489	97%	97-98%		4,569	129	3%	2-4%	
Don't know/not sure	760	673	79%	73-85%		760	64	14%	9-18%	
Refused	1,022	985	94%	91-97%		1,029	40	7%	4-11%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 ≤ p-value < 0.10
^ p-value ≥ 0.10

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TABLE 4-2. HEALTH CARE ACESS BY DEMOGRAPHIC CHARACTERISTICS-HAS A HEALTH CARE PROVIDER AND HAS HAD A CHECK-UP IN THE PAST YEAR, AMONG ADULTS AGE 18 YEARS AND OLDER

Selected Characteristic	Has At Least One Personal Doctor or Health Care Provider					Had a Routine Checkup in the Past Year				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Total Population	12,791	11,580	83%	82-85%		12,689	10,270	76%	75-77%	
Area of Residence					^					**
Urban	7,060	6,308	83%	81-85%		7,007	5,669	77%	75-79%	
Rural	5,731	5,272	85%	82-87%		5,682	4,601	73%	70-76%	
Gender					**					**
Male	4,884	4,237	78%	76-80%		4,849	3,733	72%	70-74%	
Female	7,907	7,343	88%	86-90%		7,840	6,537	80%	78-82%	
Age in Years					**					**
18-29	750	519	67%	63-72%		744	488	67%	63-71%	
30-39	1,278	1,046	75%	72-79%		1,268	880	66%	62-70%	
40-49	2,143	1,901	84%	81-87%		2,137	1,598	74%	71-77%	
50-64	4,241	3,919	91%	90-93%		4,209	3,395	82%	80-83%	
65-74	2,346	2,259	96%	95-98%		2,330	2,067	89%	87-91%	
75 and older	1,846	1,770	96%	95-98%		1,813	1,679	93%	91-95%	
Race					**					**
White	9,172	8,432	87%	85-88%		9,088	7,261	75%	74-77%	
Black	2,473	2,211	85%	83-87%		2,460	2,143	84%	82-86%	
Other	616	514	78%	73-84%		612	464	69%	63-75%	
Hispanic	337	250	60%	52-67%		337	242	61%	54-69%	
Gender and Race					**					**
White male	3,600	3,202	82%	80-85%		3,571	2,733	72%	69-74%	
Black male	786	660	79%	75-83%		782	647	78%	74-82%	
Other male	272	206	71%	63-79%		269	192	65%	56-74%	
Hispanic male	134	91	56%	45-67%		134	87	58%	47-69%	
White female	5,572	5,230	91%	89-92%		5,517	4,528	78%	76-80%	
Black female	1,687	1,551	90%	87-92%		1,678	1,496	89%	86-91%	
Other female	344	308	86%	80-92%		343	272	74%	66-81%	
Hispanic female	203	159	64%	54-74%		203	155	65%	55-75%	
Education					**					^
Elementary or less	217	184	68%	56-80%		215	180	77%	66-88%	
Some high school	646	566	76%	70-82%		638	529	72%	66-78%	
High school grad or GED	3,378	3,027	82%	80-85%		3,350	2,736	77%	74-80%	
College 1-3 years	3,087	2,798	85%	82-87%		3,058	2,492	77%	75-80%	
College grad or higher	5,389	4,945	87%	85-88%		5,356	4,277	75%	73-77%	
Employment Status					**					**
Employed for wages	5,898	5,284	83%	81-84%		5,861	4,542	74%	72-76%	
Self-employed	983	864	82%	77-86%		981	710	70%	64-75%	
Out of work < 1 year	364	294	76%	68-83%		363	263	66%	58-74%	
Out of work at least 1 year	292	209	70%	61-79%		286	195	63%	54-72%	
Homemaker	666	600	78%	70-85%		661	529	73%	66-80%	
Student	185	143	75%	66-83%		183	135	75%	66-83%	
Retired	3,719	3,559	96%	94-97%		3,680	3,316	91%	89-92%	
Unable to work	586	546	89%	83-95%		577	503	90%	86-94%	
Household Income					**					**
<$25,000	2,229	1,888	72%	68-76%		2,205	1,775	73%	70-77%	
$25,000-<$35,000	1,033	931	83%	78-88%		1,025	820	72%	66-77%	
$35,000-<$50,000	1,355	1,218	82%	77-86%		1,347	1,103	75%	71-80%	
$50,000-<$75,000	1,760	1,616	86%	83-89%		1,742	1,426	78%	75-82%	
$75,000 or greater	4,569	4,258	90%	89-92%		4,550	3,620	78%	76-80%	
Don't know/not sure	760	664	75%	69-81%		744	604	72%	65-78%	
Refused	1,027	959	87%	82-92%		1,019	880	84%	80-89%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

Chapter 5. Colorectal Cancer Screening

Cancer of the colon and rectum (referred to as colorectal cancer, or CRC) is the third most common cancer (excluding non-melanoma skin cancer) among men in Maryland, behind prostate and lung cancer, and the third most common cancer in women behind female breast and lung cancer. CRC was chosen in 2000 as one of the seven cancers targeted for intervention by the Cigarette Restitution Fund Program (CRFP) because of its incidence and mortality in Maryland and because CRC is amenable to prevention through screening and early detection. In 1999, Maryland had the 6th highest mortality rate from CRC among the 50 states and the District of Columbia. Due to concerted efforts by public health practitioners and health care providers in Maryland to increase screening, and because of improved treatments for CRC, mortality from CRC has dropped in Maryland; for the period 2006-2010, Maryland had the 22th highest mortality rate for CRC.[1] Even with this great improvement, in 2010, there were 2,289 newly diagnosed cases of CRC in Maryland. In that year, CRC was the second leading cause of cancer deaths among both men and women in Maryland, accounting for a total of 896 deaths statewide.[2]

The most commonly used screening tests for detecting pre-malignant lesions (i.e., benign adenomas) and invasive CRC are the fecal occult blood test (FOBT), the fecal immunochemical test (FIT), sigmoidoscopy, and colonoscopy (sigmoidoscopy and colonoscopy are both "lower gastrointestinal [GI] optical endoscopies"). The radiologic procedure, computerized tomography (CT) colonography or 'virtual colonoscopy' may be used as an alternative to optical colonoscopy for select patients. More recently, a DNA stool test has been developed that identifies abnormal genes in cancer cells shed in the stool.

Hidden (occult) blood in the stool is often an early warning sign of colorectal disease, including CRC. There are two types of home testing kits used to detect small amounts of blood in the stool. An earlier FOBT is a guaiac-based test that detects peroxidase activity found in hemoglobin. However, in addition to detecting human hemoglobin, the FOBT test can also detect animal hemoglobin in the stool (from consumption of red meat), which can potentially lead to false-positive results. A newer, more sensitive test for detecting blood in the stool is the FIT, which is specific for human hemoglobin. Health care providers (HCPs) may recommend either of these home tests to their patients for CRC screening. In the home tests, a person smears a small amount of stool on a card for 2 or 3 successive days, and mails the card to a laboratory for analysis.

Sigmoidoscopy and colonoscopy are tests in which the large bowel is examined with an endoscope, a narrow, lighted tube that is inserted in the rectum. During a sigmoidoscopy, only the lower third of the colon (closest to the rectum) is examined; during a colonoscopy, the entire colon is examined. These tests are generally referred to as "lower gastrointestinal (GI) endoscopy."

For people at average risk for developing CRC, the American Cancer Society (ACS) recommends one of the following screening modalities to find both cancer and pre-cancerous lesions:[3]

- Sigmoidoscopy every 5 years or
- Colonoscopy every 10 years or

- CT colonography (virtual colonoscopy) every 5 years
- Double contrast barium enema (DCBE) every 5 years

Tests that detect primarily cancerous lesions and need to be followed by a colonoscopy if the results are positive include:

- FOBT or FIT every year
- DNA stool test (interval uncertain)

Although the ACS recommendations include DCBE, CT colonography, and DNA stool test as screening options for CRC, these methods are not recommended by the United States Preventive Services Task Force (USPSTF) as first-line screening tests. These tests were not included in the BRFSS questionnaire.

CRC Screening with FOBT (Figure 5-1 and Table 5-1)

      According to the ACS, if the home FOBT is the primary test being used for CRC screening, the test should be performed each year. While 37% of Maryland adults age 50 years and older reported ever performing a home FOBT, only 12% have done the test in the past year.

      With regards to self-report of performing a home FOBT in the past year

- There was no significant difference between men (12%) and women (11%).
- Adults age 75 years and older (16%) and age 65-74 years (16%) were significantly more likely to have performed a home FOBT in the past year than those age 55-59 years (9%) and age 50-54 years (6%).
- Blacks (16%) were more likely to have had an FOBT in the past year than whites (10%).
- There was no significant difference by education level.

Figure 5-1. Percentage of Adults Age 50 Years and Older Who Had a Fecal Occult Blood Test (FOBT) Within the Past Year by Demographics Maryland, 2012
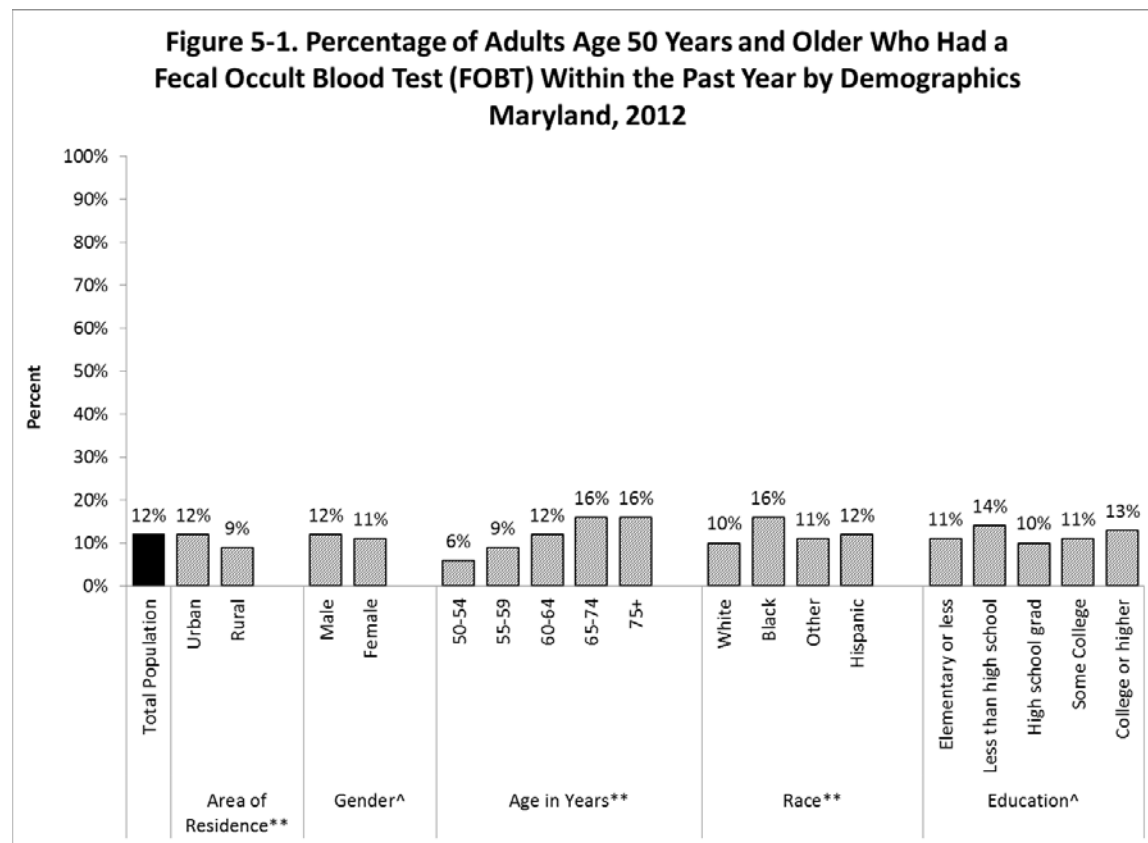
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

CRC Screening with Lower GI Endoscopy (Sigmoidoscopy or Colonoscopy) (Figure 5-2 and Table 5-2)

With regards to self-report of ever receiving a lower GI endoscopy among Maryland adults age 50 years and older

- Seventy-two percent (72%) reported that they have ever had a lower GI endoscopy.
- Adults age 50-54 years (52%) were least likely to report ever having a lower GI endoscopic examination. Adults age 65-69 years (86%) and 70-74 years (87%) reported the highest prevalence of endoscopic screening.
- A higher proportion of white men reported having an endoscopy compared to black men; there was no significant difference between white women (75%) and black women (76%).
- The proportion of adults reporting ever having a lower GI endoscopy was lowest among those who reported having an elementary education or less compared to those with some college or more.
- Of those reporting they had ever had lower GI endoscopy, the vast majority of people (over 98%) knew which test they had received most recently. Of those who could name their test, 5% reported their most recent exam was a sigmoidoscopy and 95% replied it was a colonoscopy. (Data not shown in tables.)

Figure 5-2. Percentage of Adults Age 50 Years and Older Who Have Ever Had a Sigmoidoscopy or Colonoscopy by Demographics Maryland, 2012
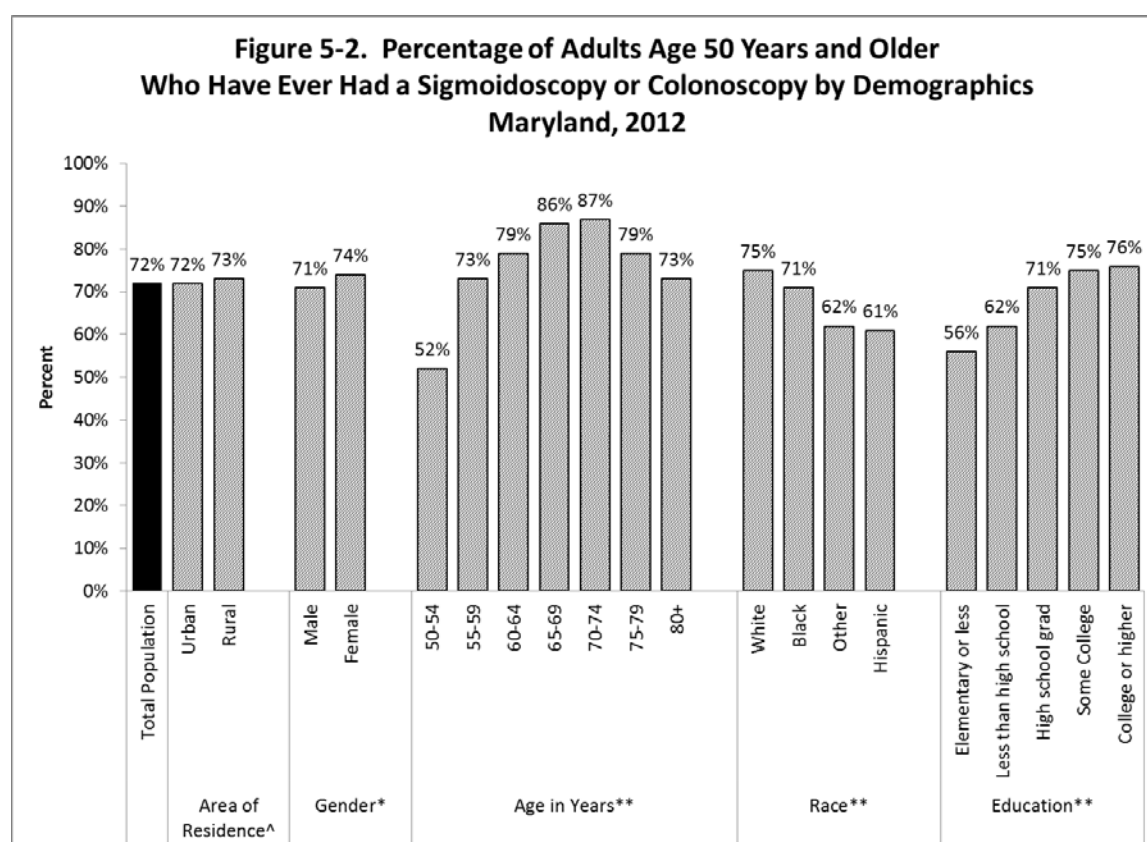
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Up-to-Date with CRC Screening Guidelines (Figures 5-3 and 5-4 and Table 5-2)

The following is a summary of CRC screening frequency reported in the BRFSS survey.

- Sixty-nine percent (69.1%) of Marylanders age 50 years and older reported being up-to-date with CRC screening by one or more of the recommended screening tests.
  - 2.6% were up-to-date with FOBT only;
  - 1.8% were up-to-date with sigmoidoscopy only;
  - 0.5% had an FOBT in the past year and a sigmoidoscopy in the past 5 years; and
  - 64.2% had a colonoscopy within the past 10 years (with or without ever having an FOBT).
- 23.5% of Marylanders age 50 years and older reported never being screened by FOBT, sigmoidoscopy, or colonoscopy.
- 7.4% have been tested with FOBT and/or sigmoidoscopy or colonoscopy, but are not up-to-date by ACS guidelines.

Figure 5-3. Summary of Up-To-Date (UTD)* Colorectal Cancer Screening Among Adults Age 50 Years and Older Maryland, 2012
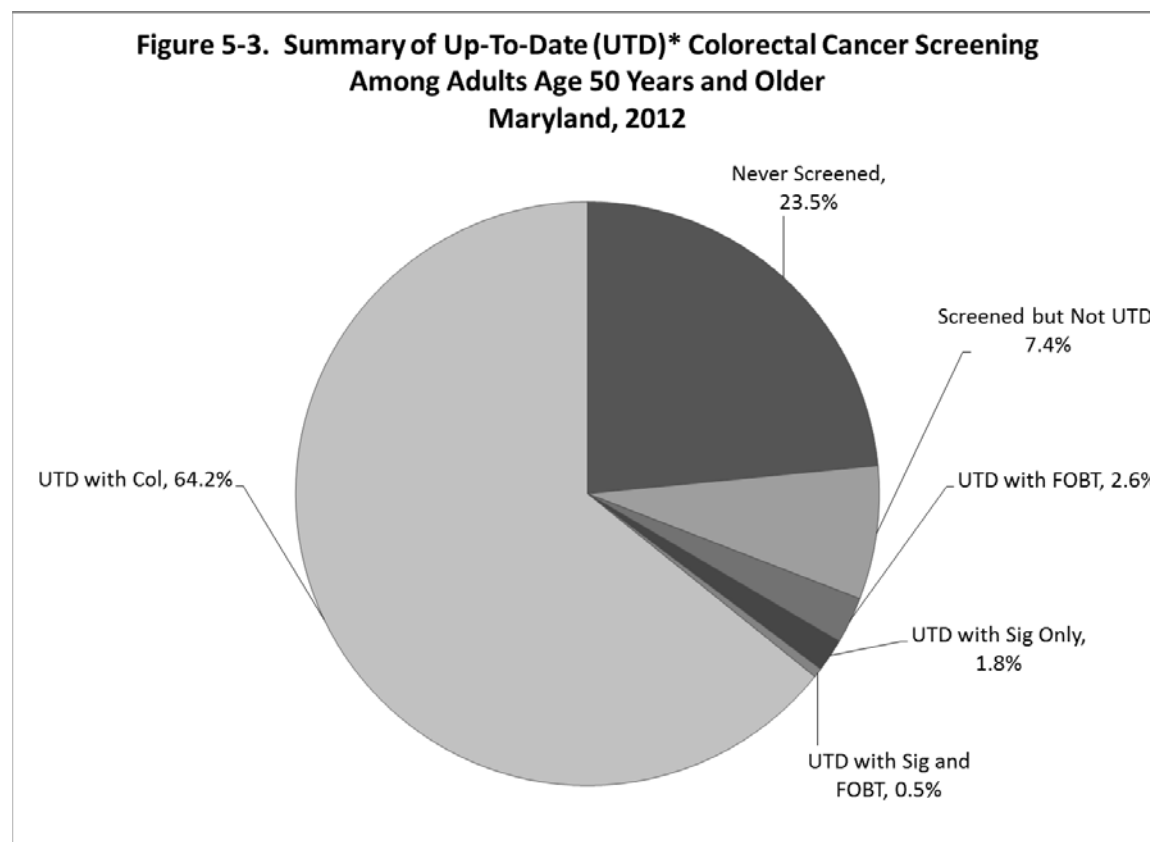
*UTD for CRC screening tests as defined by the ACS guidelines: colonoscopy within the past 10 years, sigmoidoscopy within the past 5 years, or FOBT with the past year.

With regards to being up-to-date with CRC screening by any method

- There was no significant difference by gender (68% for men and 70% for women).
- Prevalence was lowest for adults age 50-54 years (50%).
- There was no significant difference by race.
- The proportion of adults who were up-to-date was lowest among those who reported having an elementary education or less, compared to those with some college or more.

Figure 5-4. Percentage of Adults Age 50 Years and Older Up-To-Date with Colorectal Cancer Screening by Demographics Maryland, 2012
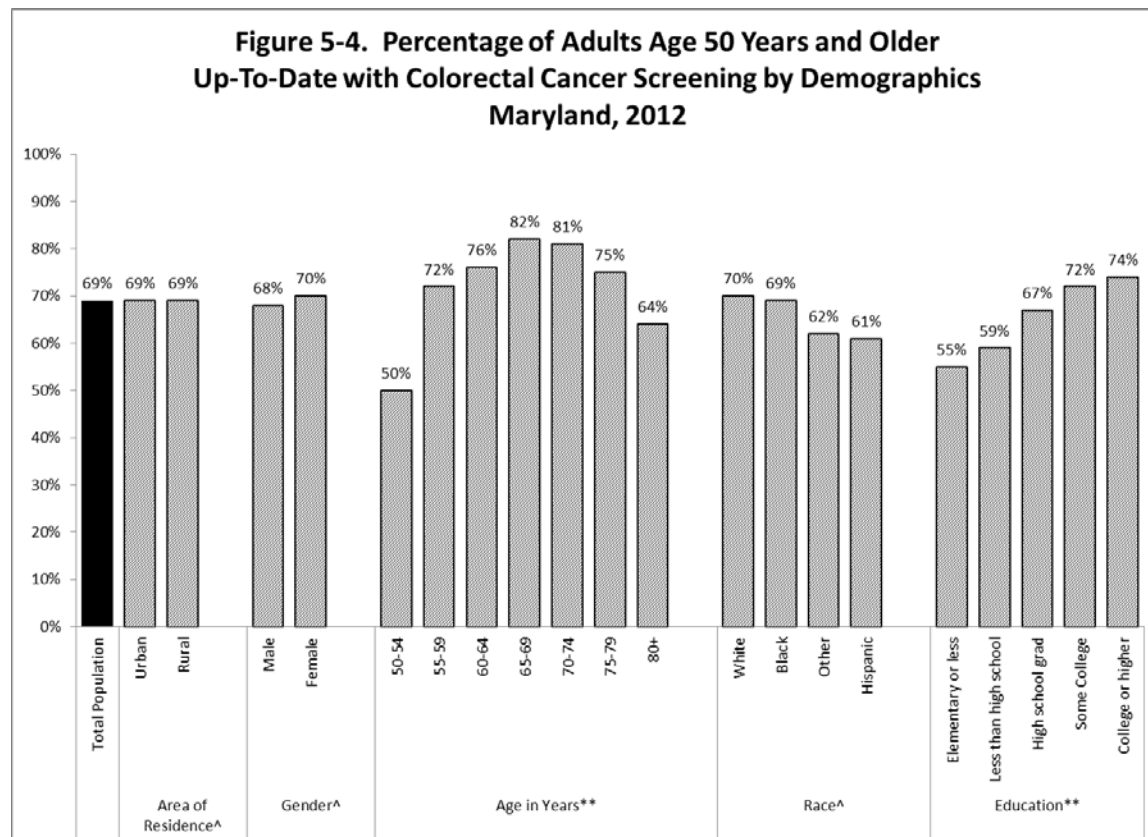
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Reasons for Not Being Up-to-Date with CRC Screening (Table 5-3)

Participants who were not up-to-date with any screening test or who had never been screened for CRC were asked the most important reason why they were not current with any kind of test to look for problems in their colon or rectum.

- 25% reported no reason or that they never thought about it.
- 15% reported their doctor didn't order it or didn't say they needed it.
- 13% reported they haven't had any problems.
- 13% reported they put it off or didn't get around to it.
- 9% reported they didn't need it or didn't know they needed this type of test.

- 7% reported the test was too expensive, they had no insurance, or it was because of cost.
- Far fewer respondents reported they don't have a doctor (2%) or that the test was painful, unpleasant, or embarrassing (3%).

Healthy People (HP) Objectives

The HP 2020 goal for CRC screening is to increase to 70.5% the proportion of adults age 50-75 years who have CRC screening based on recent guidelines.[4] According to the 2012 BRFSS, Maryland has come very close to achieving this goal with 69.6% of adults age 50-75 years reporting up-to-date CRC screening with colonoscopy within the past 10 years, sigmoidoscopy within the past 5 years and FOBT within the past year, sigmoidoscopy within the past 5 years, or FOBT within the past year.

Health Care Access and CRC Screening (Table 5-4 and Table 5-5)

For each screening test or combination of screening tests, adults with better access to health care measures had higher prevalence of reporting having the screening tests. Adults with health care coverage (insurance), those who reported no difficulty seeing a doctor in the past 12 months because of cost, those who have at least one person they think of as their personal health care provider, and those have seen a physician in the past year had significantly higher prevalence for each of the CRC screening measures examined.

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[1] Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Mortality - All COD, Aggregated With State, Total U.S. (1969-2008), National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released October 2011. Underlying mortality data provided by NCHS (www.cdc.gov/nchs). Last accessed November 13, 2013.

[2] Maryland Department of Health and Mental Hygiene. Cigarette Restitution Fund Program Cancer Data 2013. Baltimore, MD; November 2013. Available at http://phpa.dhmh.maryland.gov/cancer/SiteAssets/SitePages/surv_data-reports/2012%20CRF%20Cancer%20Report.pdf.

[3] American Cancer Society, Cancer Detection Guidelines. Available at http://www.cancer.org/docroot/PED/content/PED_2_3X_ACS_Cancer_Detection_Guidelines_36.asp?sitearea=PED. Last accessed November 8, 2013.

[4] U.S. Department of Health and Human Services. Healthy People 2020. Topics & Objectives. Cancer. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=5. Last accessed November 8, 2013.

TABLE 5-1. SELF-REPORTED COLORECTAL CANCER SCREENING WITH HOME FECAL OCCULT BLOOD TEST (FOBT) BY DEMOGRAPHIC CHARACTERISTICS, AMONG ADULTS AGE 50 YEARS AND OLDER

Selected Characteristic	Ever Had an FOBT					Had an FOBT Within the Past Year				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Total Population	8,040	3,321	37%	36-39%		8,040	953	12%	11-13%	
Area of Residence					**					**
Urban	4,233	1,784	38%	36-40%		4,233	535	12%	11-14%	
Rural	3,807	1,537	34%	32-37%		3,807	418	9%	8-11%	
Gender					^					^
Male	3,015	1,236	37%	34-39%		3,015	378	12%	10-14%	
Female	5,025	2,085	38%	36-40%		5,025	575	11%	10-12%	
Age in Years					**					**
50-54	1,335	311	22%	19-25%		1,335	94	6%	5-8%	
55-59	1,332	427	32%	28-35%		1,332	114	9%	7-11%	
60-64	1,396	565	40%	36-43%		1,396	163	12%	10-15%	
65-74	2,243	1,108	46%	43-50%		2,243	322	16%	13-18%	
75 and older	1,734	910	52%	48-55%		1,734	260	16%	13-19%	
Race					**					**
White	6,167	2,581	38%	36-40%		6,167	681	10%	9-11%	
Black	1,348	553	39%	35-42%		1,348	204	16%	13-18%	
Other	291	100	35%	26-44%		291	38	11%	6-17%	
Hispanic	117	35	20%	11-28%		117	17	12%	5-19%	
Gender and Race					**					**
White male	2,374	980	37%	34-39%		2,374	275	10%	9-12%	
Black male	411	168	39%	33-45%		411	72	18%	13-24%	
Other male	126	43	36%	22-49%		126	20	15%	6-24%	
Hispanic male	40	14	20%	6-34%		40	7	11%	1-21%	
White female	3,793	1,601	39%	37-41%		3,793	406	10%	9-12%	
Black female	937	385	39%	34-43%		937	132	13%	11-16%	
Other female	165	57	35%	23-47%		165	18	8%	3-12%	
Hispanic female	77	21	19%	8-30%		77	10	12%	2-22%	
Education					**					^
Elementary or less	173	60	26%	16-35%		173	17	11%	3-19%	
Some high school	466	174	34%	27-40%		466	58	14%	9-19%	
High school grad or GED	2,275	878	33%	30-36%		2,275	255	10%	9-12%	
College 1-3 years	1,900	748	37%	34-40%		1,900	204	11%	9-13%	
College grad or higher	3,211	1,456	43%	41-46%		3,211	419	13%	11-14%	

N = Number of people in the sample who responded to the survey question

n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05

*   0.05 $\leq$ p-value < 0.10

^   p-value $\geq$ 0.10

TABLE 5-2. SELF-REPORTED COLORECTAL CANCER SCREENING WITH COLONOSCOPY OR SIGMOIDOSCOPY AND BEING UP-TO-DATE WITH COLORECTAL CANCER SCREENING, AMONG ADULTS AGE 50 YEARS AND OLDER

Selected Characteristic	Ever Had a Sigmoidoscopy or Colonoscopy					Up-to-Date CRC Screening with FOBT in the Past Year, Sigmoidoscopy in the Past 5 Years, FOBT in the Past Year and Sigmoidoscopy in the Past 5 Years, or Colonoscopy in the Past 10 Years				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Total Population	8,063	6,143	72%	71-74%		8,109	5,842	69%	67-71%	
Area of Residence					^					^
Urban	4,246	3,238	72%	70-74%		4,274	3,076	69%	67-71%	
Rural	3,817	2,905	73%	71-76%		3,835	2,766	69%	67-72%	
Gender					*					^
Male	3,024	2,318	71%	68-74%		3,039	2,200	68%	65-70%	
Female	5,039	3,825	74%	72-76%		5,070	3,642	70%	68-72%	
Age in Years					**					**
50-54	1,336	734	52%	48-56%		1,342	717	50%	46-54%	
55-59	1,339	1,011	73%	70-77%		1,346	981	72%	68-75%	
60-64	1,402	1,132	79%	75-82%		1,407	1,092	76%	73-80%	
65-69	1,295	1,100	86%	83-88%		1,299	1,051	82%	79-85%	
70-74	951	812	87%	84-91%		959	769	81%	77-85%	
75-79	744	605	79%	74-84%		747	573	75%	70-80%	
80 and older	996	749	73%	68-77%		1,009	659	64%	59-68%	
Race					**					^
White	6,179	4,755	75%	73-76%		6,214	4,488	70%	69-72%	
Black	1,353	1,022	71%	67-75%		1,362	993	69%	65-73%	
Other	295	198	62%	53-71%		295	194	62%	54-71%	
Hispanic	121	85	61%	47-75%		121	87	61%	47-75%	
Gender and Race					**					*
White male	2,378	1,864	75%	72-77%		2,389	1,755	70%	67-73%	
Black male	412	292	65%	58-72%		415	286	64%	57-70%	
Other male	130	83	64%	51-77%		130	85	65%	52-78%	
Hispanic male	41	29	55%	32-79%		41	27	53%	30-76%	
White female	3,801	2,891	75%	73-77%		3,825	2,733	71%	68-73%	
Black female	941	730	76%	72-79%		947	707	73%	69-77%	
Other female	165	115	61%	49-72%		165	109	60%	48-71%	
Hispanic female	80	56	66%	50-82%		80	60	68%	51-84%	
Education					**					**
Elementary or less	170	100	56%	44-68%		174	100	55%	43-67%	
Some high school	465	305	62%	55-69%		470	284	59%	51-66%	
High school grad or GED	2,272	1,652	71%	68-74%		2,291	1,565	67%	64-70%	
College 1-3 years	1,906	1,475	75%	72-78%		1,915	1,402	72%	68-75%	
College grad or higher	3,234	2,597	76%	74-79%		3,243	2,479	74%	71-76%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

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TABLE 5-3. REASONS FOR NOT BEING UP-TO-DATE WITH ANY KIND OF COLORECTAL CANCER SCREENING TEST, AMONG ADULTS AGE 50 YEARS AND OLDER

	n	wt %
No reason/never thought about it	263	25%
Didn't need it/didn't know I needed this type of test	102	9%
Doctor didn't order it/didn't say I needed it	135	15%
Haven't had any problems	140	13%
Put it off/didn't get around to it	134	13%
Too expensive/no insurance/cost	71	7%
Too painful, unpleasant, or embarrassing	37	3%
Had another type of colorectal exam	12	2%
Don't have doctor	20	2%
Other	98	11%

TABLE 5-4. SELF-REPORTED HOME FECAL OCCULT BLOOD TEST (FOBT) BY HEALTH CARE ACCESS, AMONG ADULTS AGE 50 YEARS AND OLDER

Selected Characteristic	Ever Had an FOBT					Had an FOBT Within the Past Year				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Has any kind of health care coverage					**					**
Yes	7,594	3,220	39%	37-40%		7,594	921	12%	11-13%	
No	438	98	19%	13-25%		438	32	6%	3-9%	
Could not see doctor in the past 12 months because of cost					**					**
Yes	555	161	24%	19-29%		555	56	7%	4-10%	
No	7,465	3,150	38%	37-40%		7,465	893	12%	11-13%	
Has at least one person you think of as your personal doctor or health care provider					**					**
Yes	7,569	3,214	39%	37-40%		7,569	926	12%	11-13%	
No	460	105	18%	13-23%		460	27	3%	1-5%	
Time since a doctor was last visited for a routine checkup					**					**
Within the past year (less than 1 year)	6,794	2,979	40%	38-41%		6,794	920	13%	12-15%	
Within the past 2 years but more than 1 year	623	203	30%	24-35%		623	23	3%	1-4%	
Within the past 5 years but more than 2 years	262	72	22%	16-29%		262	5	1%	0-2%	
5 years or more (including never)	276	46	16%	10-22%		276	2	1%	0-3%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

TABLE 5-5. SELF-REPORTED COLORECTAL CANCER SCREENING MEASURES BY HEALTH CARE ACCESS, AMONG ADULTS AGE 50 YEARS AND OLDER

Selected Characteristic	Ever Had a Sigmoidoscopy or Colonoscopy					Up-to-Date CRC Screening with FOBT in the Past Year, Sigmoidoscopy in the Past 5 Years, FOBT in the Past Year and Sigmoidoscopy in the Past 5 Years, or Colonoscopy in the Past 10 Years				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Has any kind of health care coverage					**					**
Yes	7,618	5,921	75%	73-76%		7,660	5,627	71%	70-73%	
No	437	215	43%	35-51%		441	208	40%	33-48%	
Could not see doctor in the last 12 months because of cost					**					**
Yes	556	340	57%	50-64%		562	316	51%	45-58%	
No	7,488	5,790	74%	72-75%		7,527	5,515	71%	69-72%	
Has at least one person you think of as your personal doctor or health care provider					**					**
Yes	7,590	5,922	75%	74-77%		7,635	5,641	72%	70-73%	
No	462	211	35%	28-42%		463	193	31%	24-38%	
Time since a doctor was last visited for a routine checkup					**					**
Within the past year (less than 1 year)	6,809	5,421	76%	74-78%		6,850	5,192	73%	71-75%	
Within the past 2 years but more than 1 year	626	423	62%	56-68%		632	394	58%	52-64%	
Within the past 5 years but more than 2 years	265	137	46%	36-55%		265	125	42%	34-51%	
5 years or more (including never)	276	110	37%	28-46%		276	90	29%	21-37%	

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

Chapter 6. Prostate Cancer Screening

Cancer of the prostate is the most common cancer (excluding non-melanoma skin cancer) among men in Maryland, accounting for 4,111 cases in 2010. It is the second leading cause of statewide cancer deaths among men after lung cancer. In 2010, there were 507 deaths from prostate cancer reported in Maryland.[1] Maryland had the 13th highest mortality rate for prostate cancer among the 50 states and the District of Columbia for the period 2006-2010.

Use of serum prostate-specific antigen (PSA), a blood test to screen for prostate cancer, has been a controversial issue for many years. While, in the past, some organizations recommended prostate cancer screening, the United States Preventive Services Task Force (USPSTF) said there is insufficient evidence to assess the balance of harms and benefits of routine screening for prostate cancer in men younger than age 75 years. Then in May, 2012, the USPSTF reviewed the issue again and recommended *against* PSA-based screening for prostate cancer, citing that the harms of screening outweighed the benefits.[2]

Other professional organizations have updated their screening recommendations to include a discussion with the patient of the risks and harms of prostate cancer screening with PSA.
- American Cancer Society[3,4]
    - Men should make an informed decision about prostate cancer screening in conjunction with their doctor. Research has not shown that potential benefits of screening outweigh the harms of testing and treatment.
        - Start the discussion about screening at age 50 years if at average risk and are expected to live at least 10 more years
        - Start discussion at age 45 years if at high risk (including African American men, OR men who have a first-degree relative (father, brother, or son) diagnosed with prostate cancer at an early age (younger than age 65 years)
        - Start the discussion at age 40 years if at extremely high risk (men with more than one first-degree relative who had prostate cancer younger than age 65 years)
    - If men decide to be tested, they should have the PSA blood test with or without a rectal exam. Repeat testing will depend on the PSA level.
- American Urological Association[5]
    - No PSA screening for men under age 40 years
    - No routine screening in men between ages 40 to 54 years at average risk
    - Before screening for prostate cancer with PSA, men ages 55 to 69 years should engage in shared decision making with their health care providers, which involves "weighing the benefits of preventing prostate cancer mortality in 1 man for every 1,000 men screened over a decade against the known potential harms associated with screening and treatment"
    - Routine screening interval: No more than every 2 years (instead of annual screening) to preserve the benefits and reduce over diagnosis and false positives
    - Routine PSA screening is not recommended in men over age 70 years or in men with less than a 10-15 year life expectancy

In light of the revised recommendations on prostate cancer screening, the BRFSS has included additional questions about discussions between men and their health care providers on the risks and benefits of prostate cancer screening, recommendations on screening, and informed decision

making. As in past BRFSS surveys, questions on whether men have received a prostate cancer screening test with PSA were also asked. All of these questions were asked of men age 40 years and older.

Discussions with Health Care Professionals About Advantages and Disadvantages of PSA Testing (Figures 6-1 and 6-2 and Table 6-1)

- Sixty-two percent (62%) of men age 40 years and older reported having ever discussed advantages of PSA testing with a health care provider; only 30% reported ever having discussed disadvantages.
- Older age was generally associated with increased prevalence of discussion of both advantages and disadvantages of PSA testing.
  - Men age 55 years and older had the highest prevalence of discussion of advantages of PSA testing compared to men age 54 years and younger.
  - Men age 55 years and older had the highest prevalence of discussion of disadvantages of PSA testing compared to men age 49 years and younger.
- Blacks were more likely to report discussion of advantages of PSA testing (66%) compared to Hispanics (32%).
- Blacks were more likely to report discussion of disadvantages of PSA testing (36%) compared to whites (27%) and Hispanics (17%).
- Men with a college degree or higher and men with some college were more likely to report a discussion of advantages of PSA testing (68% and 66%, respectively) compared to men with some high school (45%). There was no significant difference in discussion of disadvantages of PSA testing by education level.
- There was no significant difference in the prevalence of discussed advantages or disadvantages of PSA testing by area of residence.

Figure 6-1. Percentage of Men Age 40 Years and Older Who Have Ever Discussed the Advantages of PSA Testing by Demographics Maryland, 2012
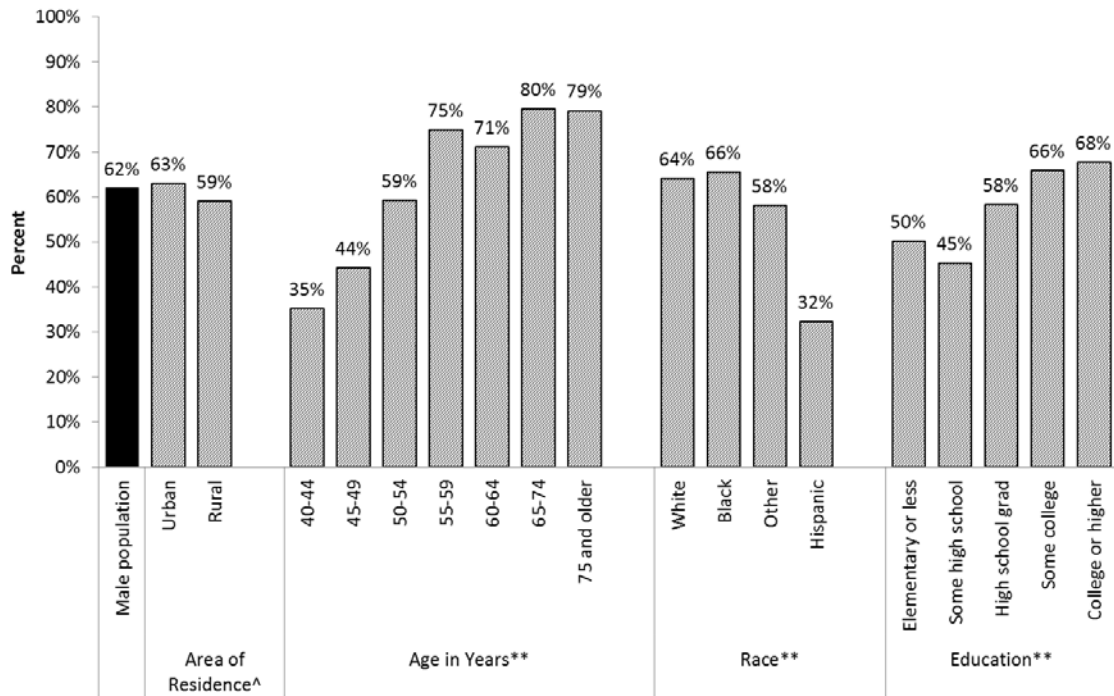
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Figure 6-2. Percentage of Men Age 40 Years and Older Who Have Ever Discussed the Disadvantages of PSA Testing by Demographics Maryland, 2012

** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Receiving a Recommendation for PSA Testing From a Health Care Professional (Figure 6-3 and Table 6-2)

- Fifty-six percent (56%) of men ever received a recommendation to have a PSA test.
- There was no statistically significant difference between urban and rural residents with regard to the recommendation for PSA testing.
- Men age 55-59 years and older reported higher prevalence of recommendations compared to men age 50-54 years and younger.
- A higher proportion of white men (59%) and black men (56%) reported ever receiving a recommendation to have PSA testing compared to Hispanic men (26%).
- A higher proportion of men reporting a college degree or higher (62%) reported receiving recommendation to have PSA testing compared to men with a high school degree or less.

Figure 6-3. Percentage of Men Age 40 Years and Older Who Have Ever Received a Recommendation to Have a PSA Test by Demographics Maryland, 2012
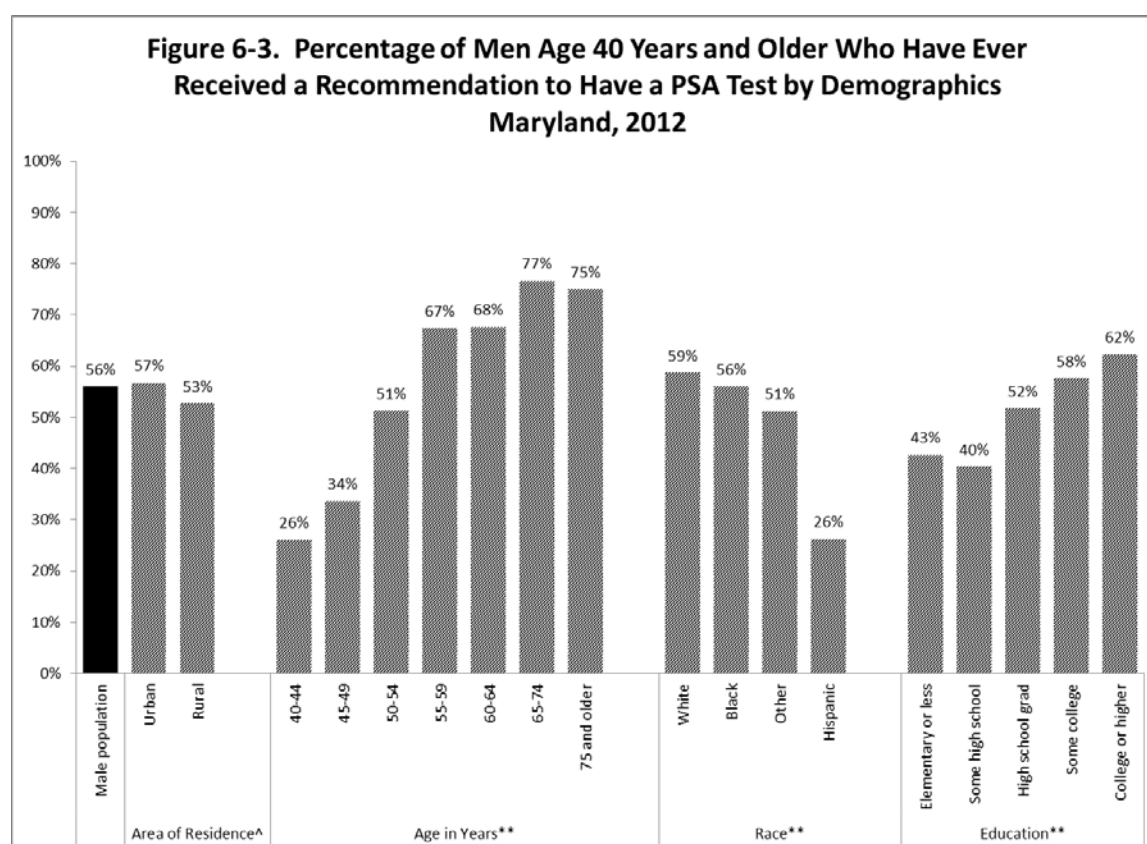
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

Prostate Cancer Screening with PSA Test (Figure 6-4 and Table 6-3)

- Fifty-eight percent (58%) of men over age 40 years have *ever* had a PSA test.
- The prevalence of ever having a PSA test did not differ significantly by area of residence or by race.
- As age increased, the proportion of men reporting to have ever had a PSA test generally increased.
    - Men age 65-74 years and age 75 years and older reported the highest prevalence of ever having a PSA test, 83% and 87% respectively.

Figure 6-4. Percentage of Men Age 40 Years and Older Who Have Ever Had a PSA Test by Demographics Maryland, 2012
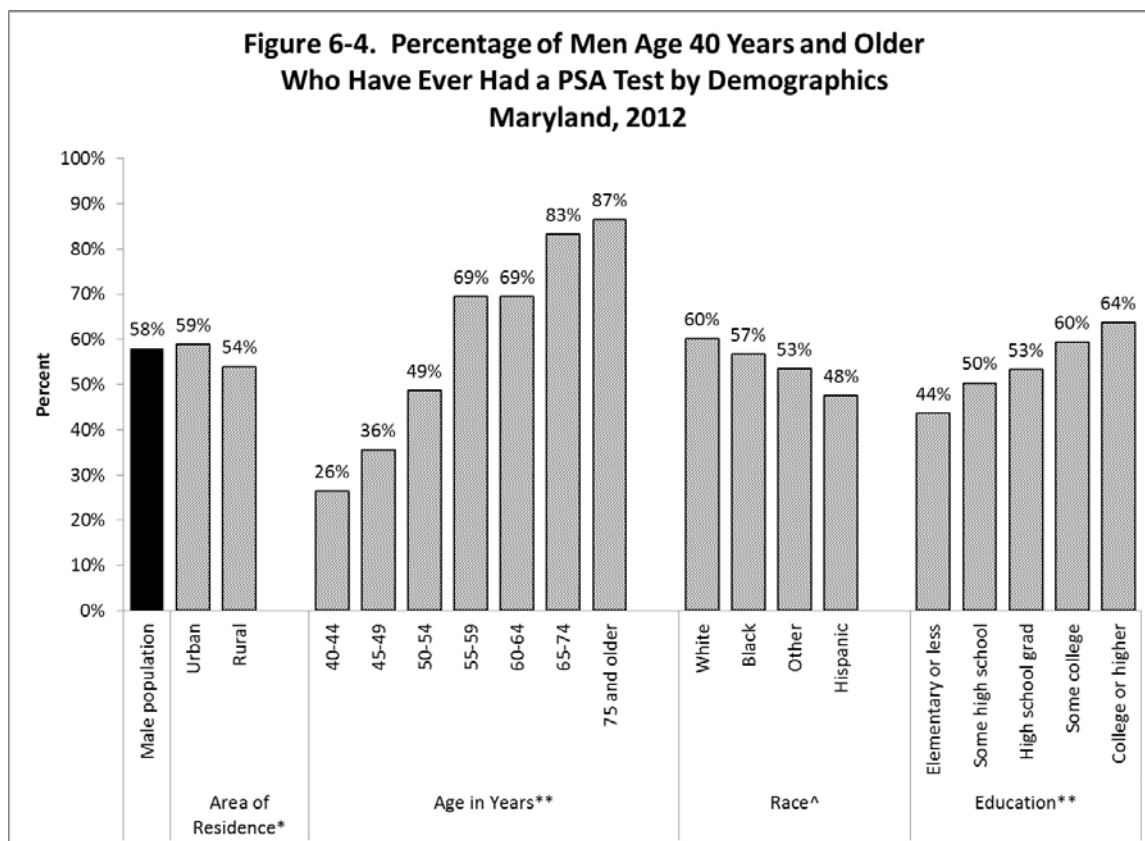
** p-value < 0.05
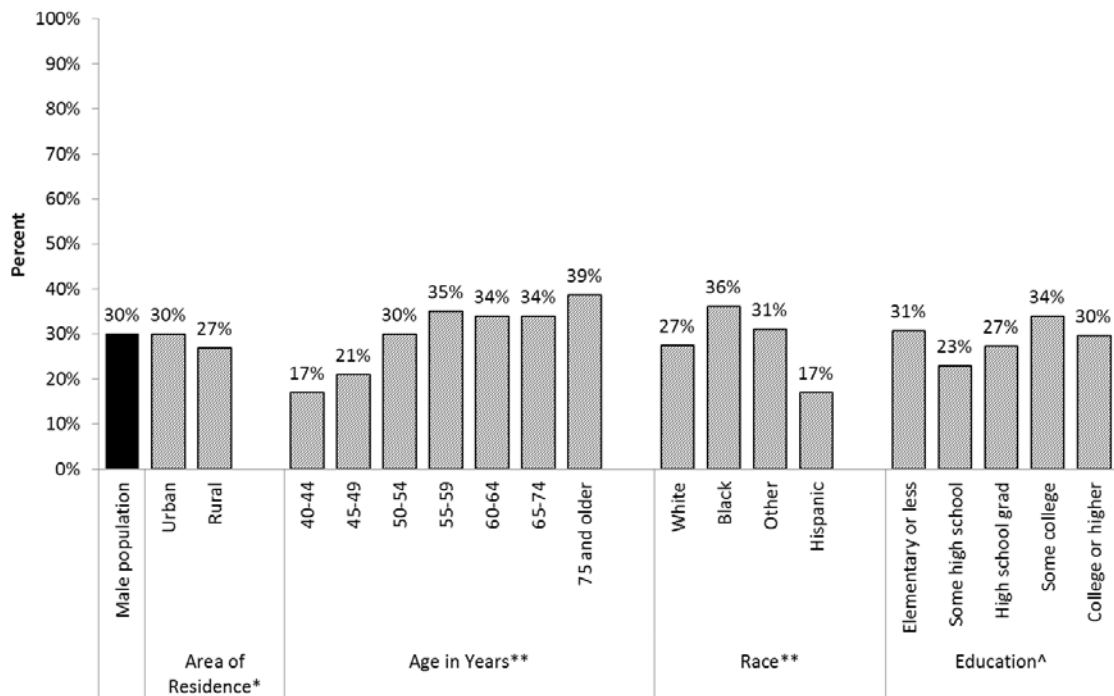*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Prostate Cancer Screening with a PSA Test Within the Past Year (Figure 6-5 and Table 6-3)

- Thirty-eight percent (38%) of men, age 40 years and older without a history of prostate cancer or prostate problems, reported having a PSA test within the past year.
- Having a PSA test in the past year did not differ significantly by area of residence.
- The prevalence of PSA testing within the preceding year was statistically significantly different across age groups. Men age 60 years and older reported a higher prevalence of PSA testing in the past year compared to men age 50-54 years and younger.

Figure 6-5. Percentage of Men Age 40 Years and Older~ Who Had a PSA Test Within the Past Year by Demographics Maryland, 2012
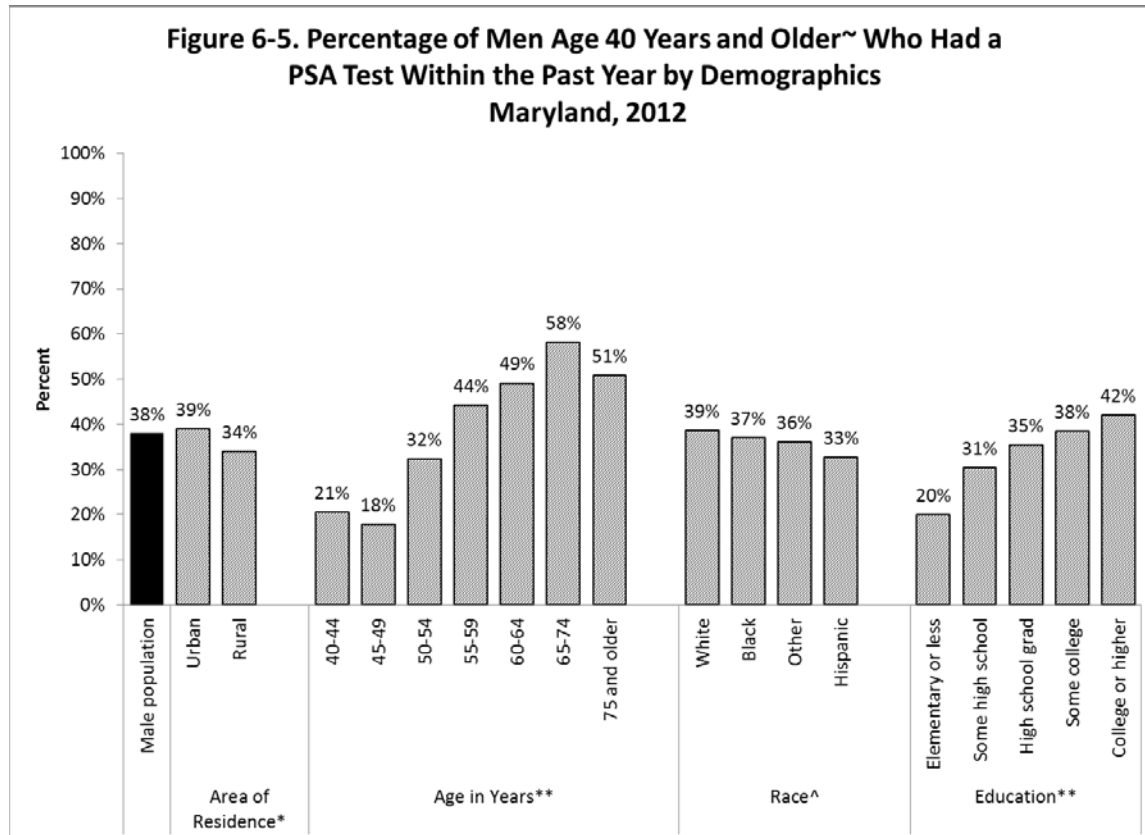
** p-value < 0.05

*   0.05 ≤ p-value < 0.1

^   p-value ≥ 0.1

Health Care Access and Prostate Cancer Screening (Table 6-4)

Each measure of access to health care was significantly associated with ever having a PSA test and having a PSA test in the past year. Men who had health insurance, reported no cost restrictions in seeing a doctor in the past 12 months, and had at least one person he thought of as his personal doctor or health care provider had significantly higher prevalence of PSA testing. As time increased since the last doctor's visit for a routine check-up, the proportion of men reporting PSA testing generally decreased.

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[1] Maryland Department of Health and Mental Hygiene. Cigarette Restitution Fund Program Cancer Data 2013. Baltimore, MD; November 2013. Available at http://phpa.dhmh.maryland.gov/cancer/SitePages/surv_data-reports.aspx.

[2] U.S. Preventive Services Task Force. Screening for Prostate Cancer. May 2012. http://www.uspreventiveservicestaskforce.org/prostatecancerscreening.htm. Last accessed November 13, 2013.

[3] American Cancer Society Guidelines for the Early Detection of Cancer, Topic Page. American Cancer Society. Available at http://www.cancer.org/healthy/findcancerearly/cancerscreeningguidelines/american-cancer-society-guidelines-for-the-early-detection-of-cancer. Last accessed October 3, 2013.

[4] American Cancer Society recommendations for prostate cancer early detection, Topic Page. American Cancer Society. Available at http://www.cancer.org/cancer/prostatecancer/moreinformation/prostatecancerearlydetection/prostate-cancer-early-detection-acs-recommendations. Last accessed October 3, 2013.

[5] AUA RELEASES NEW CLINICAL GUIDELINE ON PROSTATE CANCER SCREENING: Men ages 55 to 69 urged to talk with their doctors about benefits, harms of testing. Available at http://www.auanet.org/advnews/press_releases/article.cfm?articleNo=290. Last accessed October 3, 2013.

TABLE 6-1. PERCENT OF MEN WHO REPORTED HAVING A DISCUSSION WITH A HEALTH CARE PROVIDER ABOUT THE ADVANTAGES AND DISADVANTAGES OF PSA TESTING BY DEMOGRAPHIC CHARACTERISTICS, AMONG MEN 40 YEARS AND OLDER

Selected Characteristic	Ever Discussed Advantages of PSA					Ever Discussed Disadvantages of PSA				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Male Population	3,738	2,592	62%	60-65%		3,685	1,155	30%	27-32%	
Area of Residence					^					*
Urban	1,977	1,366	63%	60-66%		1,950	621	30%	28-33%	
Rural	1,761	1,226	59%	55-63%		1,735	534	27%	23-30%	
Age in Years					**					**
40-44	359	128	35%	28-43%		354	64	17%	11-23%	
45-49	431	193	44%	38-51%		430	95	21%	16-26%	
50-54	501	320	59%	53-66%		498	161	30%	24-36%	
55-59	480	364	75%	69-81%		463	157	35%	29-42%	
60-64	556	430	71%	65-78%		539	188	34%	28-40%	
65-74	866	718	80%	75-85%		855	296	34%	29-39%	
75 and older	545	439	79%	74-84%		546	194	39%	32-45%	
Race					**					**
White	2,883	2,025	64%	61-67%		2,842	839	27%	25-30%	
Black	553	382	66%	60-71%		543	217	36%	31-42%	
Other	161	107	58%	45-71%		159	58	31%	21-42%	
Hispanic	67	34	32%	18-47%		66	18	17%	5-29%	
Education					**					^
Elementary or less	79	45	50%	34-67%		73	19	31%	15-46%	
Some high school	170	98	45%	34-57%		169	52	23%	14-32%	
High school grad or GED	895	558	58%	53-63%		890	250	27%	23-32%	
College 1-3 years	787	556	66%	61-71%		777	251	34%	29-39%	
College grad or higher	1,799	1,329	68%	64-71%		1,768	578	30%	27-32%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
*   0.05 < p-value < 0.10
^   p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

TABLE 6-2. PERCENT OF MEN WHO REPORTED RECEIVING A RECOMMENDATION FOR PSA FROM A HEALTH CARE PROVIDER BY DEMOGRAPHIC CHARACTERISTICS, AMONG MEN 40 YEARS AND OLDER

Selected Characteristic	Received a Recommendation For PSA				
	N	n	wt %	95% CI	Stat Sig
Male Population	3,649	2,303	56%	53-58%	
Area of Residence					^
Urban	1,938	1,247	57%	54-60%	
Rural	1,711	1,056	53%	49-57%	
Age in Years					**
40-44	349	91	26%	19-33%	
45-49	419	142	34%	27-40%	
50-54	491	279	51%	45-58%	
55-59	472	325	67%	61-74%	
60-64	533	397	68%	61-74%	
65-74	841	664	77%	72-82%	
75 and older	544	405	75%	70-80%	
Race					**
White	2,815	1,809	59%	56-61%	
Black	539	336	56%	50-62%	
Other	158	91	51%	39-64%	
Hispanic	64	25	26%	12-41%	
Education					**
Elementary or less	72	37	43%	26-59%	
Some high school	171	84	40%	29-51%	
High school grad or GED	869	491	52%	47-57%	
College 1-3 years	768	489	58%	52-63%	
College grad or higher	1,762	1,198	62%	59-66%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
*   0.05 < p-value < 0.10
^   p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

TABLE 6-3. SELF-REPORTED PROSTATE CANCER SCREENING WITH THE PSA TEST BY DEMOGRAPHIC CHARACTERISTICS, AMONG MEN AGE 40 YEARS AND OLDER

Selected Characteristic	Ever Had a PSA					Had a PSA Within the Past Year~				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Male Population	3,618	2,407	58%	56-61%		3,363	1,432	38%	35-40%	
Area of Residence					*					*
Urban	1,927	1,291	59%	56-63%		1,793	772	39%	36-42%	
Rural	1,691	1,116	54%	50-59%		1,570	660	34%	31-38%	
Age in Years					**					**
40-44	352	88	26%	19-33%		351	55	21%	14-27%	
45-49	413	148	36%	29-42%		401	70	18%	13-23%	
50-54	482	256	49%	42-55%		470	163	32%	26-39%	
55-59	464	335	69%	63-76%		448	208	44%	37-51%	
60-64	533	406	69%	63-76%		503	259	49%	43-56%	
65-74	841	715	83%	79-88%		746	456	58%	52-64%	
75 and older	533	459	87%	83-91%		444	221	51%	44-58%	
Race					^					^
White	2,794	1,899	60%	58-63%		2,590	1,123	39%	36-41%	
Black	534	335	57%	51-63%		501	204	37%	31-43%	
Other	155	94	53%	41-66%		144	58	36%	24-48%	
Hispanic	64	33	48%	30-65%		61	18	33%	15-50%	
Education					**					**
Elementary or less	69	39	44%	27-61%		61	15	20%	6-34%	
Some high school	165	89	50%	39-62%		149	45	31%	19-42%	
High school grad or GED	857	510	53%	48-59%		809	310	35%	31-40%	
College 1-3 years	761	512	60%	54-65%		710	304	38%	33-44%	
College grad or higher	1,759	1,252	64%	60-67%		1,628	756	42%	39-46%	

N = Number of people in the sample who responded to the survey question

n = Number of people answering "yes" to that question or who had that characteristic

~ Among men who had their last PSA as part of a routine exam, because of a family history of prostate cancer, or some other reason (but not because of a prostate problem or prostate cancer)

** p-value < 0.05

* 0.05 < p-value < 0.10

^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

TABLE 6-4. SELF-REPORTED PROSTATE CANCER SCREENING WITH THE PSA TEST BY BY HEALTH CARE ACCESS, AMONG MEN AGE 40 YEARS AND OLDER

Selected Characteristic	Ever Had a PSA					Had a PSA Within the Past Year~				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Has any kind of health care coverage					**					**
Yes	3,391	2,326	62%	59-64%		3,141	1,394	41%	38-43%	
No	224	80	26%	17-35%		219	38	11%	4-17%	
Could not see doctor in the past 12 months because of cost					**					**
Yes	230	104	32%	24-41%		213	48	14%	9-20%	
No	3,383	2,300	61%	58-63%		3,145	1,381	40%	37-43%	
Has at least one person you think of as your personal doctor or health care provider					**					**
Yes	3,282	2,297	63%	60-65%		3,038	1,386	41%	38-44%	
No	331	108	28%	19-36%		320	44	17%	9-25%	
Time since a doctor was last visited for a routine checkup					**					**
Within the past year (less than 1 year)	2,901	2,078	64%	61-67%		2,672	1,336	46%	43-49%	
Within the past 2 years but more than 1 year	356	186	43%	35-51%		349	53	11%	7-15%	
Within the past 5 years but more than 2 years	169	74	32%	21-42%		162	18	7%	3-10%	
5 years or more (including never)	162	53	20%	12-28%		152	20	7%	3-10%	

N = Number of people in the sample who responded to the survey question

n = Number of people answering "yes" to that question or who had that characteristic

~ Among men who had their last PSA as part of a routine exam, because of a family history of prostate cancer, or some other reason (but not because of a prostate problem or prostate cancer)

** p-value < 0.05

* 0.05 < p-value < 0.10

^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

Chapter 7. Women's Health: Breast and Cervical Cancer Screening

Female breast cancer is the most common reportable cancer and the second leading cause of cancer deaths (after lung cancer) among Maryland women. In 2010, breast cancer accounted for 4,390 newly diagnosed cases and 839 deaths among Maryland women. [1] Among the 50 states and the District of Columbia, Maryland women ranked 6th highest in breast cancer mortality rate for the period 2006-2010, down from 5th highest for 2004-2008.[2]

In 2010, there were 232 new cases and 64 deaths from cervical cancer in Maryland.[1] During the period 2006-2010, Maryland ranked 25th highest in mortality rate for cervical cancer among the 50 states and the District of Columbia.[2] Cervical cancer incidence and mortality rates in Maryland, as a whole, are higher among black women than white women.[1]

7.1 Breast Cancer Screening

Depending on a woman's age, mammography and clinical breast exam (CBE) are the two procedures recommended for breast cancer screening by the American Cancer Society (ACS).[3] As of December 2009, the United States Preventive Services Task Force (USPSTF) recommends screening mammography every 2 years for women age 50-74 years, which raised the previously recommended age to begin screening at age 40 years.[4] The USPSTF also reports that the current evidence is insufficient to assess the additional benefits and harms of CBE beyond screening mammography in women age 40 years or older. However, the ACS guidelines have not been modified, which recommend that women begin having a yearly mammogram and a CBE at age 40 years, and women between the ages of 20 and 39 years undergo a CBE every 3 years.[5] In 2007, the ACS began recommending that women at increased risk for breast cancer (based on specific criteria related to family history, genetic tendency, and clinical history) undergo additional breast screening with magnetic resonance imaging (MRI) as an adjunct to mammography.[6]

Breast Cancer Screening with Mammography (Figure 7-1 and Table 7-1)

Among Maryland women age 40 years and older,

- Ninety-three percent (93%) reported having ever had a mammogram.
- Although overall prevalence of breast cancer screening is high, the proportion of women ever having a mammogram was statistically significantly lower among those age 40-44 years compared to women age 50 years and older.
- Reporting to have ever had a mammogram was lowest among Hispanic women (80%) compared to white women (94%). Black women (93%) and women of other race (89%) were not statistically different from white women. No significant differences were noted by level of education.

Figure 7-1. Percentage of Women Age 40 Years and Older Who Have Ever Had a Mammogram by Demographics Maryland, 2012
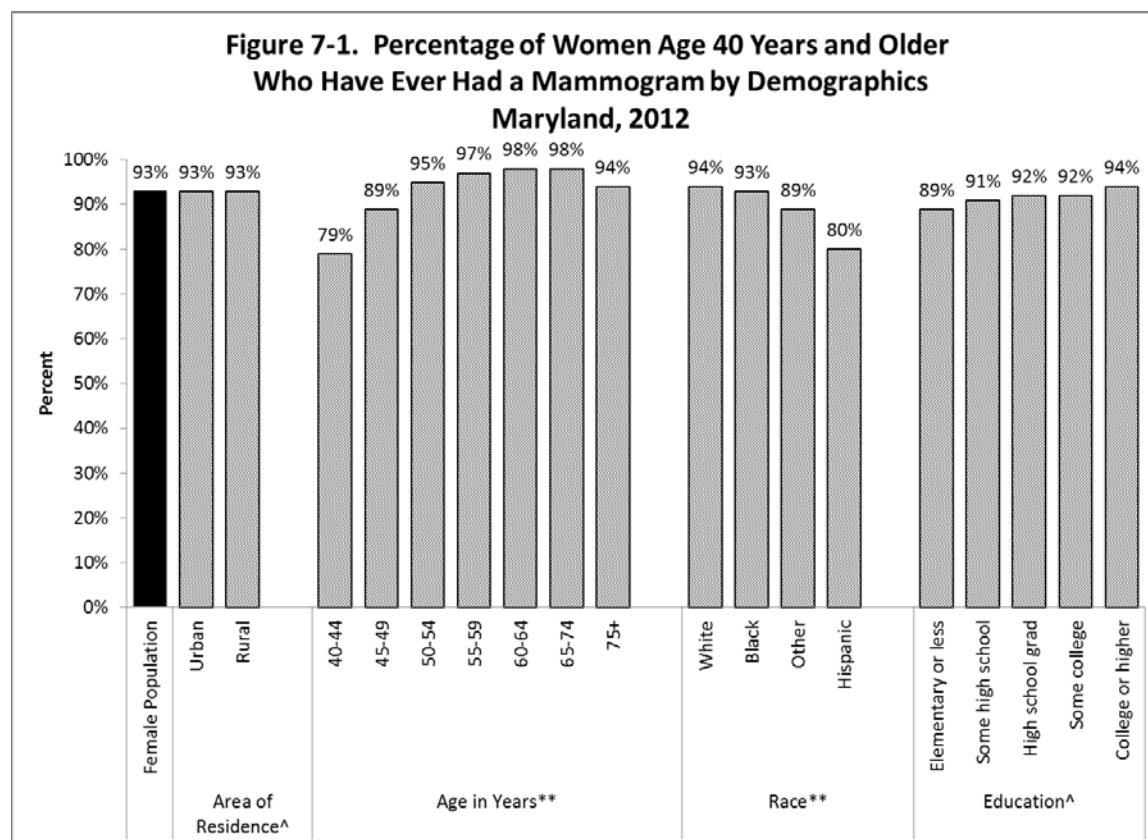
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

Breast Cancer Screening with Mammography within the Past 2 Years (Figure 7-2 and Table 7-1)

- Seventy-nine percent (79%) of women age 40 years and older reported having a mammogram in the past 2 years.
- Significantly lower rates of mammogram screening within the past 2 years were found among women age 40-44 years (69%) followed by women age 45-49 years (74%). Women in older age groups, except those age 75 years and older, all achieved levels of 81% or higher.
- Black women (84%) reported highest prevalence of mammography in the past 2 years, followed by white women (78%). Hispanic women and women of other race reported the lowest prevalence, both 69%.

Figure 7-2. Percentage of Women Age 40 Years and Older Who Had a Mammogram Within the Past 2 Years by Demographics Maryland, 2012

** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

51
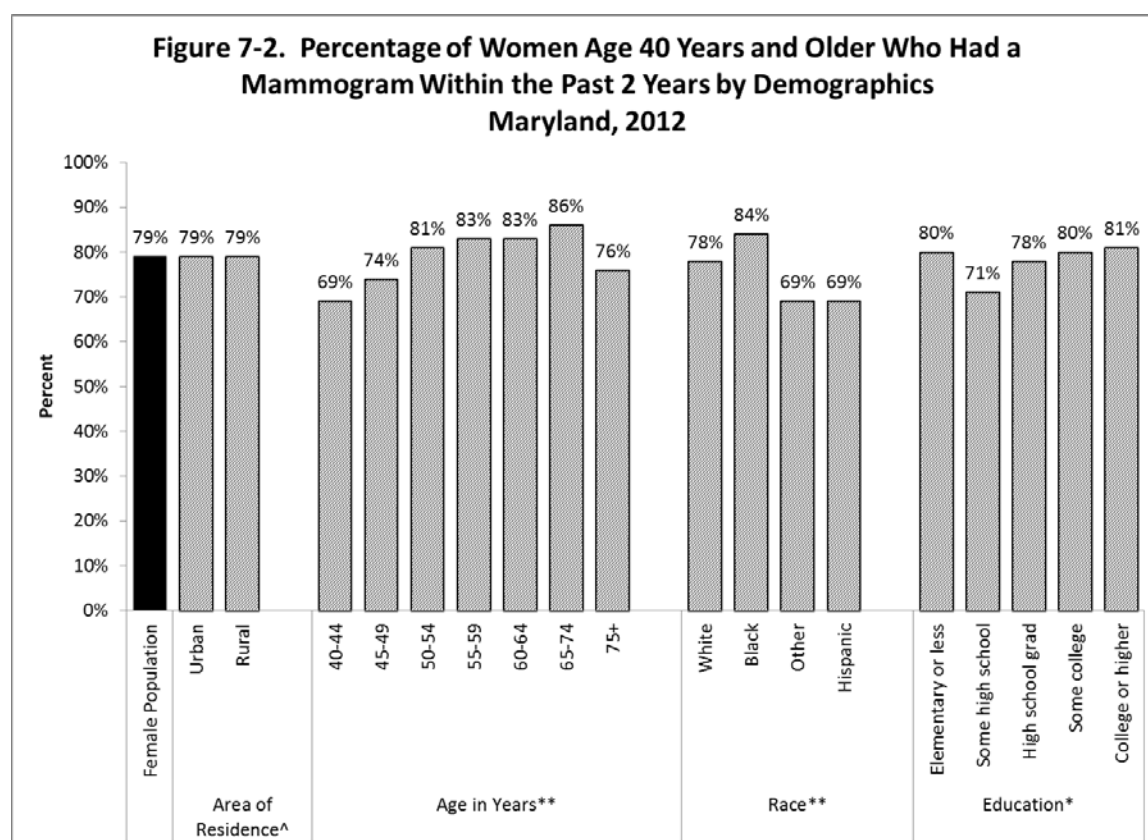
<u>Healthy People (HP) Objectives for Breast Cancer Screening</u>

HP 2010 established a target of increasing to 70% the proportion of women age 40 years and older who have received a mammogram within the preceding 2 years.[7] HP 2020 revised the target to increase the proportion of women age 50-74 years who have had breast cancer screening based on guidelines to 81.1%;[8] USPSTF recommends that guideline to be biennial (every two years) mammograms. In 2012, 83.2% of Maryland women age 50-74 years reported having had a mammogram in the past 2 years (data not shown in tables).

<u>Health Care Access and Breast Cancer Screening</u> (Table 7-2)

Each measure of access to health care was significantly associated with ever having had a mammogram and having a mammogram in the past 2 years. Women who had health insurance, reported no cost restrictions in seeing a doctor in the past 12 months, and had at least one person she thinks of as her personal doctor or health care provider had significantly higher prevalence of mammogram testing. As time increased since the past doctor's visit for a routine check-up, the proportion of women reporting mammogram testing decreased.

7.2 Cervical Cancer Screening

Cervical cytology (or the Pap test) is the screening test that is recommended for the early detection of pre-malignant and malignant changes of the cervix. The cervical cytology specimen may also be tested for human papillomavirus (HPV), the causative agent in the vast majority of cervical cancers. American Cancer Society guidelines[5,9] for cervical cancer screening in average risk women correspond to the latest guidelines released by the USPSTF in March, 2012;[10]

- Women age 21 to 65 years should undergo cervical cancer screening with cytology (Pap test) every 3 years or, for women age 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and human papillomavirus (HPV) testing every 5 years.
- The USPSTF recommends against screening for cervical cancer in women younger than age 21 years.
- The USPSTF recommends against screening for cervical cancer in women older than age 65 years who have had adequate prior screening and are not otherwise at high risk for cervical cancer.
- The USPSTF recommends against screening for cervical cancer in women who have had a hysterectomy with removal of the cervix and who do not have a history of a high-grade precancerous lesion or cervical cancer. (Women with a history of a serious cervical pre-cancer should continue to be tested for at least 20 years after that diagnosis, even if testing continues past age 65.)
- The USPSTF recommends against screening for cervical cancer with HPV testing, alone or in combination with cytology, in women younger than age 30 years.

Cervical Cancer Screening with a Pap Test (Figure 7-3 and Table 7-3)

The following section highlights findings related to cervical cancer screening among Maryland women age 21-65 years, who have not had a hysterectomy.

- Ninety-five percent (95%) of Maryland women reported ever having a Pap test. There was no statistically significant difference in cervical cancer screening prevalence by geographical residence.
- Women age 21-29 years reported a statistically significantly lower prevalence of ever having a Pap test (85%) compared to women in all other age groups, where the prevalence was 96% or higher.
- Women of other race (83%) reported significantly lower prevalence of ever having had a Pap test compared to white (96%) or black (95%) women. The prevalence among Hispanic women was 95%.

Figure 7-3. Percentage of Women Age 21 to 65 Years~
Who Have Ever Had a Pap Test by Demographics
Maryland, 2012
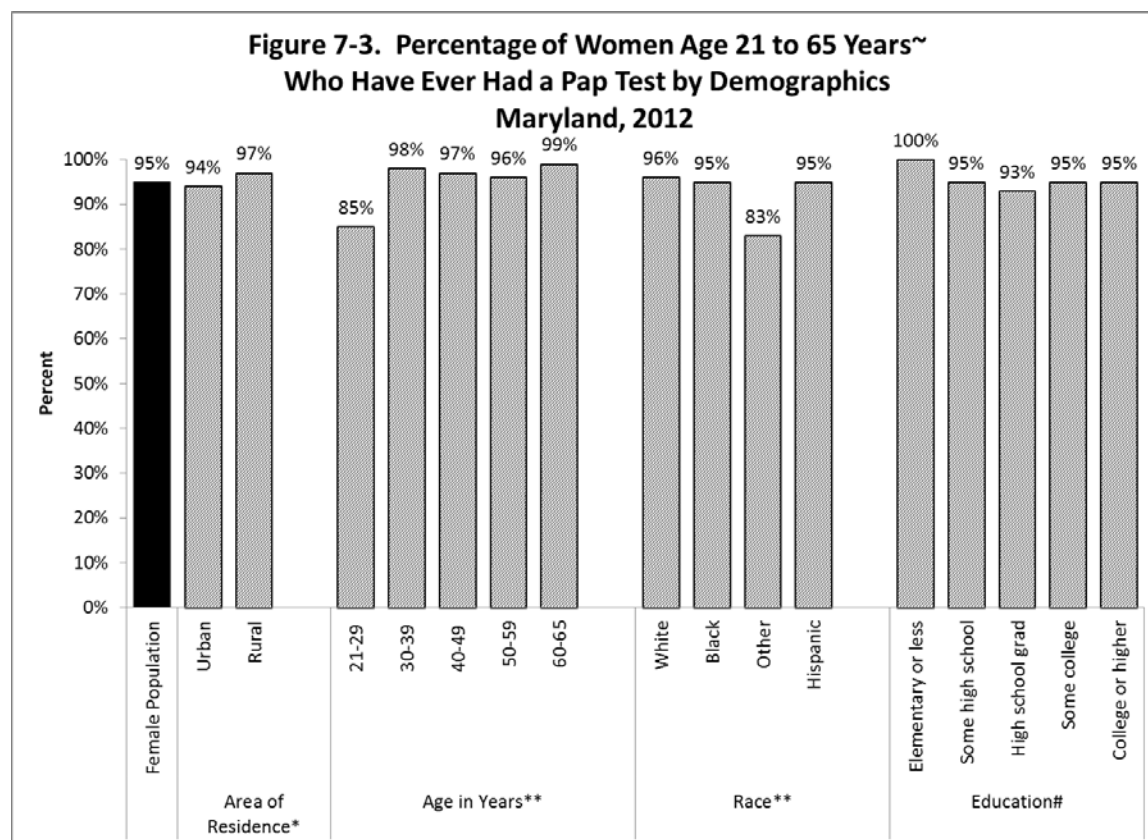
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1
# p-value not given when one level has 100% response
~ Among women who have not had a hysterectomy

Cervical Cancer Screening with a Pap Test within the Past 3 Years (Figure 7-4 and Table 7-3)

- Eighty-eight percent (88%) of Maryland women age 21 to 65 years, who have not had a hysterectomy, reported having had a Pap test within the past 3 years.
- The prevalence of having a Pap test in the past 3 years was statistically significantly higher among:
  - Women age 30-39 years (compared to women age 21-29 years),
  - Black women (92%) compared to women of other race (77%).
- Hispanic women reported comparable rates of Pap testing in the past 3 years (91%) to black women (92%).
- 87% of white women reported Pap testing in the past 3 years, but this was not significantly different from black women.

Figure 7-4. Percentage of Women Age 21 to 65 Years~ Who Had a Pap Test Within the Past 3 Years by Demographics Maryland, 2012
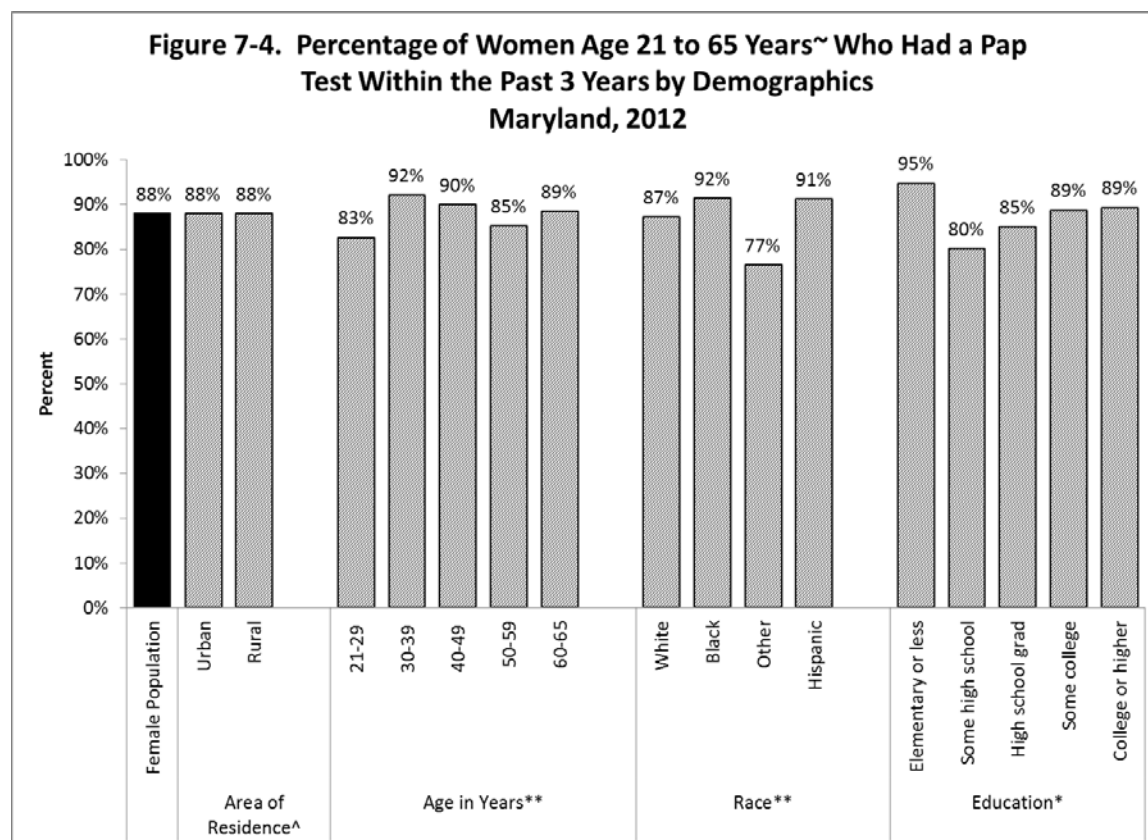
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1
~ Among women who have not had a hysterectomy

Healthy People Objectives for Cervical Cancer Screening

The HP 2010 target for cervical cancer screening was to increase to 90% the proportion of women age 18 years and older who reported having had a Pap test within the past 3 years. With the changes in recommendations for Pap testing, HP 2020 revised this goal to be 93% of women, age 21-65 years, who have not had a hysterectomy.[7] In 2012, 87.9% of Maryland women age 21-65 years reported having had a Pap test within the past 3 years, missing this HP 2020 objective.

Health Care Access and Cervical Cancer Screening (Table 7-4)

Each measure of access to health care was significantly associated with having a Pap test in the past 3 years. Women who had health insurance, reported no cost restrictions in seeing a doctor in the past 12 months, and had at least one person she thinks of as her personal doctor or health care provider had significantly higher prevalence of Pap testing in the past 3 years. As time increased since the past doctor's visit for a routine check-up, the proportion of women reporting Pap testing in the past 3 years decreased.

[1] Maryland Department of Health and Mental Hygiene. Cigarette Restitution Fund Program Cancer Data 2013. Baltimore, MD; November 2013. Available at http://phpa.dhmh.maryland.gov/cancer/SiteAssets/SitePages/surv_data-reports/2012%20CRF%20Cancer%20Report.pdf. Last accessed October 25, 2013.

[2] Surveillance, Epidemiology, and End Results(SEER) Program (www.seer.cancer.gov/) SEER*Stat Database: Mortality - All COD, Aggregated With State, Total U.S. (1969-2008), National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released October 2011. Underlying mortality data provided by NCHS (www.cdc.gov/nchs/).

[3] American Cancer Society. Can breast cancer be found early? Available at http://www.cancer.org/cancer/breastcancer/detailedguide/breast-cancer-detection. Last accessed October 25, 2013.

[4] U.S. Preventive Services Task Force. Screening for Breast Cancer. December 2009. Available at http://www.uspreventiveservicestaskforce.org/uspstf/uspsbrca.htm. Last accessed October 25, 2013.

[5] Smith RA, Brooks D, Cokkinides V, Saslow D, Brawley OW. Cancer Screening in the United States, 2013: A Review of Current American Cancer Society Guidelines, Current Issues in Cancer Screening Issues, and New Guidelines on Cervical Cancer and Lung Cancer Screening. *CA Cancer J Clin.* 2013;63:87–105. Available at http://onlinelibrary.wiley.com/doi/10.3322/caac.21174/pdf. Last accessed October 25, 2013

[6] Saslow D, Boetes C, Burke W, et al. American Cancer Society Guidelines for Breast Screening with MRI as an Adjunct to Mammography. *CA Cancer J Clin.* 2007;57:75-89. Available at http://onlinelibrary.wiley.com/doi/10.3322/canjclin.57.2.75/pdf. Last accessed November 13, 2013.

[7] U.S. Department of Health and Human Services. Healthy People 2010. Vol. I. Cancer.; November 2000. Available at http://www.healthypeople.gov/2010/document/html/volume1/03cancer.htm. Last accessed November 13, 2013.

[8] U.S. Department of Health and Human Services. Healthy People 2020. Topics & Objectives. Cancer. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=5. Last accessed November 13, 2013.

[9] American Cancer Society. Guidelines for Early Detection of Cancer.Available at http://www.cancer.org/healthy/findcancerearly/cancerscreeningguidelines/american-cancer-society-guidelines-for-the-early-detection-of-cancer. Last accessed October 25, 2013.

[10] U.S. Preventive Services Task Force. Screening for Cervical Cancer. Release date March 2012. Available at http://www.uspreventiveservicestaskforce.org/uspstf/uspscerv.htm. Last accessed October 25, 2013.

TABLE 7-1. SELF-REPORTED BREAST CANCER SCREENING WITH MAMMOGRAPHY BY DEMOGRAPHIC CHARACTERISTICS, AMONG WOMEN AGE 40 YEARS AND OLDER

Selected Characteristic	Ever Had a Mammogram					Had a Mammogram Within the Past 2 Years				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Female Population	6,358	5,987	93%	92-94%		6,358	5,051	79%	77-80%	
Area of Residence					^					^
Urban	3,388	3,195	93%	91-94%		3,388	2,723	79%	77-81%	
Rural	2,970	2,792	93%	92-95%		2,970	2,328	79%	76-81%	
Age in Years					**					**
40-44	565	453	79%	73-84%		565	396	69%	63-74%	
45-49	699	644	89%	84-94%		699	559	74%	69-80%	
50-54	826	778	95%	93-97%		826	656	81%	77-84%	
55-59	847	821	97%	96-99%		847	697	83%	80-87%	
60-64	841	814	98%	96-99%		841	709	83%	79-87%	
65-74	1,376	1,341	98%	97-99%		1,376	1,173	86%	83-89%	
75 and older	1,204	1,136	94%	92-96%		1,204	861	76%	72-79%	
Race					**					**
White	4,683	4,426	94%	93-95%		4,683	3,680	78%	77-80%	
Black	1,249	1,183	93%	91-95%		1,249	1,059	84%	81-87%	
Other	236	209	89%	82-95%		236	169	69%	60-78%	
Hispanic	126	113	80%	68-92%		126	101	69%	55-82%	
Education					^					*
Elementary or less	111	101	89%	76-100%		111	81	80%	66-93%	
Some high school	361	329	91%	86-96%		361	257	71%	63-79%	
High school grad or GED	1,840	1,717	92%	90-94%		1,840	1,420	78%	75-81%	
College 1-3 years	1,590	1,506	92%	90-95%		1,590	1,277	80%	77-83%	
College grad or higher	2,445	2,323	94%	93-96%		2,445	2,007	81%	78-83%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

TABLE 7-2. SELF-REPORTED BREAST CANCER SCREENING WITH MAMMOGRAPHY BY HEALTH CARE ACCESS, AMONG WOMEN AGE 40 YEARS AND OLDER

Selected Characteristic	Ever Had a Mammogram					Had a Mammogram Within the Past 2 Years				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Has any kind of health care coverage					**					**
Yes	5,994	5,685	94%	93-95%		5,994	4835	81%	80-83%	
No	354	293	76%	67-85%		354	210	50%	41-59%	
Could not see doctor in the past 12 months because of cost					**					**
Yes	535	473	84%	78-90%		535	343	61%	54-68%	
No	5,808	5,501	94%	93-95%		5,808	4698	81%	79-82%	
Has at least one person you think of as your personal doctor or health care provider					**					**
Yes	6,012	5,701	94%	92-95%		6,012	4862	81%	79-82%	
No	334	275	80%	73-88%		334	182	50%	41-59%	
Time since a doctor was last visited for a routine checkup					**					**
Within the past year (less than 1 year)	5,342	5,124	95%	94-96%		5,342	4471	84%	82-85%	
Within the past 2 years but more than 1 year	523	464	84%	78-91%		523	366	63%	56-71%	
Within the past 5 years but more than 2 years	218	187	85%	76-93%		218	113	49%	39-60%	
5 years or more (including never)	208	160	71%	62-81%		208	70	35%	26-44%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
*　0.05 < p-value < 0.10
^　p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

TABLE 7-3. SELF-REPORTED CERVICAL CANCER SCREENING WITH PAP TESTING BY DEMOGRAPHIC CHARACTERISTICS, AMONG WOMEN AGE 21 TO 65 YEARS~

Selected Characteristic	Ever Had a Pap Test					Had a Pap Test Within the Past 3 Years				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Female Population	3,966	3,863	95%	93-96%		3,966	3529	88%	86-90%	
Area of Residence					*					^
Urban	2,320	2,252	94%	93-96%		2,320	2076	88%	86-90%	
Rural	1,646	1,611	97%	95-98%		1,646	1453	88%	86-91%	
Age in Years					**					**
21-29	280	255	85%	79-91%		280	248	83%	76-89%	
30-39	690	677	98%	96-99%		690	638	92%	89-95%	
40-49	1,098	1,073	97%	95-99%		1,098	997	90%	87-93%	
50-59	1,193	1,163	96%	94-98%		1,193	1031	85%	82-88%	
60-65	705	695	99%	98-100%		705	615	89%	85-92%	
Race					**					**
White	2,697	2,647	96%	95-98%		2,697	2,382	87%	85-89%	
Black	896	869	95%	93-98%		896	830	92%	88-95%	
Other	216	198	83%	74-91%		216	179	77%	68-86%	
Hispanic	124	117	95%	89-100%		124	110	91%	85-98%	
Education					#					*
Elementary or less	26	26	100%	100-100%		26	23	95%	88-100%	
Some high school	109	104	95%	88-100%		109	87	80%	70-91%	
High school grad or GED	870	831	93%	89-97%		870	739	85%	81-89%	
College 1-3 years	999	975	95%	92-98%		999	886	89%	86-92%	
College grad or higher	1,958	1,923	95%	93-97%		1,958	1,790	89%	87-92%	

N = Number of people in the sample who responded to the survey question

n = Number of people answering "yes" to that question or who had that characteristic

\# P-value not given when one level has 100% response

~ Among women who have not had a hysterectomy

** p-value < 0.05

* 0.05 < p-value < 0.10

^ p-value > 0.10

**TABLE 7-4. SELF-REPORTED CERVICAL CANCER SCREENING WITH PAP TESTING BY HEALTH CARE ACCESS,
AMONG WOMEN AGE 21 TO 65 YEARS**

Selected Characteristic	Ever Had a Pap Test					Had a Pap Test Within the Past 3 Years				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Has any kind of health care coverage					**					**
Yes	3,620	3,545	96%	94-97%		3,620	3291	90%	88-92%	
No	342	315	90%	84-96%		342	237	75%	68-82%	
Could not see doctor in the past 12 months because of cost					^					**
Yes	457	436	93%	89-97%		457	348	77%	71-83%	
No	3,504	3,425	95%	94-97%		3,504	3179	90%	88-92%	
Has at least one person you think of as your personal doctor or health care provider					^					**
Yes	3,604	3,521	95%	94-97%		3,604	3256	89%	88-91%	
No	360	340	93%	88-97%		360	271	79%	72-85%	
Time since a doctor was last visited for a routine checkup					**					**
Within the past year (less than 1 year)	3,089	3,025	96%	95-98%		3,089	2867	92%	90-94%	
Within the past 2 years but more than 1 year	451	438	95%	91-98%		451	397	86%	80-91%	
Within the past 5 years but more than 2 years	224	215	88%	78-97%		224	161	72%	62-83%	
5 years or more (including never)	175	162	92%	85-99%		175	89	59%	48-71%	

N = Number of people in the sample who responded to the survey question

n = Number of people answering "yes" to that question or who had that characteristic

~ Among women who have not had a hysterectomy

** p-value < 0.05

*   0.05 < p-value < 0.10

^   p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

Chapter 8. Oral Cancer Screening

Oral cancer develops in the oral cavity or in the pharynx. Tobacco use (smoking cigarettes, pipes, or cigars and using smokeless tobacco) and heavy alcohol use are the greatest risk factors for developing oral cancer. In 2010, there were 669 new cases and 141 deaths from oral cancer among Maryland residents. In Maryland, men had higher oral cancer incidence and mortality rates than women; incidence rates were lower among blacks than among whites, while morality rates were higher among blacks than among whites.[1] Among the 50 states and the District of Columbia, Maryland ranked 21st highest for oral cancer mortality during 2006-2010.[1]

The American Cancer Society (ACS) recommends that during routine checkups, health care providers (HCP) examine the mouths and throats of their patients to screen for oral cancer.[2] The screening examination for oral cancer consists of visual inspection of the oral cavity and pharynx (mouth and throat) for lesions or discolorations, and feeling the oral structures (such as the tongue) for masses. This exam can be performed by a dentist or dental hygienist during a routine dental examination or by a physician, nurse practitioner, or physician's assistant during a physical exam. Because of evidence showing increased incidence of tongue and tonsil cancers from years 1973 to 2001 in young adults age 20-44 years, we examined self-reported oral cancer screening prevalence in Maryland adults age 18 years and older.[3]

Oral Cancer Screening Exam (Figure 8-1 and Table 8-1)

- Among Marylanders age 18 years and older, 32% reported they have ever had an oral cancer screening exam.
- Statewide, a statistically significant difference in prevalence of ever having an oral cancer screening exam was seen among the following groups:
  - Adults age 30-39 years (21%) and age 18-29 years (16%) reported lower prevalence of screening compared to those in the older age groups.
  - Lower prevalence of oral cancer screening was reported among blacks (20%), those of other race (25%), and Hispanics (21%), compared to whites (40%).
  - Prevalence of oral cancer screening was highest among those who had completed college or higher (42%) compared to the other education levels.

Figure 8-1. Percentage of Adults Age 18 Years and Older Who Have Ever Had an Oral Cancer Screening Exam by Demographics Maryland, 2012
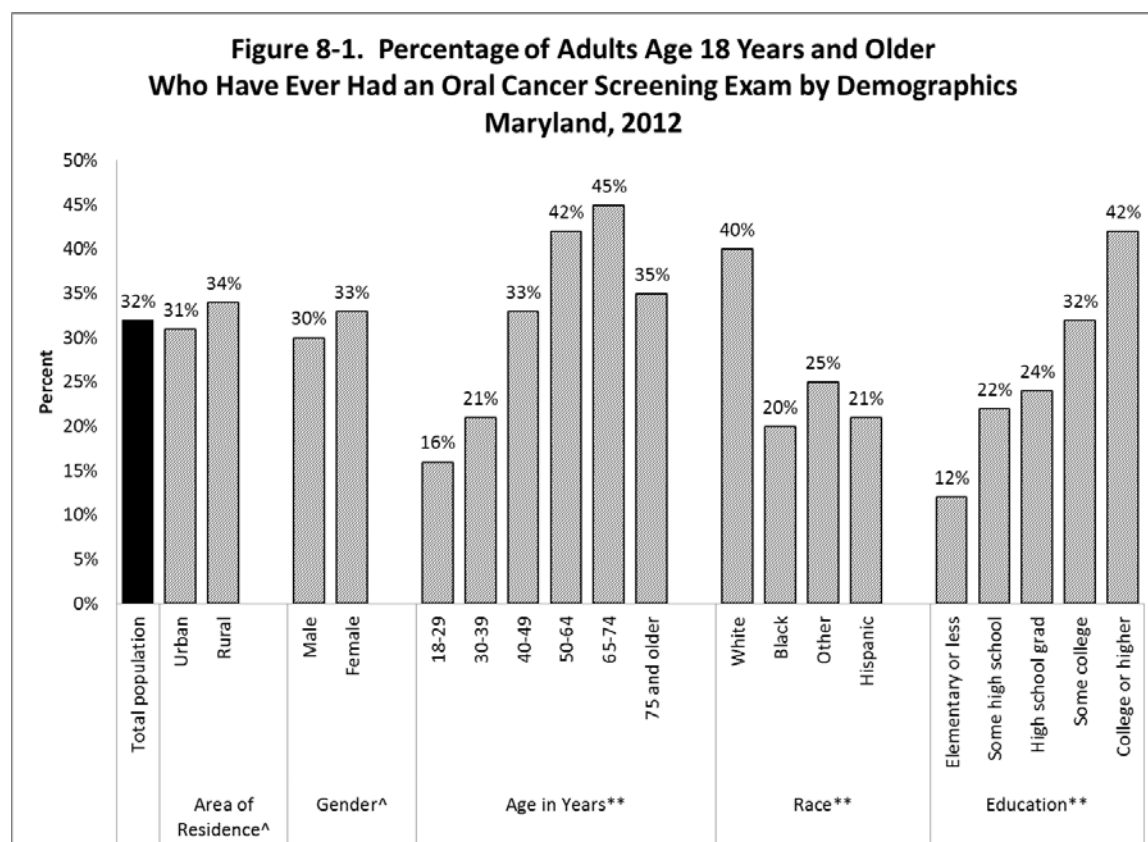
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Oral Cancer Screening Exam within the Past Year (Figure 8-2 and Table 8-1)

- Twenty-three percent (23%) of Marylanders age 18 years and older reported having had an oral cancer screening exam within the past year.
- Differences in the prevalence of having oral cancer screening within the past year were seen by area of residence, gender, age, race, and level of education:
  - Oral cancer screening in the past year was lowest among adults age 18-29 years (10%) and age 30-39 years (15%).
  - Lower prevalence of screening was reported among blacks (11%), persons of other race (16%), and Hispanics (19%) compared to whites (31%).
  - White women (35%) reported the highest prevalence of oral cancer screening in the past year compared to any other race and gender group.
  - Persons with less than a high school education (6%), high school graduates (18%), and some college (23%) had significantly lower prevalence of oral cancer screening in the past year than persons with a college degree or higher (34%).

Figure 8-2. Percentage of Adults Age 18 Years and Older Who Had an Oral Cancer Screening Exam in the Past Year by Demographics Maryland, 2012
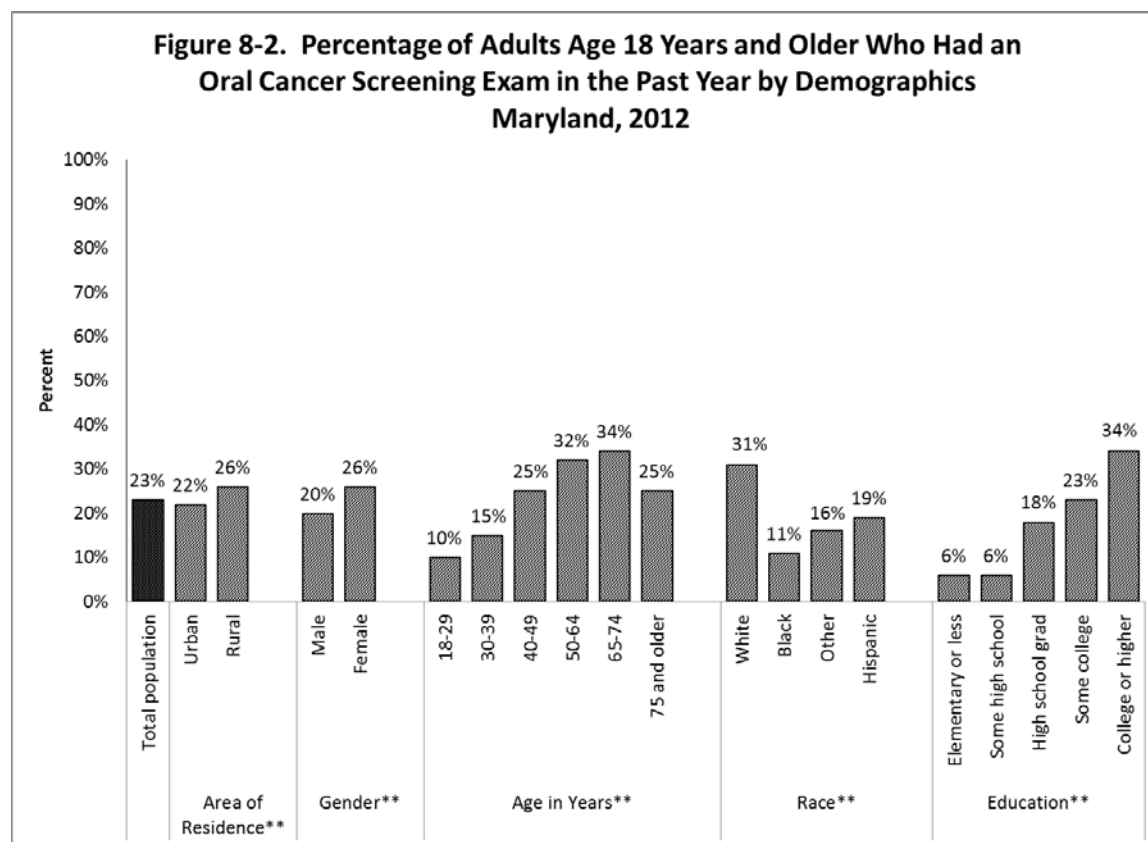
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

Access to Dental Care and Oral Cancer Screening (Figure 8-3 and Table 8-2)

Among Marylanders age 18 years and older who reported having had an oral cancer screening exam, 73% reported that the examination was performed by a dentist, 11% by a dental hygienist, and 15% by a physician. This highlights the importance of routine dental visits as a predictor of oral cancer screening. The HP 2020 has set a target to increase to 49% the proportion of children, adolescents, and adults (all ages) who use the oral care system in the past year. [4]

Among Marylanders age 18 years and older,

- Seventy-three percent (73%) reported that they had visited a dentist or dental clinic in the past year for any reason.
- The prevalence of reporting dental visits in the past year was statistically significantly lower among:
    - Males compared to females.
    - Blacks and Hispanics compared to whites.
    - Persons with some college or less compared to those with a college degree or higher.

Figure 8-3. Percentage of Adults Age 18 Years and Older Who Had a Dental Visit in the Past Year by Demographics Maryland, 2012
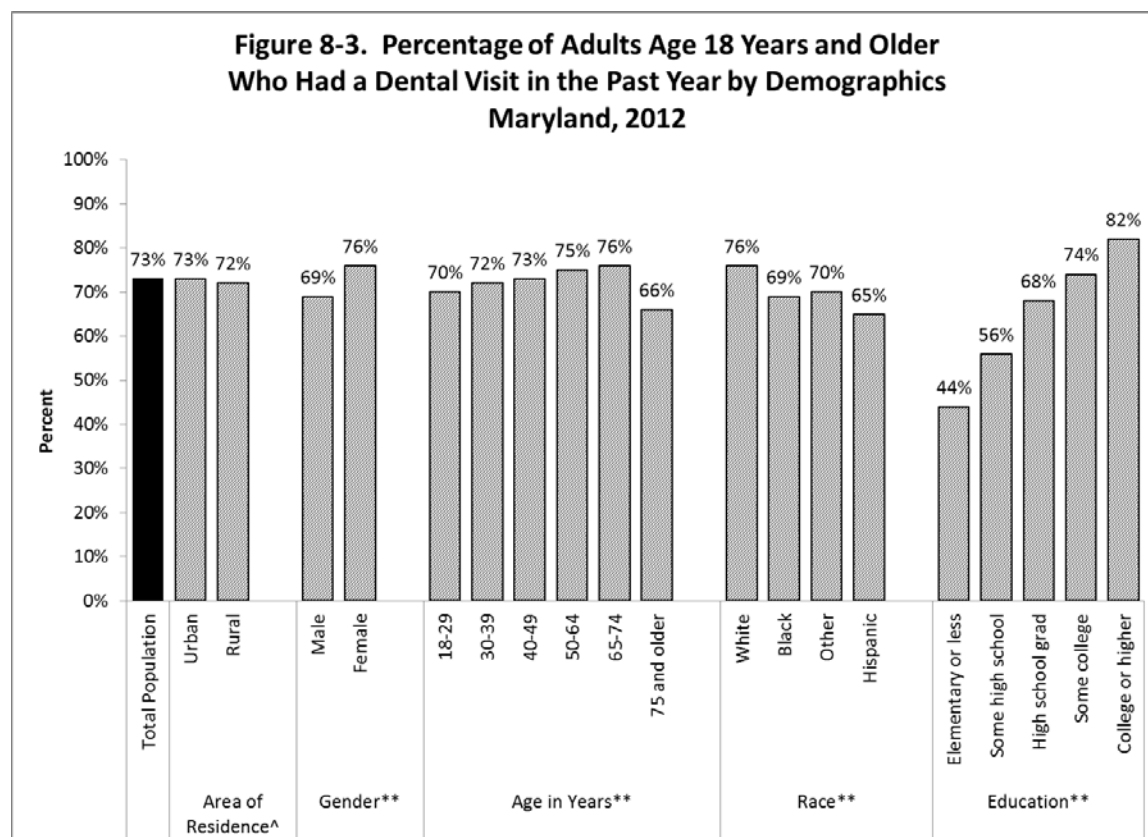
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

While 73% of Marylanders have visited a dentist in the past year (for any reason) and 76% had a routine check-up with a health care provider in the past year, only 23% of survey respondents reported having an oral cancer screening exam in that time. It is not known whether these dental visits in the past year were for acute care or for preventive care (visits which are more likely to include an oral cancer exam). Alternatively, dental providers may be performing oral cancer screening and not discussing the exam or its results with their patients.

The association between prevalence of oral cancer screening and number of years since the last dental visit was evaluated (data not shown in tables):

- Thirty-eight percent (38%) of people who visited a dentist in the past year reported they have ever had an oral cancer screening exam, compared to 16% who saw a dentist 1 or more years before.
- Of the people who visited a dentist in the past year for any reason, only 32% reported receiving an oral cancer exam in the past year.

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[1] Maryland Department of Health and Mental Hygiene. Cigarette Restitution Fund Program Cancer Data 2013. Baltimore, MD; November 2013.
Available at http://phpa.dhmh.maryland.gov/cancer/SitePages/surv_data-reports.aspx
[2] American Cancer Society. Oral Cancer. 2007. Available at
http://www.cancer.org/acs/groups/content/@nho/documents/document/oralcancerpdf.pdf. Last accessed October 22, 2013.
[3] Shiboski CH, Schmidt BL, Jordan RCK. Tongue and tonsil carcinoma: Increasing trends in the U.S. population ages 20-44 years. Cancer 2005;103(9):1843-9.
[4] U.S. Department of Health and Human Services. Healthy People 2020. Topics & Objectives. Oral Health. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=32. Last accessed October 22, 2013.

TABLE 8-1. SELF-REPORTED ORAL CANCER SCREENING BY DEMOGRAPHIC CHARACTERISTICS, AMONG ADULTS AGE 18 YEARS AND OLDER

Selected Characteristic	Ever Had an Oral Cancer Screening Exam					Had an Oral Cancer Screening Exam in the Past Year				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Total Population	5,429	2,316	32%	29-34%		5,429	1,832	23%	21-25%	
Area of Residence					^					**
Urban	2,869	1,232	31%	28-33%		2,869	963	22%	20-24%	
Rural	2,560	1,084	34%	31-37%		2,560	869	26%	24-29%	
Gender					^					**
Male	2,025	822	30%	27-33%		2,025	631	20%	18-23%	
Female	3,404	1,494	33%	30-35%		3,404	1,201	26%	23-28%	
Age in Years					**					**
18-29	200	43	16%	10-23%		200	31	10%	5-14%	
30-39	489	135	21%	16-26%		489	104	15%	10-19%	
40-49	892	361	33%	29-38%		892	289	25%	21-29%	
50-64	1,861	879	42%	39-45%		1,861	696	32%	29-35%	
65-74	1,083	543	45%	40-49%		1,083	437	34%	30-37%	
75 and older	829	324	35%	31-39%		829	252	25%	22-29%	
Race					**					**
White	3,971	1,939	40%	37-42%		3,971	1,572	31%	29-33%	
Black	1,019	245	20%	17-24%		1,019	158	11%	9-14%	
Other	241	63	25%	16-34%		241	49	16%	9-23%	
Hispanic	122	40	21%	12-31%		122	29	19%	10-28%	
Gender and Race					**					**
White male	1,544	711	37%	33-41%		1,544	558	27%	24-30%	
Black male	303	58	19%	12-25%		303	32	7%	4-11%	
Other male	103	24	25%	11-38%		103	17	15%	4-25%	
Hispanic male	44	14	27%	10-44%		44	13	26%	10-43%	
White female	2,427	1,228	42%	39-45%		2,427	1,014	35%	32-38%	
Black female	716	187	22%	17-26%		716	126	15%	11-18%	
Other female	138	39	25%	13-38%		138	32	18%	7-28%	
Hispanic female	78	26	17%	7-26%		78	16	13%	4-21%	
Education					**					**
Elementary or less	99	14	12%	4-20%		99	8	6%	1-11%	
Some high school	265	51	22%	13-30%		265	28	6%	3-8%	
High school grad or GED	1,429	476	24%	21-28%		1,429	357	18%	15-21%	
College 1-3 years	1,324	558	32%	28-36%		1,324	437	23%	19-26%	
College grad or higher	2,301	1,214	42%	38-45%		2,301	999	34%	31-37%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

TABLE 8-2. SELF-REPORTED DENTAL VISITS IN THE PAST YEAR, AMONG ADULTS AGE 18 YEARS AND OLDER

Selected Characteristic	Had a Dental Visit in the Past Year				
	N	n	wt %	95% CI	Stat Sig
Total Population	12,689	9,568	73%	71-74%	
Area of Residence					^
Urban	7,002	5,379	73%	71-75%	
Rural	5,687	4,189	72%	70-74%	
Gender					**
Male	4,848	3,596	69%	67-72%	
Female	7,841	5,972	76%	74-77%	
Age in Years					**
18-29	747	525	70%	66-74%	
30-39	1,268	960	72%	68-76%	
40-49	2,137	1,659	73%	70-76%	
50-64	4,219	3,243	75%	73-77%	
65-74	2,323	1,791	76%	73-79%	
75 and older	1,810	1,247	66%	62-69%	
Race					**
White	9,111	7,097	76%	75-78%	
Black	2,447	1,667	69%	66-72%	
Other	610	424	70%	64-76%	
Hispanic	334	233	65%	57-72%	
Gender and Race					**
White male	3,576	2,750	74%	71-76%	
Black male	781	509	63%	59-68%	
Other male	270	176	63%	55-72%	
Hispanic male	132	96	66%	55-77%	
White female	5,535	4,347	79%	77-81%	
Black female	1,666	1,158	73%	70-76%	
Other female	340	248	77%	70-84%	
Hispanic female	202	137	63%	53-73%	
Education					**
Elementary or less	215	93	44%	33-55%	
Some high school	633	303	56%	50-63%	
High school grad or GED	3,330	2,231	68%	65-71%	
College 1-3 years	3,073	2,315	74%	71-76%	
College grad or higher	5,366	4,573	82%	80-84%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

Chapter 9. Methods to Prevent Sun Exposure

Skin cancer, including non-melanoma (squamous and basal cell cancers) and melanoma skin cancer, is the most common form of cancer in the United States. While rarely fatal, it was estimated that over 2 million people were treated for non-melanoma skin cancer (NMSC) in 2006 in the United States.[1] It is estimated that in 2013, over 70,000 people will be diagnosed with the much more serious melanoma skin cancer (MSC) and that almost 9,000 deaths will be attributed to this cancer. In Maryland, there were 1,316 new cases of MSC and 143 deaths from the disease in 2010.[2]

There is solid evidence that exposure to sun and other ultraviolet (UV) radiation is associated with increased risk of NMSC. There is fair evidence that MSC is associated with intermittent acute sun exposure which results in sunburns and that exposure in childhood and adolescence may be more important.[3] Based on these associations it is generally recommended that people reduce their exposure to UV radiation by avoiding the sun between the hours of 10 a.m. and 4 p.m.; wearing sun-protective clothing when exposed to sunlight; using sunscreen with a sun-protection factor (SPF) of 15 or higher; and avoiding artificial sources of UV light.[4] Questions about these sun preventive behaviors were asked of about one-half of the respondents in 2012 and their answers were weighted to the Maryland adult population age 18 years and older.

Two percent (2%) of adults age 18 years and older reported they do not go out in the sun. Behaviors for sun prevention are presented for the remaining population at risk of sun exposure.

Limiting Sun Exposure between the Hours of 10 a.m. to 4 p.m. (Figure 9-1 and Table 9-1)

- Thirty-seven percent (37%) of adults reported they always or almost always limit their exposure to the sun between the hours of 10 a.m. and 4 p.m.
- This was statistically higher among women (39%) compared to men (34%).
- There was no statistically significant difference by area of residence, age, race, or education level.

Figure 9-1. Percentage of Adults Age 18 Years and Older Who Always or Almost Always Limit their Sun Exposure Between 10 a.m. and 4 p.m. by Demographics, Maryland, 2012
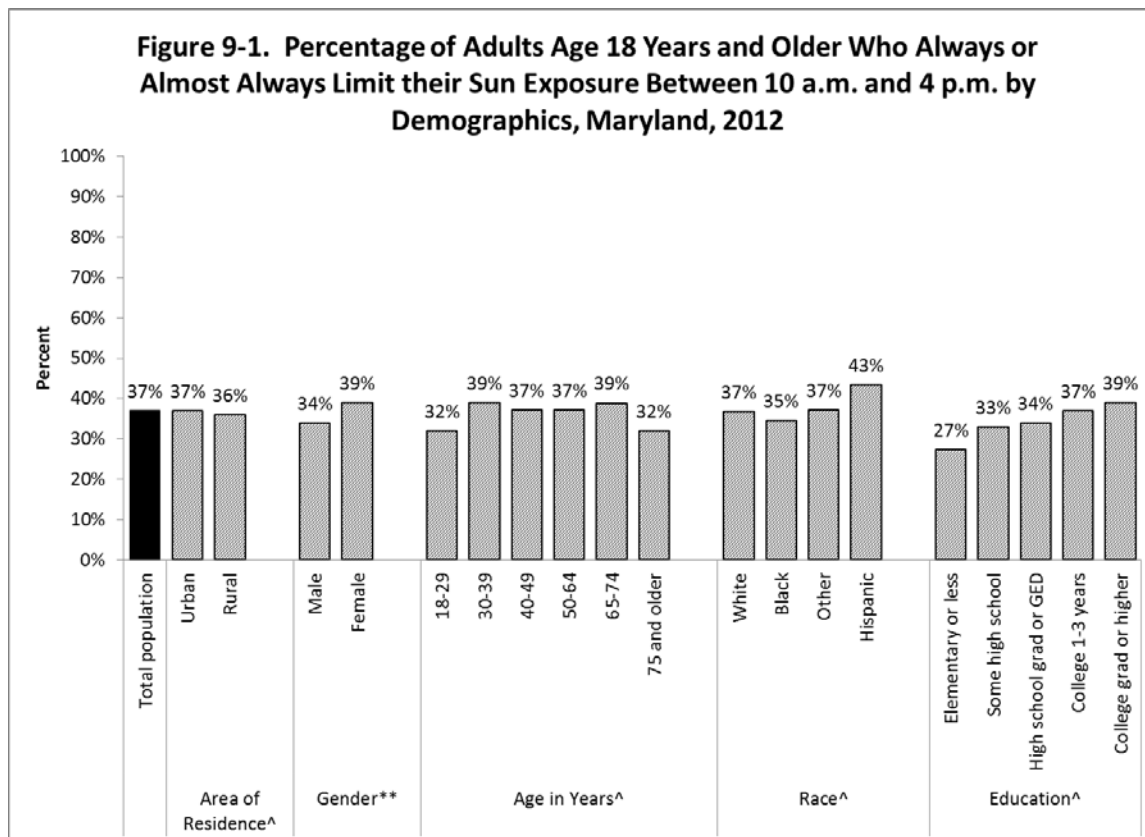
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

<u>Using Sunscreen with a Sun Protection Factor (SPF) of 15 or More</u> (Figure 9-2 and Table 9-1)

- Twenty-seven percent (27%) of adults reported that they always or almost always use sunscreen with an SPF of 15 or greater when outdoors for an hour or more on a sunny day.
- This was statistically higher among women (36%) than men (17%) and among whites (35%) compared to blacks (13%). Sunscreen use was highest among white women and women of other race.
- Sunscreen use was lowest among adults age 18-29 years.
- Sunscreen use was higher among those with at least a college education.

Figure 9-2. Percentage of Adults Age 18 Years and Older Who Always or Almost Always Wear Sunscreen with SPF 15 or Higher When in the Sun for an Hour or More by Demographics Maryland, 2012
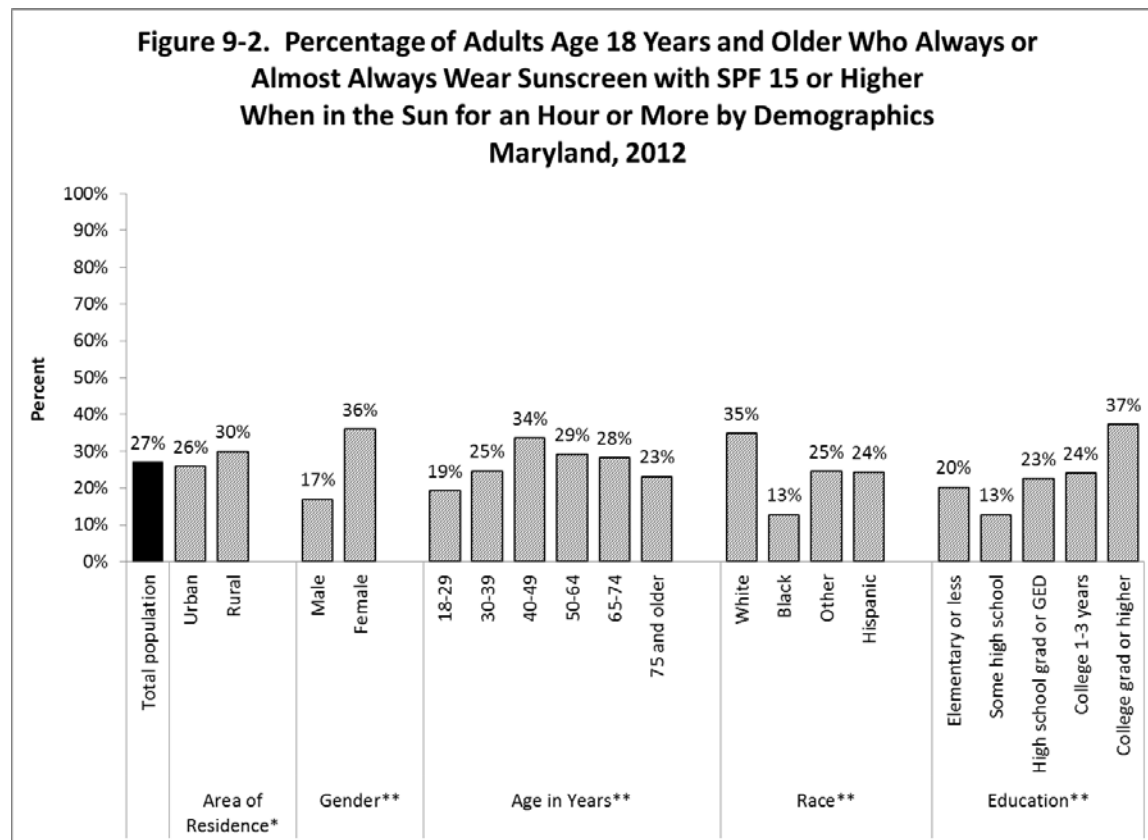
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

Wearing a Hat with a Broad Brim (Figure 9-3 and Table 9-2)

- Twenty-five percent (25%) of adults reported that they always or almost always wear a broad brimmed hat when outdoors for an hour or more on a sunny day.
- This was statistically higher among men (35%) than women (16%), especially higher among white and black men.
- Broad brimmed hat use generally increased with increasing age.

Figure 9-3. Percentage of Adults Age 18 Years and Older Who Always or Almost Always Wear a Hat With a Broad Brim When in the Sun for an Hour or More by Demographics Maryland, 2012
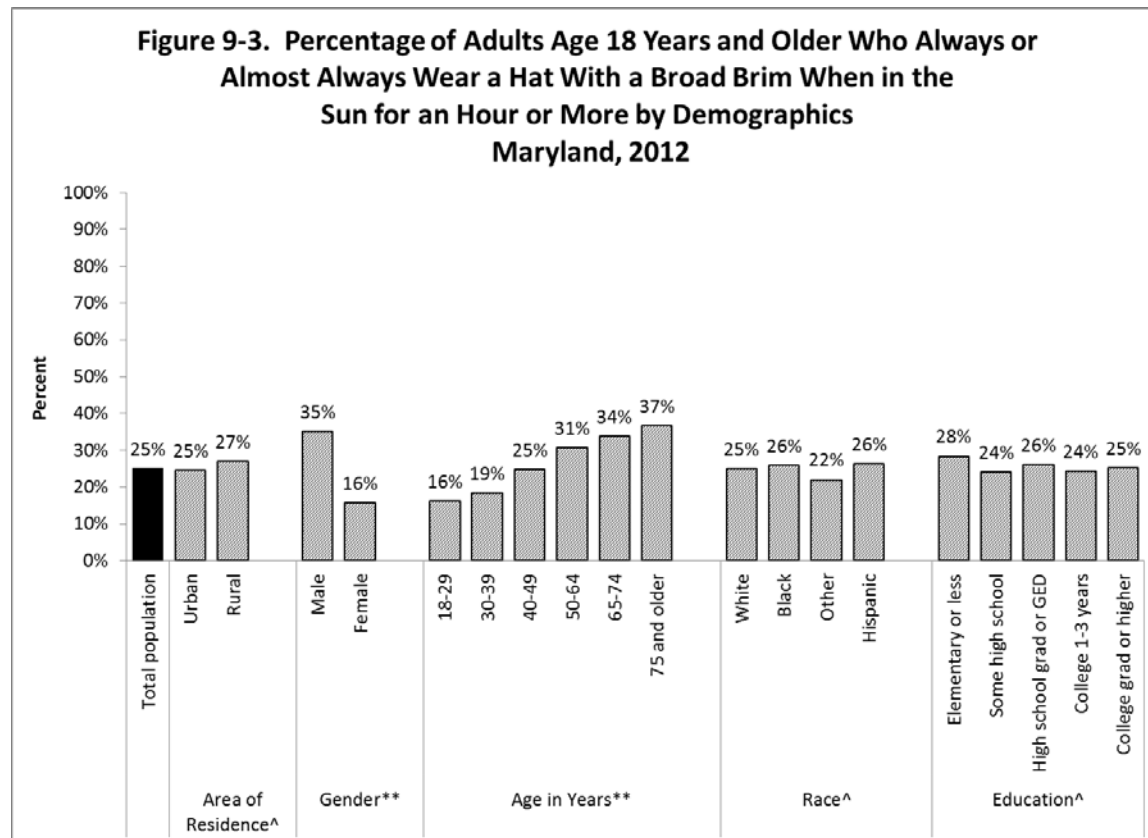
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

Wearing Protective Clothing such as Long Sleeves or Long Pants (Figure 9-4 and Table 9-2)

- Twenty-three percent (23%) of adults reported that they always or almost always wear protective clothing when outdoors for an hour or more on a sunny day.
- The use of protective clothing was higher among adults living in urban areas (24%) compared to rural (19%), men (28%) compared to women (18%), and adults age 65 years and older.
- The use of protective clothing was lowest among whites when compared to blacks and lowest among white and Hispanic women.

Figure 9-4. Percentage of Adults Age 18 Years and Older Who Always or Almost Always Wear Protective Clothing When in the Sun for an Hour or More by Demographics
Maryland, 2012
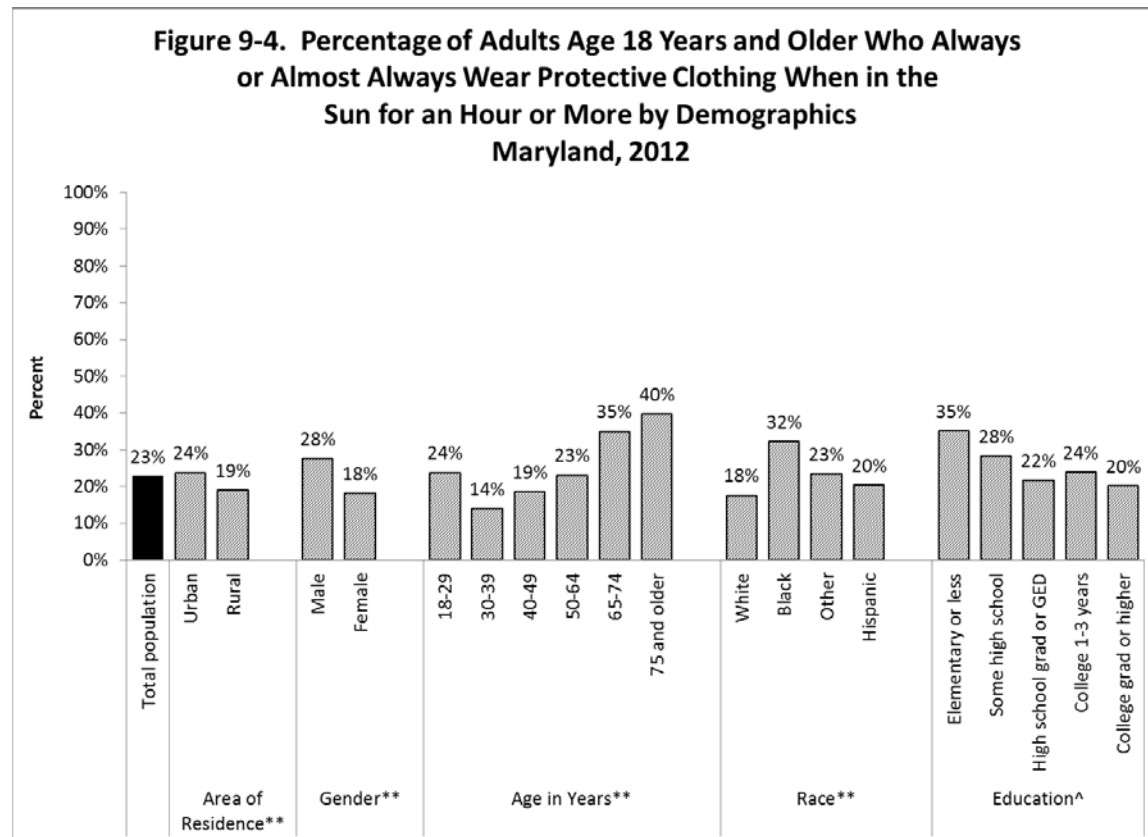
** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

Healthy People (HP) 2020

One of the objectives of HP 2020 is to increase the proportion of adults age 18 years and older who follow sun protective measures that may reduce the risk of sun cancer to 80.1% from a baseline of 72.8%.[5]

Using at Least One Sun Protective Measure Among Adults who Go Out in the Sun (Figure 9-5 and Table 9-3)

Defining protective measures as limiting sun exposure between 10 a.m. and 4 p.m., using sunscreen with a SPF of at least 15, wearing a broad brimmed hat, and wearing protective clothing;

- Sixty-eight percent (68%) of adults reported that they always or almost always use least one sun protective measure.
- Self-reported sun protective behavior was lowest among adults age 18-29 years compared to those age 40 years and older.

Figure 9-5. Percentage of Adults Age 18 Years and Older Who Always or Almost Always Use at Least One Sun Protective Measure by Demographics, Maryland 2012
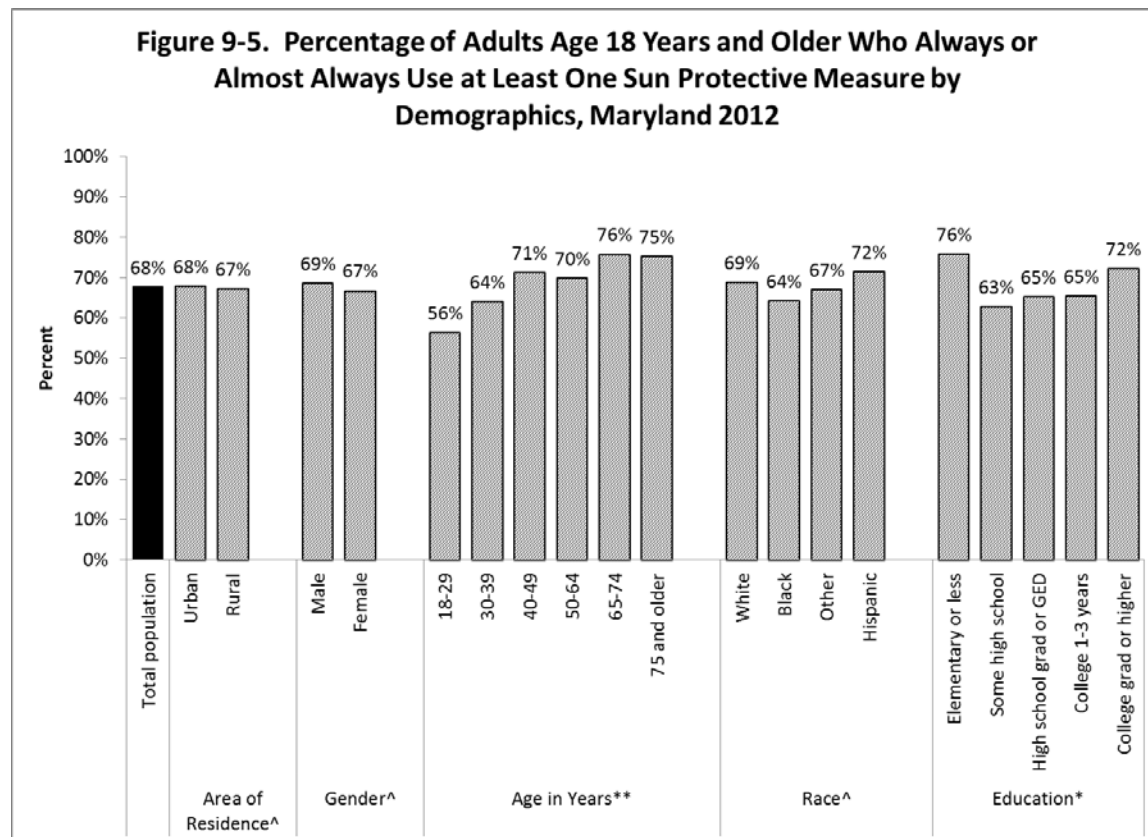
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

[1] American Cancer Society. Cancer Facts and Figures 2013. Available at http://www.cancer.org/acs/groups/content/@epidemiologysurveilance/documents/document/acspc-036845.pdf. Last accessed October 1, 2013.

[2] Maryland Department of Health and Mental Hygiene. Cigarette Restitution Fund Program Cancer Data 2013. Baltimore, MD; December 2013. Available at http://phpa.dhmh.maryland.gov/cancer/SiteAssets/SitePages/surv_data-reports/2012%20CRF%20Cancer%20Report.pdf. Last accessed October 1, 2013.

[3] National Cancer Institute. Skin Cancer Prevention PDQ. Available at http://www.cancer.gov/cancertopics/pdq/prevention/skin/HealthProfessional#Section_186. Last accessed November 13, 2013.

[4] American Cancer Society. Skin Cancer Prevention and Early Detection. Available at http://www.cancer.org/acs/groups/cid/documents/webcontent/003184-pdf. Last accessed November 13, 2013.

[5] U.S. Department of Health and Human Services. Healthy People 2020. Topics & Objectives. Cancer. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=5. Last accessed November 13, 2013.

TABLE 9-1. SELF-REPORTED SUN PROTECTIVE MEASURES, AMONG ADULTS AGE 18 YEARS AND OLDER WHO GO IN THE SUN

Selected Characteristic	Always or Almost Always Limit Their Sun Exposure Between 10 am - 4pm					Always or Almost Always Use Sunscreen of SPF 15 or Higher~				
	TOTAL					TOTAL				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Total Population	5,275	1,983	37%	34-39%		5,337	1,827	27%	25-29%	
Area of Residence					^					*
Urban	2,800	1,070	37%	34-40%		2,831	974	26%	24-29%	
Rural	2,475	913	36%	33-39%		2,506	853	30%	27-32%	
Gender					**					**
Male	1,971	679	34%	30-37%		2,017	461	17%	15-20%	
Female	3,304	1,304	39%	36-42%		3,320	1,366	36%	33-39%	
Age in Years					^					**
18-29	201	70	32%	24-40%		201	43	19%	13-26%	
30-39	486	185	39%	32-45%		492	184	25%	20-30%	
40-49	889	349	37%	32-42%		885	354	34%	29-38%	
50-64	1,823	683	37%	34-40%		1,846	642	29%	26-32%	
65-74	1,042	393	39%	34-43%		1,061	357	28%	25-32%	
75 and older	762	272	32%	28-37%		774	217	23%	19-27%	
Race					^					**
White	3,865	1,476	37%	34-39%		3,909	1,532	35%	33-38%	
Black	991	340	35%	30-39%		1,003	162	13%	10-16%	
Other	229	90	37%	27-47%		233	72	25%	16-33%	
Hispanic	116	52	43%	31-56%		116	36	24%	13-36%	
Gender and Race					^					**
White male	1,501	512	33%	29-37%		1,537	403	23%	20-26%	
Black male	301	99	33%	25-41%		305	27	6%	3-10%	
Other male	97	39	35%	21-49%		100	17	13%	5-20%	
Hispanic male	41	20	45%	24-65%		42	8	23%	4-43%	
White female	2,364	964	40%	37-44%		2,372	1,129	47%	43-50%	
Black female	690	241	36%	30-41%		698	135	18%	14-23%	
Other female	132	51	40%	25-54%		133	55	40%	26-54%	
Hispanic female	75	32	43%	26-59%		74	28	25%	12-38%	
Education					^					**
Elementary or less	83	19	27%	11-44%		86	16	20%	7-33%	
Some high school	247	89	33%	24-43%		244	44	13%	7-19%	
High school grad or GED	1,370	463	34%	29-38%		1,395	382	23%	19-26%	
College 1-3 years	1,295	487	37%	33-42%		1,307	421	24%	21-28%	
College grad or higher	2,268	919	39%	36-43%		2,293	961	37%	34-41%	

N = Number of people in the sample who responded to the survey question

n = Number of people answering "yes" to that question or who had that characteristic

~ When outdoors for an hour or more on a sunny day

** p-value < 0.05

* 0.05 < p-value < 0.10

^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

TABLE 9-2. SELF-REPORTED SUN PROTECTIVE MEASURES, AMONG ADULTS AGE 18 YEARS AND OLDER WHO GO IN THE SUN

Selected Characteristic	Always or Almost Always Wear a Hat With a Broad Brim~					Always or Almost Always Wear Protective Clothing~				
	TOTAL					TOTAL				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Total Population	5,340	1,543	25%	23-27%		5,286	1,281	23%	21-25%	
Area of Residence					^					**
Urban	2,832	787	25%	22-27%		2,809	734	24%	21-26%	
Rural	2,508	756	27%	24-30%		2,477	547	19%	16-22%	
Gender					**					**
Male	2,020	875	35%	32-39%		1,999	572	28%	24-31%	
Female	3,320	668	16%	14-18%		3,287	709	18%	16-20%	
Age in Years					**					**
18-29	202	27	16%	9-23%		201	38	24%	16-32%	
30-39	492	81	19%	13-24%		490	64	14%	9-19%	
40-49	885	196	25%	20-29%		881	130	19%	14-23%	
50-64	1,849	568	31%	28-34%		1,835	401	23%	20-26%	
65-74	1,060	369	34%	30-38%		1,049	318	35%	30-40%	
75 and older	775	283	37%	32-41%		754	310	40%	35-44%	
Race					^					**
White	3,913	1,150	25%	23-27%		3,874	837	18%	16-20%	
Black	999	266	26%	22-30%		991	319	32%	28-37%	
Other	234	65	22%	14-30%		230	71	23%	15-32%	
Hispanic	117	33	26%	15-38%		115	26	20%	10-31%	
Gender and Race					**					**
White male	1,540	658	34%	30-38%		1,525	394	23%	19-26%	
Black male	304	149	42%	34-50%		301	120	36%	28-44%	
Other male	101	34	23%	12-34%		100	30	25%	13-38%	
Hispanic male	42	18	38%	17-58%		41	16	37%	17-57%	
White female	2,373	492	17%	14-19%		2,349	443	13%	11-14%	
Black female	695	117	12%	9-15%		690	199	29%	24-35%	
Other female	133	31	21%	8-33%		130	41	21%	11-31%	
Hispanic female	75	15	18%	6-29%		74	10	8%	2-14%	
Education					^					^
Elementary or less	88	29	28%	15-42%		86	35	35%	20-50%	
Some high school	245	70	24%	15-33%		240	62	28%	19-38%	
High school grad or GED	1,393	361	26%	22-30%		1,379	318	22%	18-26%	
College 1-3 years	1,309	357	24%	20-29%		1,285	314	24%	20-28%	
College grad or higher	2,293	722	25%	22-28%		2,284	548	20%	18-23%	

N = Number of people in the sample who responded to the survey question

n = Number of people answering "yes" to that question or who had that characteristic

~ When outdoors for an hour or more on a sunny day

** p-value < 0.05

* 0.05 < p-value < 0.10

^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

TABLE 9-3. SELF-REPORTED USE OF AT LEAST ONE SUN PROTECTIVE MEASURE, AMONG ADULTS AGE 18 YEARS AND OLDER WHO GO OUT IN THE SUN

Selected Characteristic	Always or Almost Always Use at Least One Sun Protective Measure				
	TOTAL				
	N	n	wt %	95% CI	Stat Sig
Total Population	5,293	3,803	68%	65-70%	
Area of Residence					^
Urban	2,808	2,047	68%	65-71%	
Rural	2,485	1,756	67%	64-70%	
Gender					^
Male	1,997	1,475	69%	65-73%	
Female	3,296	2,328	67%	64-70%	
Age in Years					**
18-29	200	116	56%	48-65%	
30-39	488	329	64%	58-70%	
40-49	887	631	71%	67-76%	
50-64	1,836	1,301	70%	67-73%	
65-74	1,048	773	76%	72-80%	
75 and older	760	591	75%	71-79%	
Race					^
White	3,879	2,833	69%	66-72%	
Black	992	659	64%	59-69%	
Other	231	164	67%	57-78%	
Hispanic	115	85	72%	59-84%	
Gender and Race					^
White male	1,522	1,123	68%	64-73%	
Black male	302	221	68%	60-76%	
Other male	98	72	62%	46-77%	
Hispanic male	42	33	85%	73-97%	
White female	2,357	1,710	69%	66-73%	
Black female	690	438	61%	55-67%	
Other female	133	92	74%	61-86%	
Hispanic female	73	52	61%	43-78%	
Education					*
Elementary or less	81	59	76%	64-88%	
Some high school	244	162	63%	52-73%	
High school grad or GED	1,376	919	65%	61-70%	
College 1-3 years	1,299	912	65%	61-70%	
College grad or higher	2,281	1,740	72%	69-76%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

Maryland Cancer Screening and Risk Behaviors Report, 2012

Chapter 10. Lifestyle Factors and Cancer Screening

Lifestyle factors contribute to one's risk of developing cancer. Tobacco use and high-risk alcohol consumption are modifiable lifestyle risk factors that have been shown to influence the incidence of several diseases, including cancer.[1,2] Cigarette smoking is causally related to cancer of the oral cavity and pharynx, larynx, lung, bronchus, trachea, stomach, cervix, esophagus, bladder, kidney, pancreas, blood marrow, and blood.[1] Smoking cessation has been shown to decrease the risk of developing smoking-related cancers compared to current smoking. High-risk alcohol consumption is also related to cancers of the colon, breast, liver, esophagus, oral cavity, pharynx, and larynx.[2]

Being overweight or obese are major health concerns in the United States (U.S.). Scientific evidence has established clear associations between being overweight/obese and the leading causes of morbidity and mortality in the U.S., including cardiovascular disease, cancer, and diabetes.[3,4] Being overweight or obese are clearly associated with increased risk of developing cancers of the breast (in postmenopausal women), colon, endometrium, esophagus, and kidney. Highly suggestive evidence also indicates that obesity increases risk for cancers of the gallbladder, prostate, ovary, pancreas, thyroid, and cervix, and for multiple myeloma and Hodgkin's lymphoma.[5] In 2003, it was estimated that in the U.S., among persons who have never smoked, being overweight or obese could account for as much as 14% of cancer-related deaths in men and 20% of all cancer-related deaths in women.[6]

Tobacco use, alcohol abuse, and body weight, are important modifiable determinants of cancer risk. Because of their critical importance in overall health, these factors are leading health indicators used by Healthy People (HP) 2020 to measure the health of the nation. The Behavioral Risk Factor Surveillance System (BRFSS) examines these indicators through a series of questions related to tobacco use, alcohol consumption, body weight, and height. Findings were used to assess the prevalence of these risk factors among Marylanders, and to examine whether these risk factors are associated with up-to-date cancer screening behaviors. Up-to-date screening was defined as follows:

Colorectal Cancer: Fecal occult blood test (FOBT) within the past year, a sigmoidoscopy within the past 5 years with or without an FOBT in the past year, or a colonoscopy within the past 10 years among adults age 50 years and older;
Female Breast Cancer: Mammogram within the past 2 years among women age 40 years and older;
Cervical Cancer: Pap test within the past 3 years among women age 21 to 65 years; and,
Oral Cancer: Oral cancer screening exam within the past year among adults age 18 years and older.

Prostate Cancer: While prostate cancer screening with the prostate-specific antigen (PSA) test is not recommended by the U.S. Preventive Services Task Force , many men are still reporting having had that test and we examined its use within the past year among men age 40 years and older.
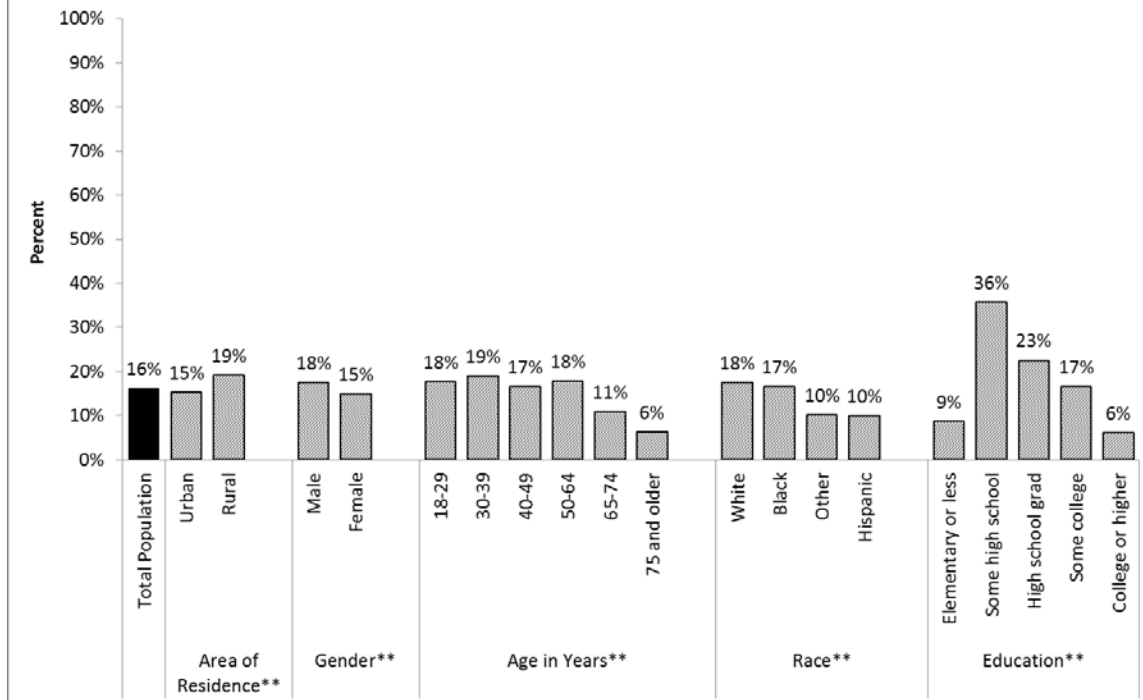
10.1 Tobacco Use

The HP 2020 target is to reduce the proportion of adult cigarette smokers (age 18 years and older) from the U.S. 2008 baseline of 20.6% to 12%.[7] Among Marylanders age 18 years and older, 16% reported they currently smoke, 23% reported they were former smokers, and 60% reported they have never smoked.

When comparing current smokers to non-smokers (former and never smokers combined) significant differences were found for most of the demographic characteristics examined among the Maryland population age 18 years and older (Figure 10-1 and Table 10-1).

- A significantly higher proportion of rural residents (19%) were current cigarette smokers, compared to urban residents (15%).
- A significantly higher proportion of men (18%) were current smokers compared to women (15%).
- The lowest percentages of current smokers were seen in the oldest age groups: 11% of adults age 65-74 years and 6% of those age 75 years and older.
- A higher proportion of whites (18%) and blacks (17%) were current smokers followed by persons of other race (10%) and Hispanics (10%).
- The percent of current smokers was lowest among those with an elementary education or less (9%) and those with at least a college degree (6%). Current smoking was highest among those with some high school (36%).

Figure 10-1. Percentage of Adults Age 18 Years and Older Who are Current Smokers by Demographics Maryland, 2012

Total Population: 16%

Area of Residence**: Urban 15%, Rural 19%

Gender**: Male 18%, Female 15%

Age in Years**: 18-29 18%, 30-39 19%, 40-49 17%, 50-64 18%, 65-74 11%, 75 and older 6%

Race**: White 18%, Black 17%, Other 10%, Hispanic 10%

Education**: Elementary or less 9%, Some high school 36%, High school grad 23%, Some college 17%, College or higher 6%

** p-value < 0.05
* 0.05 ≤ p-value < 0.1
^ p-value ≥ 0.1

10.2 Alcohol Consumption

According to current guidelines of the National Institute on Alcohol Abuse and Alcoholism (NIAAA), men are considered to be heavy drinkers or "at risk" for alcohol-related problems if they consume more than 14 drinks per week, more than 4 drinks in a single day, or engage in binge drinking, while women are considered to be heavy drinkers or "at risk" if they consume more than seven drinks per week, more than 3 drinks in a single day, or engage in binge drinking.[8] The NIAAA has defined binge drinking as a blood alcohol concentration corresponding to consuming five drinks or more for men and four drinks or more for women in a period of about 2 hours.[9]

Two HP 2020 objectives related to alcohol consumption include:[10]

1. To reduce the proportion of adults age 18 years and older who engage in binge drinking during the past month from a national baseline in 2008 of 27.0% to a target of 24.3%; and
2. To reduce the proportion of adults age 18 years and older who drank excessively in the previous 30 days from a national baseline in 2008 of 28.1% to a target of 25.3%.

The BRFSS 2012 included a series of questions about the frequency and amount of alcohol consumed during the past 30 days. Three categories of alcohol consumption were

defined based on the numbers of drinks per week and whether respondents were classified as binge drinkers: non-drinkers, those at low risk for alcohol-related problems, and those at high risk. For this analysis, high-risk drinking was defined as more than 14 drinks in a week for a man and more than 7 drinks in a week for a woman, or engaging in binge drinking. We have defined low-risk alcohol drinkers as those who consume some alcohol, but less than high-risk drinkers.

Forty-four percent (44%) of Maryland adults age 18 years and older were non-drinkers in the 30 days prior to the survey and 38% were low-risk drinkers. Eighteen percent (18%) were classified as high-risk drinkers.

High-Risk Drinking (Figure 10-2 and Table 10-1)

- The proportion of high-risk drinkers in the 30 days prior to the survey was higher among men (23%) compared to women (13%).
- The prevalence of high-risk drinking appeared to decrease with increasing age, ranging from 30% for adults age 18-29 years to 4% among adults age 75 years and older.
- High-risk drinking was more prevalent among whites (21%) than among blacks (14%).
- High-risk drinking was lowest among those with an elementary education or less (7%) and ranged from 16% to 20% in the other education groups.

Figure 10-2. Percentage of Adults Age 18 Years and Older Who are High-Risk Drinkers by Demographics Maryland, 2012
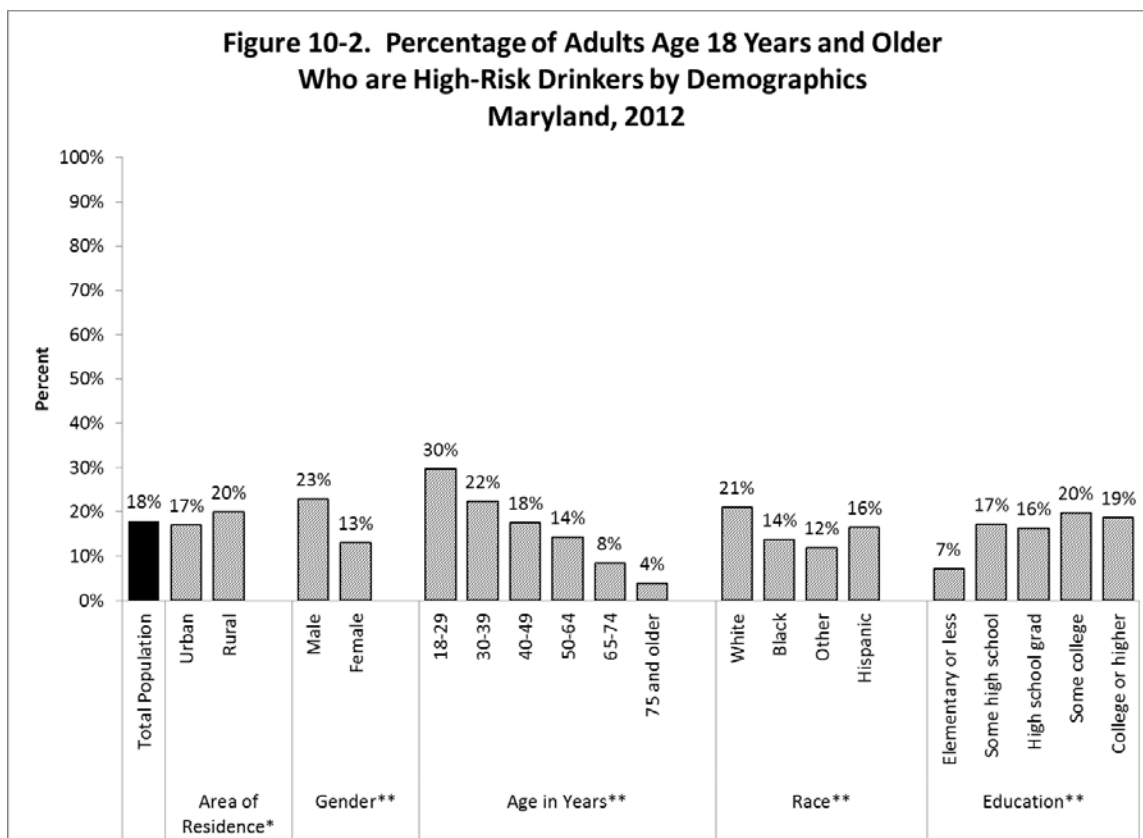
** p-value < 0.05
*   0.05 ≤ p-value < 0.1
^   p-value ≥ 0.1

10.3 Body Mass Index (BMI)

BMI is widely used as an indicator of total body fat, based on an individual's height and weight. BMI is calculated as body weight in kilograms divided by height in meters squared (kg/m^2). The table below shows the BMI ranges generally used as a measure of whether an individual is underweight, at a healthy weight, overweight, or obese.

	BMI range (kg/m^2)
Underweight	Less than 18.5
Healthy	18.5 – 24.9
Overweight	25.0 – 29.9
Obese	30.0 or higher

Reducing the percentage of Americans who are overweight or obese is among the leading health indicators used by HP 2020. One specific HP 2020 target is to reduce the proportion of American adults age 20 years and older who are obese, from a national baseline of 34% in 2005-2008 to 30.6% by 2020. Another HP 2020 target is to increase the proportion of adults age 20 years and older that has a healthy weight, from a national baseline of 30.8% to 33.9%.[11]

In the 2012 BRFSS, participants were asked to provide their height and weight, which was then used to estimate BMI. The following is a summary of BMI distribution among Marylanders age 18 years and older, based on results of the BRFSS 2012 (Table 10-2).

- Thirty-five percent (35%) had a BMI in the healthy range, 37% had a BMI in the overweight range, and 28% had a BMI in the obese range. (107 persons with a BMI in the underweight range were excluded from analysis due to small sample size, as were the 496 persons who did not report a height and/or weight.)
- Sixty-five percent (65%) of Marylanders age 18 years and older can be considered overweight or obese.

BMI differed significantly among respondents, based on several demographic characteristics (Table 10-2).

- A statistically significant lower percentage of men (30%) compared to women (40%) had a BMI in the healthy weight range. Although the prevalence of overweight was significantly higher among men (43%) compared to women (31%), the prevalence of obesity was comparable for men and women (27% vs. 29%).
- A higher percentage of blacks (38%) had a BMI in the obese range than did whites (25%), those of other race (14%), or Hispanics (28%).
- Adults who had attained a college degree or higher had the highest prevalence of healthy weight and the lowest prevalence of obese weight.

Health Care Access and Lifestyle Behaviors (Table 10-3)

Each lifestyle factor (being a current smoker, being a high-risk alcohol drinker, and being overweight or obese) was examined by health care access factors.

- In regards to being a current smoker
    - A higher proportion of adults who do not have health insurance were current smokers (26%) compared to adults who have health insurance (15%).
    - A higher proportion of adults who do not have at least one person they think of as their personal doctor were current smokers (22%) compared to adults who have a personal doctor (15%).
    - As time increased since their last routine check-up, the proportion of current smokers increased.

- In regards to being a high-risk alcohol drinker
    - There was no significant difference in percent of high-risk drinkers between adults who have health insurance (17%) and those who do not (21%).
    - A higher proportion of adults who do not have at least one person they think of as their personal doctor were high-risk drinkers (26%) compared to adults who have a personal doctor (16%).
    - As time increased since their last routine check-up, the proportion of high-risk drinkers generally increased.

- In regards to being overweight or obese
    - There was no significant difference in percent of adults being overweight or obese between those who have health insurance and those who do not (65%).
    - A higher proportion of adults who do have least one person they think of as their personal doctor were overweight or obese (66%) compared to adults who do not have a personal doctor (61%).

Smoking Status and Up-to-Date Cancer Screenings (Table 10-4)

Smoking status was examined in relation to the recommended schedule for up-to-date screening.

- Current smokers age 50 years and older were significantly less likely than non-smokers (i.e., never and former smokers) to be up to date with CRC screening.
- Male smokers age 40 years and older were less likely than non-smokers to have had a PSA test within the past year.
- A lower proportion of current female smokers age 40 years and older reported having had a mammogram in the past 2 years (50%) compared to former smokers (70%). There was no significant different between never smokers (53%) and current smokers (50%).
- Among women age 21 to 65 years, no significant difference by smoking status was found in the proportion screened for cervical cancer by Pap test within the past 3 years.

- A lower proportion of current smokers (18%) reported having had an oral cancer screening test within the past year compared to former smokers (28%) and never smokers (23%).

Alcohol Consumption and Up-to-Date Cancer Screening (Table 10-4)

High-risk alcohol consumption was examined in relation to the prevalence of various types of cancer screening tests. Significant differences in screening prevalence based on alcohol consumption were seen for the following screening tests:

- Low-risk alcohol drinkers reported the highest percent of being up-to-date with CRC screening (73%) compared to non-drinkers (67%) and high-risk drinkers (65%).
- Among men age 40 years and older, the prevalence of having had a PSA test within the past year was lower among high-risk alcohol drinkers (28%) compared to non-drinkers (36%) and low-risk drinkers (43%).
- Among women age 40 years and older, the prevalence of having had a mammogram within the past two years was lower among high-risk alcohol drinkers (46%) compared to non-drinkers (55%) and low-risk drinkers (61%).
- In contrast to the findings above, among women age 21 to 65 years, the prevalence of having a Pap test within the past 3 years was *higher* among high-risk alcohol drinkers (85%) and low-risk alcohol drinkers (84%) compared to non-drinkers (72%).
- The prevalence of oral cancer screening was highest among low-risk drinkers (31%) compared to non-drinkers (17%) and low-risk drinkers (23%).

BMI and Up-to-Date Cancer Screening (Table 10-4)

No significant differences were seen by BMI for being up-to-date with CRC screening, PSA testing in the past year, and Pap testing within the past 3 years. Significant differences in cancer screening tests by BMI were only found for mammography in the past 2 years and oral cancer screening in the past year.

- Those with a healthy weight were found to have the lowest prevalence of mammography in the past 2 years (52%) compared to women who were overweight (61%) and obese (63%).
- Those that were overweight and normal weight were found to have the highest proportion of oral cancer screening tests within the past year (26% and 25%, respectively) and the lowest was among the obese (20%).

[1] U.S. Department of Health and Human Services. How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease report of the Surgeon General Rockville, MD; 2010. Available at http://www.cdc.gov/tobacco/data_statistics/sgr/2010/index.htm. Last accessed November 13, 2013.

[2] Centers for Disease Control and Prevention. Quick Stats: General Information on Alcohol Use and Health. Centers for Disease Control and Prevention. Available at http://www.cdc.gov/alcohol/quickstats/general_info.htm. Last accessed November 13, 2013.

[3] Eyre H, Kahn R, and Robertson RM. Preventing cancer, cardiovascular disease, and diabetes. Diabetes Care 2004; 27(7): 1812-1824.

[4] National Cancer Institute. PDQ Cancer Information Summaries: Prevention. Available at http://www.cancer.gov/cancertopics/pdq/prevention. Last accessed November 13, 2013.

[5] Kushi LH et al. American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention: Reducing the Risk of Cancer with Healthy Food Choices and Physical Activity. CA Cancer J Clin 2006; 56:254-281.

[6] Calle EE et al. Overweight, obesity, and mortality from cancer in a prospectively studied cohort of U.S. adults. N Engl J Med 2003; 348: 1625-1638.

[7] U.S. Department of Health and Human Services. Healthy People 2020. Topics & Objectives. Tobacco use. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=41. Last accessed November 13, 2013.

[8] Dawson DA, Grant BF, Li T. Quantifying the risks associated with exceeding recommended drinking limits. Alcohol Clin Exp Res 2005; 29(5): 902-908.

[9] National Institute on Alcohol Abuse and Alcoholism, NIAAA Newsletter. Winter 2004, Number 2. Available at http://pubs.niaaa.nih.gov/publications/Newsletter/winter2004/Newsletter_Number3.pdf. Last accessed November 13, 2013.

[10] U.S. Department of Health and Human Services. Healthy People 2020. Topics & Objectives. Substance Abuse. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=40. Last accessed November 13, 2013.

[11] U.S. Department of Health and Human Services. Healthy People 2020. Topics & Objectives. Nutrition and Weight Status. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=29. Last accessed November 13, 2013.

TABLE 10-1. SELF-REPORTED CURRENT SMOKING AND HIGH-RISK ALCOHOL CONSUMPTION, AMONG ADULTS AGE 18 YEARS AND OLDER

Selected Characteristic	Current Smoker					High-Risk Drinker				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Total Population	12,456	1,704	16%	15-17%		12,183	1,717	18%	17-19%	
Area of Residence					**					*
Urban	6,860	863	15%	14-17%		6,704	964	17%	16-19%	
Rural	5,596	841	19%	17-21%		5,479	753	20%	17-22%	
Gender					**					**
Male	4,763	699	18%	16-19%		4,648	887	23%	21-25%	
Female	7,693	1,005	15%	13-16%		7,535	830	13%	12-15%	
Age in Years					**					**
18-29	728	138	18%	14-21%		713	210	30%	25-34%	
30-39	1,241	213	19%	16-22%		1,224	248	22%	19-26%	
40-49	2,100	320	17%	14-19%		2,048	376	18%	15-20%	
50-64	4,131	711	18%	16-20%		4,060	576	14%	13-16%	
65-74	2,288	218	11%	8-13%		2,245	219	8%	7-10%	
75 and older	1,798	88	6%	4-9%		1,740	85	4%	3-5%	
Race					**					**
White	8,985	1,241	18%	16-19%		8,801	1,360	21%	20-23%	
Black	2,384	338	17%	14-19%		2,332	228	14%	11-16%	
Other	585	72	10%	6-14%		566	65	12%	8-16%	
Hispanic	321	29	10%	5-15%		316	44	16%	10-23%	
Gender and Race					**					**
White male	3,533	504	18%	16-20%		3,457	703	27%	24-29%	
Black male	756	124	19%	15-24%		739	107	18%	13-22%	
Other male	257	39	13%	6-19%		244	34	14%	7-21%	
Hispanic male	128	16	13%	5-21%		125	26	23%	13-33%	
White female	5,452	737	17%	15-19%		5,344	657	16%	14-18%	
Black female	1,628	214	15%	12-17%		1,593	121	11%	8-13%	
Other female	328	33	8%	3-12%		322	31	10%	5-15%	
Hispanic female	193	13	7%	1-13%		191	18	11%	4-17%	
Education					**					**
Elementary or less	214	33	9%	4-13%		209	13	7%	1-13%	
Some high school	619	181	36%	29-42%		602	56	17%	12-23%	
High school grad or GED	3,281	668	23%	20-25%		3,211	419	16%	14-19%	
College 1-3 years	3,022	495	17%	14-19%		2,957	420	20%	17-22%	
College grad or higher	5,287	325	6%	5-7%		5,173	807	19%	17-21%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
*   0.05 < p-value < 0.10
^ p-value > 0.10

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TABLE 10-2. SELF-REPORTED BODY MASS INDEX BY DEMOGRAPHIC CHARACTERISTICS, AMONG ADULTS AGE 18 YEARS AND OLDER

Selected Characteristic	N	Healthy Weight (BMI 18.5 - 24.9)			Overweight (BMI 25.0 - 29.9)			Obese (BMI ≥ 30.0)			Stat Sig
		n	wt %	95% CI	n	wt %	95% CI	n	wt %	95% CI	
Total Population	11,754	3,870	35%	33-36%	4,398	37%	35-38%	3,486	28%	27-29%	
Area of Residence											**
Urban	6,473	2,223	36%	34-37%	2,455	37%	35-39%	1,795	27%	26-29%	
Rural	5,281	1,647	32%	30-35%	1,943	37%	34-39%	1,691	31%	29-33%	
Gender											**
Male	4,711	1,215	30%	28-32%	2,110	43%	41-45%	1,386	27%	25-29%	
Female	7,043	2,655	40%	38-42%	2,288	31%	29-33%	2,100	29%	28-31%	
Age in Years											**
18-29	647	314	54%	49-59%	190	29%	25-34%	143	17%	13-20%	
30-39	1,157	436	38%	34-42%	409	35%	31-39%	312	26%	23-30%	
40-49	1,995	616	27%	24-30%	736	39%	36-43%	643	33%	30-37%	
50-64	3,936	1,136	27%	25-29%	1,458	38%	36-41%	1,342	35%	32-37%	
65-74	2,200	635	28%	25-31%	904	42%	39-45%	661	30%	27-33%	
75 and older	1,711	693	37%	33-40%	655	41%	37-45%	363	22%	19-25%	
Race											**
White	8,499	2,984	37%	35-39%	3,220	38%	36-40%	2,295	25%	24-26%	
Black	2,268	506	27%	24-30%	815	35%	32-38%	947	38%	35-41%	
Other	545	245	52%	46-59%	184	34%	28-40%	116	14%	10-18%	
Hispanic	292	93	31%	23-38%	115	41%	33-49%	84	28%	21-35%	
Gender and Race											**
White male	3,508	901	30%	27-32%	1,602	45%	42-48%	1,005	25%	23-27%	
Black male	749	173	27%	22-31%	303	38%	33-43%	273	35%	31-40%	
Other male	252	92	46%	36-55%	112	43%	33-52%	48	12%	7-17%	
Hispanic male	120	27	27%	16-38%	61	47%	35-59%	32	26%	15-36%	
White female	4,991	2,083	44%	42-47%	1,618	31%	29-33%	1,290	25%	23-27%	
Black female	1,519	333	28%	24-32%	512	32%	28-35%	674	41%	37-45%	
Other female	293	153	59%	51-68%	72	25%	17-32%	68	16%	10-22%	
Hispanic female	172	66	35%	25-46%	54	35%	24-46%	52	30%	20-40%	
Education											**
Elementary or less	198	62	33%	21-44%	66	37%	25-48%	70	31%	20-41%	
Some high school	596	167	32%	26-39%	191	32%	26-38%	238	36%	29-42%	
High school grad or GED	3,097	883	30%	27-33%	1,151	37%	34-40%	1,063	32%	30-35%	
College 1-3 years	2,835	845	34%	31-37%	1,087	36%	33-39%	903	30%	27-33%	
College grad or higher	5,008	1,907	40%	38-42%	1,894	38%	36-41%	1,207	21%	20-23%	

N = Number of people in the sample who responded to the survey question

n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05

* 0.05 < p-value < 0.10

^ p-value > 0.10

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TABLE 10-3. BEHAVIORAL RISK FACTORS BY ACCESS TO HEALTH CARE, AMONG ADULTS AGE 18 YEARS AND OLDER

Selected Characteristic	Current Smoker					High-Risk Drinker					Overweight or Obese				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Has any kind of health care coverage					**					^					^
Yes	11,555	1,448	15%	14-16%		11,311	1,577	17%	16-19%		10,911	7,299	65%	64-67%	
No	877	252	26%	21-31%		850	139	21%	17-26%		826	574	65%	59-70%	
Could not see doctor in the Past 12 months because of cost					**					*					^
Yes	1,055	323	30%	25-34%		1,032	164	21%	17-26%		994	719	68%	63-73%	
No	11,374	1,378	14%	13-16%		11,126	1,551	18%	16-19%		10,737	7,149	65%	63-66%	
Has at least one person you think of as your personal doctor or health care provider					**					**					**
Yes	11,264	1,436	15%	14-16%		11,037	1,461	16%	15-18%		10,657	7,189	66%	64-68%	
No	1,172	267	22%	19-26%		1,128	255	26%	22-30%		1,077	686	61%	56-65%	
Time since a doctor was last visited for a routine checkup					**					**					**
Within the past year (less than 1 year)	9,979	1,196	14%	13-15%		9,751	1,227	16%	14-17%		9,441	6,461	67%	65-69%	
Within the past 2 years but more than 1 year	1,220	204	18%	15-22%		1,202	224	22%	18-26%		1,150	708	59%	54-63%	
Within the past 5 years but more than 2 years	584	122	25%	18-31%		575	132	28%	22-34%		547	343	60%	53-67%	
5 years or more (including never)	553	152	30%	24-37%		545	113	27%	20-34%		512	305	57%	49-65%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10

TABLE 10-4. UP-TO-DATE CANCER SCREENING BY LIFESTYLE FACTORS

Selected Characteristic	Up-to-Date with CRC Screening					PSA in the Past Year					Mammogram in the Past 2 Years				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Smoking Status					**					**					**
Never smoker	4,204	3,046	70%	68-72%		1672	701	38%	34-41%		4475	3,063	53%	51-56%	
Former smoker	2,991	2,272	73%	71-76%		1272	595	44%	40-48%		2110	1,624	70%	67-73%	
Current smoker	1,016	582	55%	50-60%		401	128	23%	17-28%		988	591	50%	45-55%	
Alcohol Consumption					**					**					**
Non-drinker	4,030	2,764	67%	64-69%		1,256	519	36%	32-40%		3,834	2,635	55%	53-58%	
Low-risk drinker	3,163	2,428	73%	71-76%		1,491	697	43%	39-47%		2,789	2,024	61%	58-64%	
High-risk drinker	871	617	65%	60-70%		539	189	28%	23-33%		825	531	46%	40-51%	
Body Mass Index					^					^					**
Normal weight (18.5-24.9)	2,426	1,724	69%	66-72%		760	308	35%	29-40%		2,587	1,780	52%	49-56%	
Overweight (25.0-29.9)	2,950	2,182	71%	68-73%		1,532	675	39%	35-42%		2,198	1,608	61%	58-65%	
Obese (≥ 30.0)	2,319	1,678	67%	64-71%		995	421	38%	34-43%		2,057	1,460	63%	59-66%	

Selected Characteristic	Pap Test in the Past 3 Years					Oral Cancer Screening Exam in the Past Year				
	N	n	wt %	95% CI	Stat Sig	N	n	wt %	95% CI	Stat Sig
Smoking Status					^					**
Never smoker	4449	3,422	78%	76-81%		2,951	1,016	23%	21-25%	
Former smoker	2091	1,502	77%	74-79%		1,734	643	28%	25-31%	
Current smoker	986	717	79%	74-83%		717	168	18%	13-22%	
Alcohol Consumption					**					**
Non-drinker	3,804	2,629	72%	69-75%		2,467	658	17%	15-19%	
Low-risk drinker	2,779	2,249	84%	81-86%		2,115	882	31%	28-34%	
High-risk drinker	821	675	85%	80-89%		720	262	23%	18-27%	
Body Mass Index					^					**
Normal weight (18.5-24.9)	2,569	1,949	76%	73-79%		1,611	616	25%	21-28%	
Overweight (25.0-29.9)	2,185	1,655	80%	77-82%		1,892	694	26%	23-29%	
Obese (≥ 30.0)	2,050	1,506	79%	76-81%		1,533	422	20%	17-23%	

N = Number of people in the sample who responded to the survey question
n = Number of people answering "yes" to that question or who had that characteristic

** p-value < 0.05
* 0.05 < p-value < 0.10
^ p-value > 0.10