



Colorectal Cancer Disparities in Maryland 2002-2010

Center for Cancer Surveillance and Control
Maryland Department of Health and Mental Hygiene

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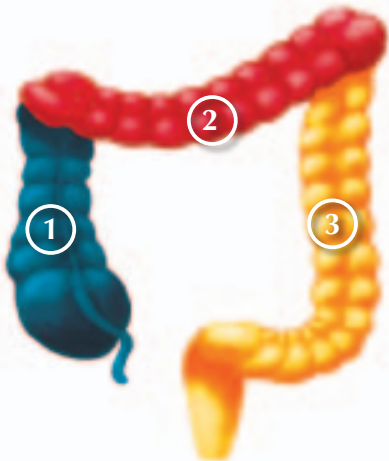
INTRODUCTION

Colorectal cancer (CRC) is the third most commonly diagnosed cancer in Maryland among both men and women, and the second leading cause of cancer-related mortality.¹

The Colon

The colon is a hollow tube-like organ that is connected to the small intestine at the cecum. The colon starts on the lower right side of the abdomen, continues across the top under the ribs, and down the left side of the abdomen, where it ends at the rectum. The colon is divided into three parts: the right colon, transverse colon, and left colon (Figure 1).

Figure 1. Parts of the Colon



1. Right colon: cecum and ascending colon
2. Transverse colon
3. Left colon: descending colon, sigmoid colon, and rectum

Colorectal Cancer (CRC)

CRC is cancer of the colon and rectum. Genetic changes in the normal cells of the colon can cause abnormal cell growth resulting in adenomas, or benign tumors. These adenomas may eventually progress into cancer. Seventy to 90% of CRC is believed to arise from these adenomas.²

Preventing Colorectal Cancer

Maryland has made great progress in reducing incidence and mortality from CRC and in reducing the disparities seen by race and gender. In order to continue these gains, there must be ongoing progress in the areas of primary and secondary prevention and assuring the best quality of care for all residents in Maryland.

Risk Factors

Several risk factors may increase the chance of developing CRC, including:³

- Age (50 years and older)
- Family history of CRC and/or adenomas
- Personal history of adenomas, inflammatory bowel disease (ulcerative colitis or Crohn's colitis), or prior ovarian/endometrial cancer before age 50
- Lifestyle factors including: excessive alcohol intake, sedentary lifestyle, physical inactivity, obesity, and cigarette smoking⁴

The following behaviors that are associated with CRC risk were reported by Marylanders in 2010. Differences were seen by race, gender, income and education:⁵

- A higher proportion of African American or Black males reported being current smokers.
- A higher proportion of White males reported high-risk alcohol consumption.
- A lower proportion of African American or Black females reported being physically active.
- A higher proportion of African American or Black females were categorized as obese.

- Cigarette smoking was highest among those age 18 and older with the lowest incomes (less than \$25,000 per year) and among those with lower education attainment (high school graduate or less).

Primary Prevention

Maintaining a healthy lifestyle is important, not only for the prevention of cancer, but also preventing heart disease, stroke, and diabetes. In 2004, the American Cancer Society, American Heart Association, and the American Diabetes Association supported a common agenda for primary prevention through the maintenance of body mass index (BMI) in the healthy range, tobacco avoidance and cessation, increased physical activity, and diets with increased intake of fruits and vegetables.⁶

Secondary Prevention of CRC through Screening

Screening has been shown to reduce mortality from CRC, either by detecting cancer early or by detecting pre-cancerous adenomas. Currently, screening to detect CRC consists of either viewing the inside of the colon or testing for blood in the stool. The benefits, risks, and frequency of screening depend on the type of screening test. It is recommended that people at higher risk for developing CRC, due to personal or family history, should have colonoscopy screenings earlier and/or more often, at the guidance of their medical providers.

Colorectal Cancer Burden

In 2012, it is estimated that more than 143,000 people will be diagnosed with CRC and 51,000 people will die of the disease in the U.S.⁷

From 2002 to 2008, Maryland has seen a steady decline in CRC incidence and mortality rates (Figure 2).

- CRC incidence decreased 24% and mortality decreased 18% from 2002 to 2008.

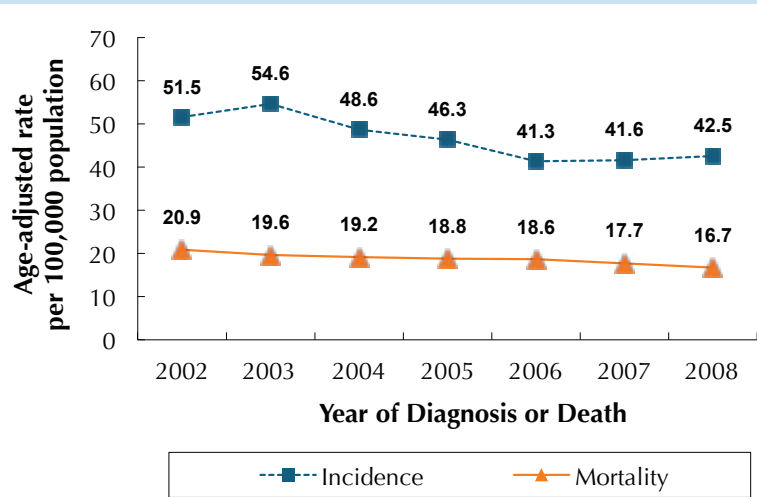
Maryland's ranking for CRC mortality has dropped from 3rd highest in the nation for the period 1993-1997 to 17th highest for the period 2004-2008.

- Maryland reported the largest percentage decrease in CRC incidence rates (6.5% per year) in the country from 2003 to 2007.⁸

Colorectal Cancer Disparities

Not all groups in Maryland have seen the same steady decrease in CRC incidence and mortality; there are **disparities** between population groups. The purpose of this report is to examine the potential disparities in CRC incidence, mortality, and screening and to serve as a guide for CRC prevention and treatment programs in Maryland.

Figure 2. Colorectal Cancer Incidence and Mortality Rates by Year of Diagnosis or Death, Maryland, 2002-2008



Sources: Maryland Cancer Registry (incidence rates)
NCHS Compressed Mortality File in CDC WONDER (mortality rates)

DEFINITIONS

Burden: The impact of colorectal cancer measured by incidence, mortality, morbidity, financial cost, and other factors.

Health Disparity: A particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage.

COLORECTAL CANCER (CRC) DISPARITIES – *ATA GLANCE*

Major improvements have been made in CRC incidence, mortality, and screening in Maryland in the first decade of the 21st century.

Although gaps are closing, disparities by race, gender, and jurisdiction in Maryland can still be identified. Studies have shown there are numerous underlying causes of disparities including access to health care (e.g., health insurance, having a primary care provider, geographic proximity to health care), education, socioeconomic status, and cultural/religious beliefs.

INCIDENCE – *CRC incidence rates in Maryland are decreasing.*

- From 2002 to 2008, CRC incidence decreased among both men and women; however, men continued to have higher incidence rates of CRC than women.
- Marylanders of other race had the lowest incidence of CRC, followed by Whites; African Americans or Blacks had the highest incidence rates.
- From the period 1999-2003 to 2004-2008, there was an overall decrease in CRC incidence rates throughout the state, as well as a decrease in the geographic disparity of CRC incidence rates in Maryland.

MORTALITY – *CRC mortality rates in Maryland are decreasing.*

- From 2002 to 2008, CRC mortality decreased among both men and women; however, men continued to have higher mortality from CRC than women.
- Mortality decreased for both African Americans or Blacks and Whites, but slightly increased among Marylanders of other race.
- From the period 1999-2003 to 2004-2008, the geographic disparity of CRC mortality rates decreased.

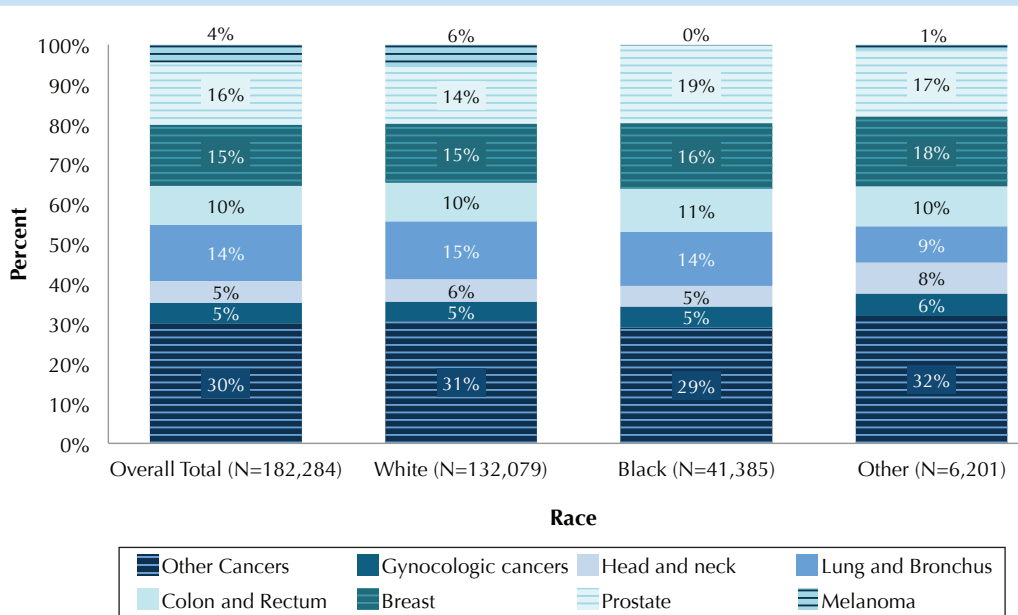
SCREENING – *CRC screening in Maryland is increasing.*

- From 2002 to 2010, the percent of Maryland adults (age 50 years and older) with up-to-date (UTD) CRC screening increased, with a dramatic increase in the percent having an UTD colonoscopy.
- The gap in colonoscopy screening between Whites and African Americans or Blacks was eliminated by 2010.
- In 2010, a lower proportion of people of other race reported UTD screening compared to Whites and African Americans or Blacks.
- Marylanders without health insurance reported much lower screening percentages than those with health insurance.

COLORECTAL CANCER INCIDENCE

In the years 2002 through 2008, there were 182,284 cases of invasive cancers reported to the Maryland Cancer Registry. CRC accounted for 10-11% of these cases (Figure 3).

Figure 3. Distribution of Cancers by Race, Maryland, 2002-2008

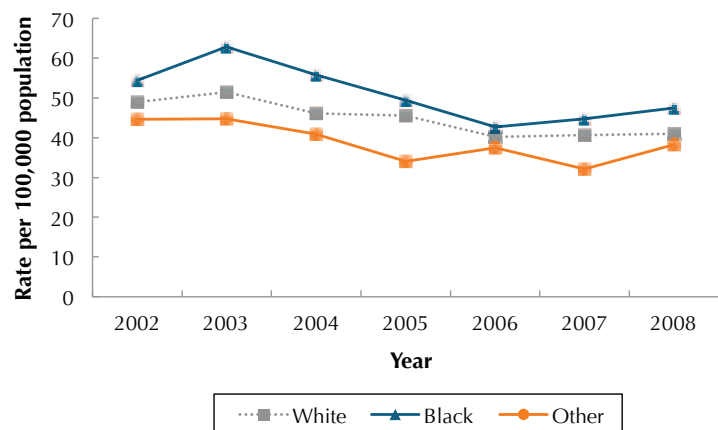


Source: Maryland Cancer Registry

Incidence rates decreased for all race groups from 2002 to 2008:

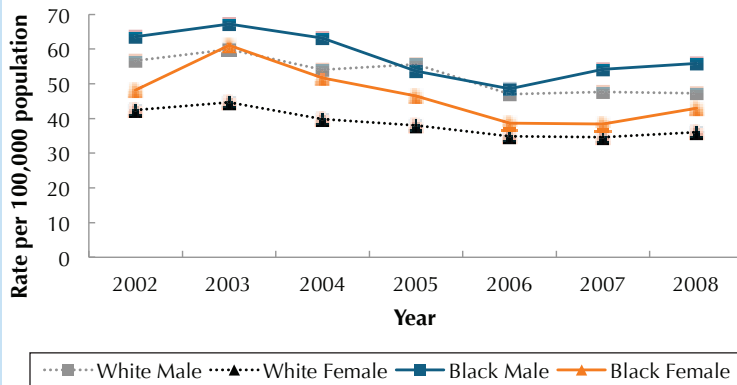
- African Americans or Blacks continued to have the highest incidence of CRC compared to Whites and Marylanders of other race. However, this gap is closing with African Americans or Blacks having the largest percent decrease (26%) for the time period (Figure 4).

Figure 4. Colorectal Cancer Incidence Rates by Race, Maryland, 2002-2008



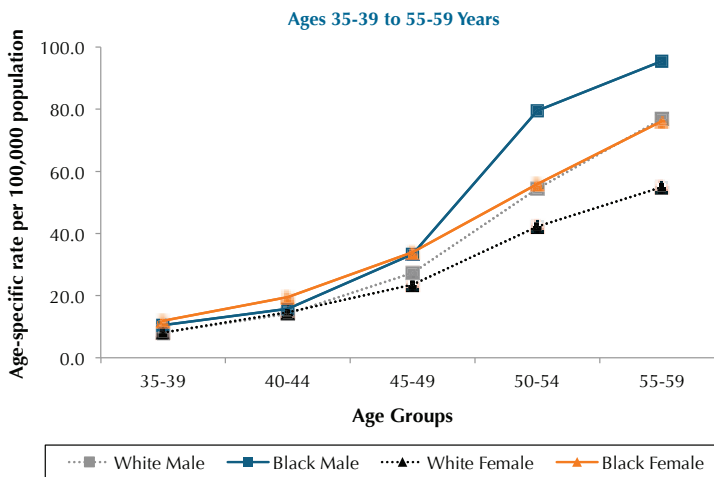
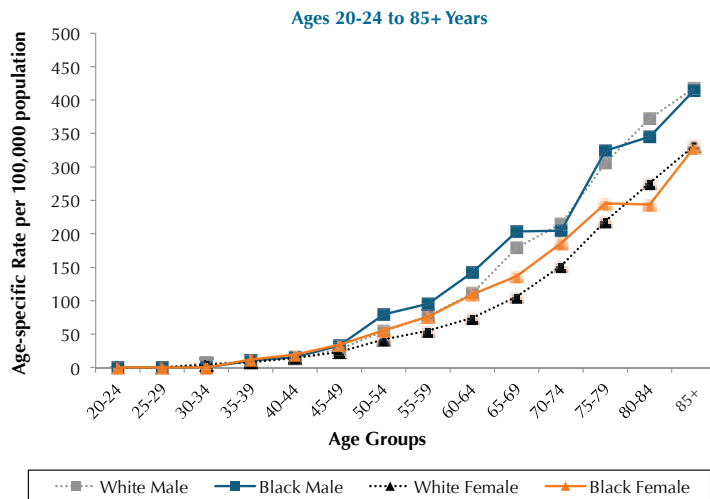
Source: Maryland Cancer Registry

Figure 5. Colorectal Cancer Incidence Rates by Race and Gender, Maryland, 2002-2008



Source: Maryland Cancer Registry

Figure 6. Colorectal Cancer Age-Specific Incidence Rates by Race and Gender, Maryland, 2004-2008



Source: Maryland Cancer Registry

DEFINITIONS

Incidence: The number of people newly diagnosed with colorectal cancer during a specific time period, such as a year or a 5-year period.

Incidence Rate: The number of new colorectal cases during a specific time period divided by the total number of people in the population.

Age-Specific Incidence Rate: The rate of incidence of colorectal cancer for a specific age group (e.g., 55-59), calculated per 100,000 people.

When looking at incidence rates from 2002 to 2008 cross-stratified by race and gender (Figure 5):

- African American or Black males had the highest incidence rates, followed by White males.
- African American or Black females had the greatest percentage decrease in CRC incidence (29%).

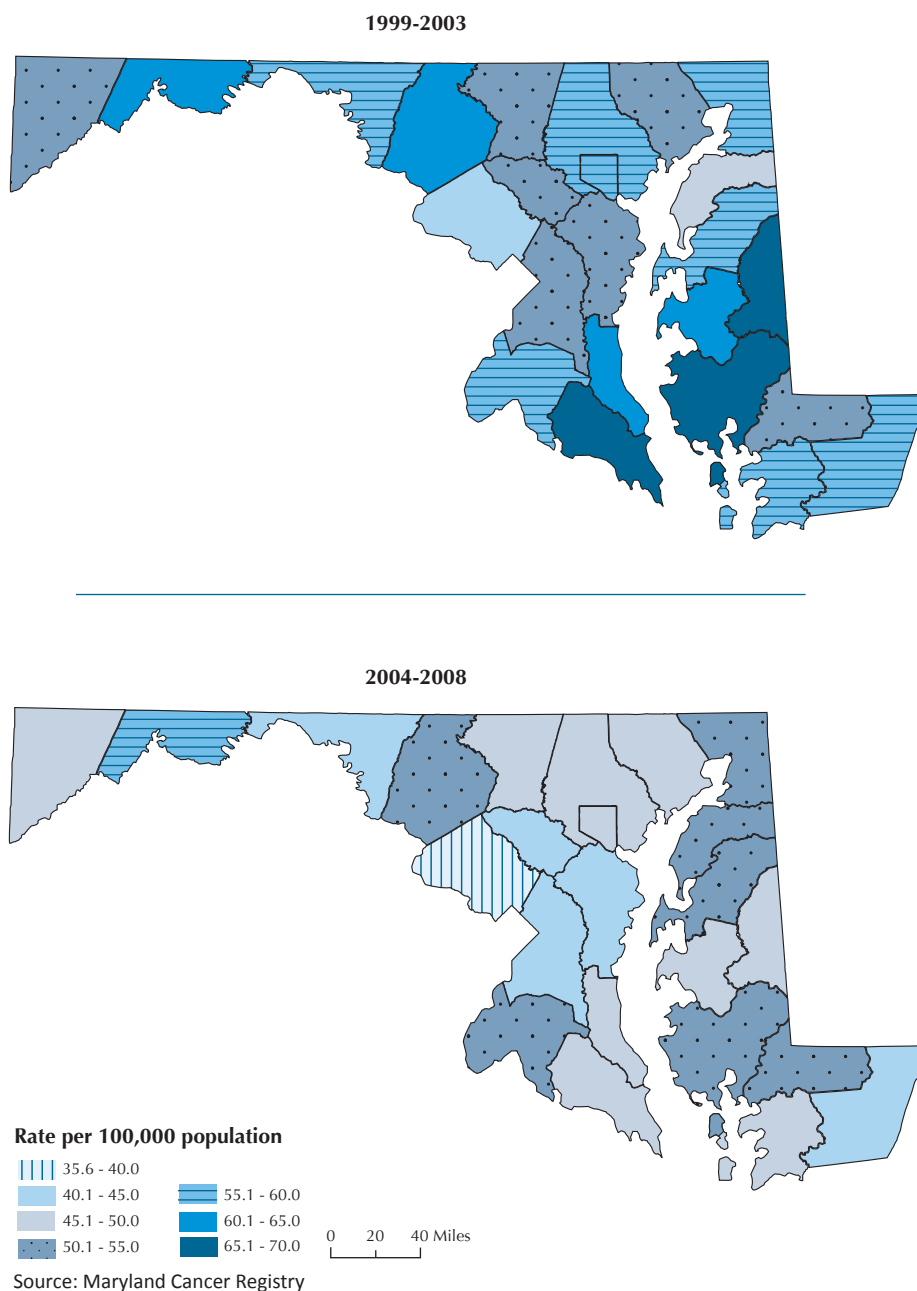
For the period 2004 to 2008, Maryland females had lower **age-specific CRC incidence rates** than males (data not shown).

For the period 2004 to 2008, African American or Black males and females have higher age-specific incidence rates than their White counterparts at an earlier age (Figure 6). This has been seen across the United States as well, resulting in a call for earlier CRC screening for African Americans or Blacks by some professional organizations.

From the period 1999-2003 to 2004-2008, there has been an overall decrease in incidence rates for the majority of jurisdictions in Maryland, as well as a decrease in the variation in incidence across counties (Figure 7). The difference between the counties with the highest and lowest incidence rates decreased between the two time periods.

- For the period 2004-2008, Montgomery County had the lowest incidence rate (35.6 - 40.0 per 100,000 population) and Allegany County had the highest incidence rate (55.1 - 60.0 per 100,000 population).

Figure 7. CRC Incidence Rates in Maryland



COLORECTAL CANCER MORTALITY

From 2002 to 2008, **mortality rates** decreased for whites (20%) and African Americans or Blacks (16%) (Figure 8).

There was a small increase in CRC **mortality** from 2002 to 2008 for Marylanders of other race.

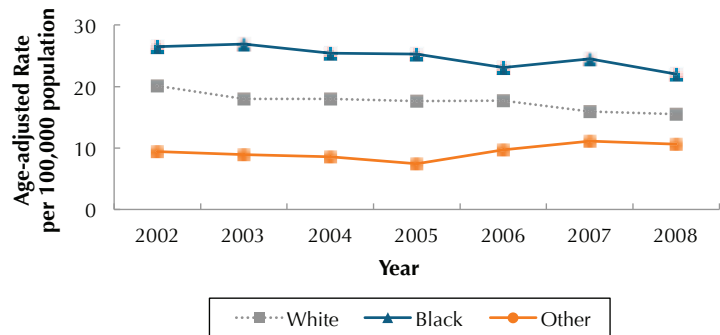
African Americans or Blacks consistently had the highest CRC mortality rates compared to any other race (Figure 8).

- From 2002 to 2008, CRC mortality decreased for White and African American or Black males and females (Figure 9).
- Although there was an overall decrease in CRC mortality for all races and genders, males continued to have higher mortality rates than females, with African American or Black males having the highest CRC mortality rates.
- Over the same period, African American or Black males had the smallest drop in CRC mortality rates over time (10%) compared to White males (17%), African American or Black females (23%), and White females (22%).

For the period 2004-2008, Maryland females had lower **age-specific CRC mortality rates** than males (data not shown).

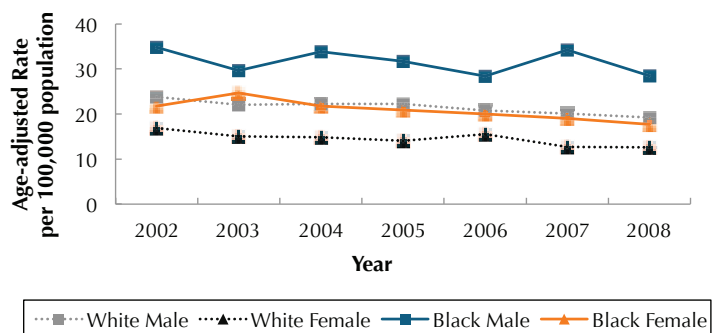
- African-American or Black males had the highest age-specific mortality rates for all age groups and White females had the lowest age-specific mortality rates (Figure 10).

Figure 8. Colorectal Cancer Mortality Rates by Race, Maryland 2002-2008



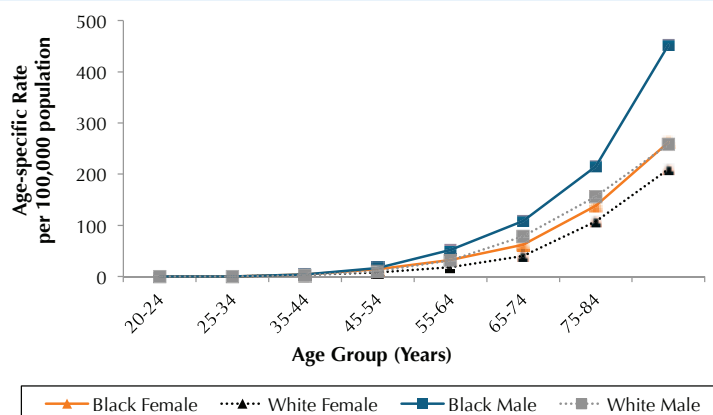
Source: NCHS Compressed Mortality File in CDC WONDER

Figure 9. Colorectal Cancer Mortality Rates by Race and Gender, Maryland 2002-2008



Source: NCHS Compressed Mortality File in CDC WONDER

Figure 10. Colorectal Cancer Age-Specific Mortality Rates by Race and Gender, Maryland, 2004-2008

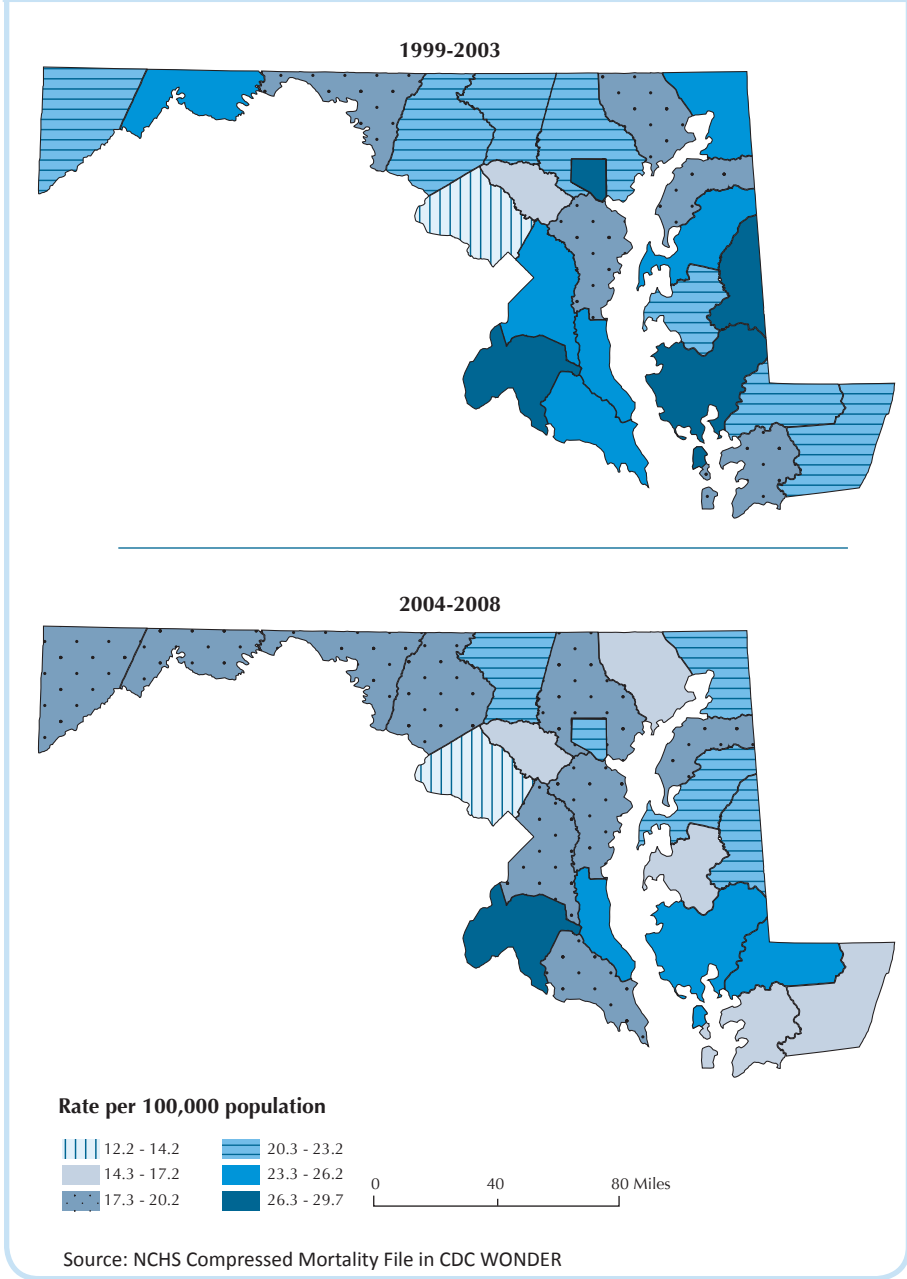


Source: NCHS Compressed Mortality File in CDC WONDER

From the period 1999-2003 to 2004-2008, there was an overall decrease in the mortality rates for the majority of jurisdictions in Maryland, as well as a decrease in the variation in mortality across counties (Figure 11).

- Montgomery County continued to have the lowest mortality rate for both periods.

Figure 11. CRC Mortality in Maryland



DEFINITIONS

Mortality: The number of people who died from colorectal cancer during a specific time period, such as a year or 5-year period.

Mortality Rate: The number of colorectal cancer deaths during a specific time period divided by the number of people in the population.

Age-Specific Mortality Rate: The rate of colorectal cancer deaths for a specific age group (e.g., 55-59), calculated per 100,000 people.

COLORECTAL CANCER SCREENING

CRC **screening** is important for prevention and early cancer detection. There are several CRC screening options.

The most commonly used screening tests are stool blood tests (fecal occult blood test and fecal immunochemical test), colonoscopy, and sigmoidoscopy (Table 1). A person is considered to be up-to-date (UTD) for CRC screening if they have had any of the screening tests described in Table 1 in the prescribed time period; colonoscopy within the past 10 years, sigmoidoscopy within the past 5 years, stool blood testing within the past year, or sigmoidoscopy in the past 5 years and stool blood testing the past year.

The U.S. Preventive Task Force recommends that everyone between the ages of 50-75 years who is at average risk for developing CRC should receive a CRC screening using FOBT, sigmoidoscopy, or colonoscopy. A health care provider can discuss screening options with each patient to determine which test is most appropriate.⁹

Table 1. Commonly Used Colorectal Cancer Screening Tests

Screening Test	Description	Up-To-Date (per American Cancer Society guidelines) ¹⁰
Colonoscopy	A doctor uses a long, flexible, lighted tube to check for CRC or adenomas inside the entire colon and rectum. Suspected adenomas can be removed and sent to a lab for diagnosis.	Every 10 years
Sigmoidoscopy	This test is similar to a colonoscopy except that a doctor can only check for CRC or adenomas inside the rectum and lower third of the colon. Suspected adenomas can be removed and sent to a lab for diagnosis.	Every 5 years
Fecal Immunochemical Test (FIT)	An at-home test kit that a medical provider gives to a patient. Two to three stool samples are collected using a stick or brush and placed on a test card. The sample is sent to a lab. The test uses antibodies to check for blood in the stool.	Yearly
Fecal Occult Blood Test (FOBT)	This test is similar to the FIT except that a chemical, guaiac, is used to detect blood in the stool.	Yearly

DEFINITION

Screening: The performance of a test to check for disease when there are no symptoms, resulting in the detection of pre-cancer or cancer at an early stage.

Along with the decrease in CRC incidence and mortality, there has been a rise in CRC screening in Maryland.

- From 202 to 2010, the percentage of adults, age 50 years and older, who reported being up-to-date for CRC screening by any method increased from 64% to 71%.
- The percentage of adults who reported having been screened with colonoscopy within the past 10 years rose from 41% in 2002 to 66% in 2010 (Figure 12).

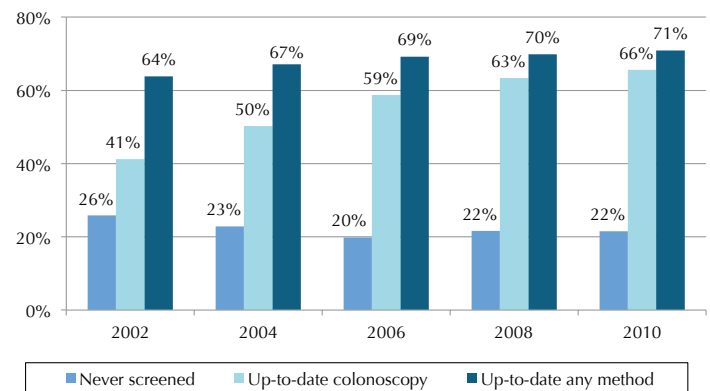
There has been a steady increase in UTD screening by any method for all race groups from 2002 to 2010 (Figure 13).

- There was a 19% increase in UTD screening in African Americans or Blacks; there was also a 24% increase for adults of other race and an 8% increase for Whites.
- While a smaller proportion of adults of other race reported having been screened for CRC, this group had the highest percent increase over the time period, showing improvement.
- The gap in screening between Whites and African Americans or Blacks was eliminated by 2010.

Having access to health care remains one of the key predictors of CRC screening.¹¹ Not having health insurance remains a primary factor in CRC screening disparities.

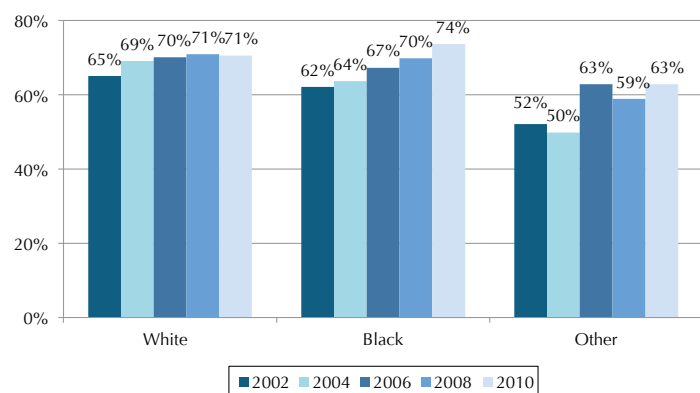
- The proportion of adults who reported never being screened for CRC has been consistently higher among the uninsured in each survey year from 2002 to 2010 (Figure 14).
- There has been a 26% decrease in the proportion of uninsured adults who reported never being screened for CRC by any method. There are a few possible explanations for this trend:
 - The increase in screening among the uninsured may be due to outreach and public health CRC screening programs which have targeted low income and uninsured Marylanders throughout the state.
 - It may also reflect past screening among previously insured Marylanders who have recently lost access to health insurance.

Figure 12. Colorectal Cancer Screening Measures among Maryland Adults Age 50 Years and Older, 2002-2010



Sources: Maryland Cancer Survey (2002-2006)
Maryland Behavioral Risk Factor Surveillance System Survey (2008-2010)

Figure 13. Percentage of Maryland Adults Age 50 Years and Older, who Reported being Up-to-Date with Colorectal Cancer Screening by Any Method by Race, 2002-2012

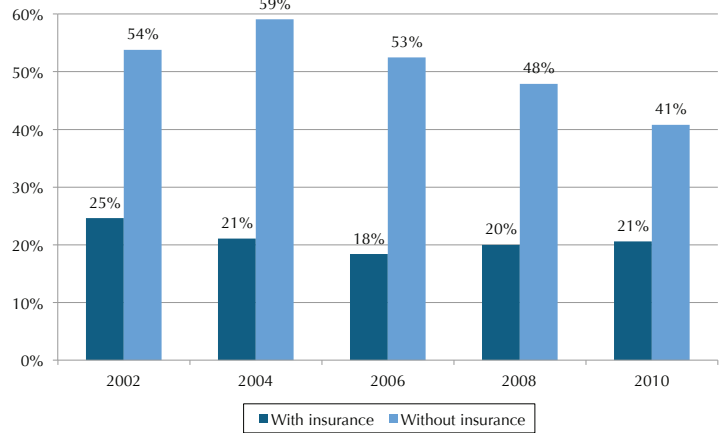


Sources: Maryland Cancer Survey (2002-2006)
Maryland Behavioral Risk Factor Surveillance System (2008-2010)

In 2010, Maryland ranked 6th in the nation for the percentage of adults, age 50-75 years, who reported current CRC screening with either FOBT in the past year, or sigmoidoscopy or colonoscopy within the past 10 years (72.6%).¹²

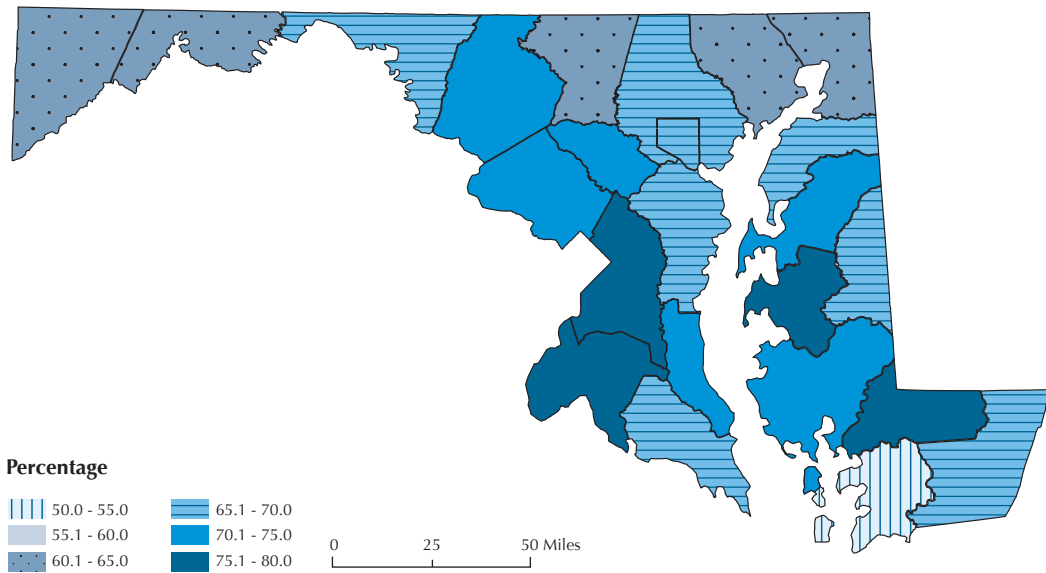
UTD screening results were not uniform throughout the state in 2010 (Figure 15). When surveying persons age 50 years and older in all Maryland jurisdictions, the prevalence of being UTD with any CRC screening method ranged from 51.8 to 79.7% among the 24 jurisdictions.¹³

Figure 14. Percentage of Maryland Adults, Age 50 Years and Older, who Reported Never Being Screened for Colorectal Cancer, by Health Insurance Status, 2002-2010



Sources: Maryland Cancer Survey (2002-2006)
Maryland Behavioral Risk Factor Surveillance System (2008-2010)

Figure 15. Percentage of Population 50 Years and Older Up-to-Date with CRC Screening by Any Method*



*Up-to-Date by Any Method: Fecal Occult Blood Test (FOBT) in the past year, sigmoidoscopy in the past 5 years, a combination of FOBT and sigmoidoscopy, or colonoscopy in the past 10 years.

Source: Maryland Behavioral Risk Factor Surveillance System (2010)

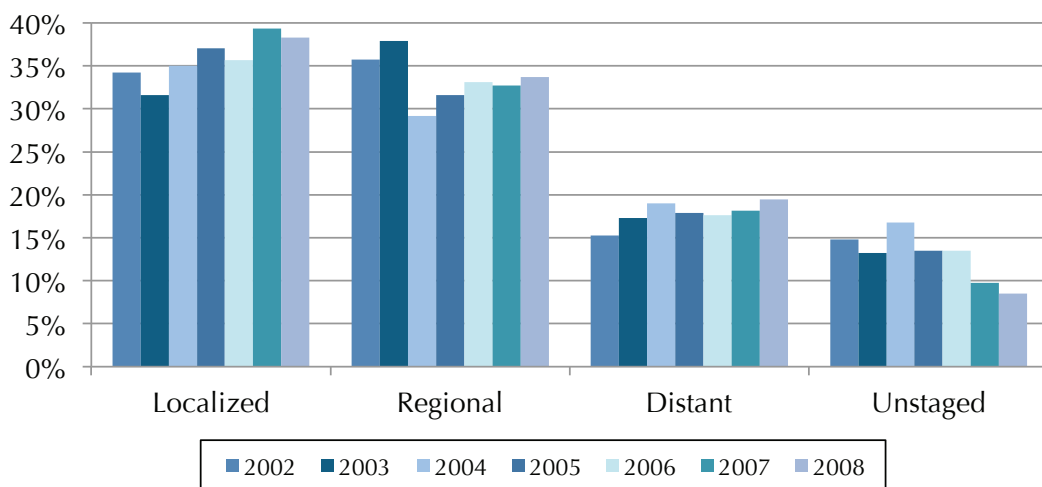
STAGING OF COLORECTAL CANCER

The stage of a cancer describes the extent to which the cancer has spread in the original organ or in the body. Stage can be described in different ways. It is described here as localized, regional, or distant (Table 2). Knowing the stage of a person's CRC is a major factor in determining treatment and prognosis.

Table 2. Description of Colorectal Cancer Stages¹⁴

Cancer Stage	Location
Localized	Colorectal cancer found in the colon or rectum only.
Regional	CRC has spread beyond the colon or rectum to nearby lymph nodes, organs, or tissues.
Distant	CRC has spread (metastasized) from the colon or rectum to distant organs or lymph nodes.
Unstaged	There is not enough information in the record to determine the stage.

Figure 16. Colorectal Cancer Stage, Maryland, 2002-2008

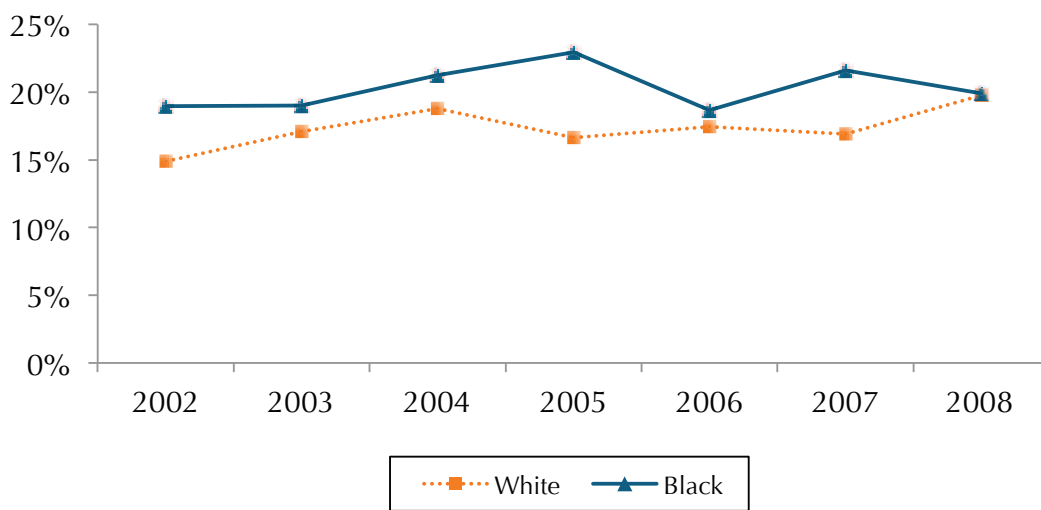


Source: Maryland Cancer Registry

From 2002 to 2008, the reporting of stage to the Maryland Cancer Registry improved, as seen by the decrease in unstaged cancers, from almost 15% in 2002, to less than 9% in 2008.

- During this time period, there was an increase in cancers reported at the localized stage, a decrease at the regional stage, and a slight increase at the distant stage (Figure 16).
- Late stage cancers (regional and distant stage combined) made up over 50% of cancers diagnosed in most years for the period 2002-2008.

Figure 17. Percentage of Colorectal Cancer Diagnosed at Distant Stage by Race, Maryland, 2002-2010



Source: Maryland Cancer Registry

- Both Whites and African Americans or Blacks saw a small increase in the percent of CRC diagnosed at distant stage, with a slightly higher proportion among African American or Blacks than Whites. This disparity appears to be decreasing, with little difference between race in 2008 (Figure 17).

COLORECTAL CANCER TREATMENT

There are several options for CRC treatment. Treatment options depend on several factors, including the location of the cancer, the stage of the cancer, whether the cancer has recurred, and the patient's general health. Table 3 describes some treatment options.

Table 3. Colorectal Cancer Treatment Options¹⁵

Type of Treatment	Description
Surgery	Procedure to remove the cancer in an operation
<i>Partial Colectomy or Hemicolectomy</i>	Surgery to remove part of the colon
<i>Total Colectomy</i>	Surgery to remove all of the colon
<i>Anastomosis</i>	Reconnecting two parts of the colon or a part of the small intestine to the colon after the cancer has been removed
Chemotherapy	Drug treatment to kill cancer cells or to stop them from dividing
<i>Adjuvant</i>	Chemotherapy given after surgery
<i>Neoadjuvant</i>	Chemotherapy given before surgery to shrink the cancer
Radiation Therapy	High-energy radiation is used to kill cancer cells and shrink the cancer
Targeted Therapy	The use of drugs or other substances, such as monoclonal antibodies, to identify and attack specific cancer cells, without harming normal cells

Although there has been limited research on CRC treatment disparities in Maryland, published articles analyzing data from national cancer databases have identified possible treatment disparities in different populations by age, gender, race, and ethnicity.^{16,17}

Among individuals diagnosed with CRC, uninsured individuals and those with Medicaid had lower 5-year survival rates compared to those with private insurance across different races.¹⁸ While this may have been associated with decreased screening and a later stage at diagnosis, differences in survival were noted by insurance status with similar staged cancers.

BARRIERS TO SCREENING AND TREATMENT

Screening

From 2002 to 2010, increases were seen in CRC screening among White and African American or Black males and females in Maryland so that by 2010, little disparity in screening was seen among these four groups. Maryland adults who reported their race other than White or African American or Black continued to lag behind. The difference in self-reported CRC screening between those who have health insurance and those without health insurance decreased over time, though a gap remains. It is known that there are many barriers to CRC screening which may be at the patient, provider, or health system level.

Patient barriers may include: lack of awareness about CRC screening recommendations; lack of a regular health care provider or lack of recommendation for screening by a health care provider; cost of copay or deductible; lack of insurance; difficulty with transportation or taking time off from work; fear of the screening test or of the test results; and language or cultural barriers.

Provider barriers may include: a lack of knowledge about current regulations or not following current best practices; a lack of office reminder systems to ensure that screening is recommended; and the inability to meet the needs of a multicultural practice.

Health care system barriers may include: a lack of medical care or medical home; a lack of funding for uninsured patients who are diagnosed with CRC; a lack of primary-care physicians and medical providers who are able to perform CRC screening; high co-pays and deductibles for the insured; and a lack of medical providers who accept uninsured, Medical Assistance, or Medicare patients.

Barriers to CRC screening are addressed in the Maryland Comprehensive Cancer Control Plan, and strategies for addressing these barriers are included in the *Cancer Disparities* and *Colorectal Cancer* chapters of the Plan. For more information, visit <http://fha.dhmh.maryland.gov/cancer/cancerplan>.

Treatment

While there have been increases throughout the first decade of the 21st century in CRC screening in Maryland, African Americans or Blacks have not achieved the same improvement in CRC mortality rates that have been exhibited in other racial/ethnic groups. Barriers to cancer treatment have been described at the patient, physician, and geographic levels for some cancers and may apply to CRC.

Physician related barriers to treatment:¹⁹

Physician recommendation has been shown to be a strong indicator of the chosen treatment method. However, recommendations may vary based on the physician's age, gender, specialty, and beliefs in the efficacy of care. A 1996 study showed that some physicians delay in adapting to or otherwise do not change their current practice to comply with current cancer treatment guidelines. Additionally, physician-patient communication has been shown to influence a patient's compliance with their care and treatment outcomes.

Geographic related barriers to treatment:²⁰

Cancer treatment may be more available in geographic areas where there are higher numbers of physicians. Based on a 2010 study, seniors were more likely to undergo colon resection and receive appropriate chemotherapy if they lived in an area with more surgeons and medical oncologists.

Existing Maryland Programs to Address Barriers

The Maryland Department of Health and Mental Hygiene (MDHMH) has several initiatives throughout the state to address CRC disparities in order to improve screening rates and lower incidence and mortality. These include:

- ***Cigarette Restitution Fund Program and the Cancer Prevention, Education, Screening and Treatment Program*** (2000-Present) - provides cancer screening and education to low income, uninsured, and underinsured adults.
- ***Maryland Colorectal Cancer Control Program*** (2009-Present) - provides cancer screening and education to low income, uninsured, and underinsured adults in selected counties in Maryland; works with Federally Qualified Health Care Centers to promote screening and implements a CRC media campaign to increase awareness in Baltimore City.
- ***Maryland Comprehensive Cancer Control Plan*** (2011) - addresses a broad range of cancer issues in Maryland and offers information, goals, and strategies to lower the CRC disparity in the state.
- ***Maryland Cancer Fund*** (2004-Present) - provides funding for cancer diagnosis and treatment for low income, uninsured, and underinsured Marylanders.
- ***Minority Health and Health Disparities Minority Outreach and Technical Assistance (MOTA) Program*** (2004 - Present) - provides outreach and technical assistance to minority communities to enhance the efforts of local health departments to decrease the incidence of cancer and cancer deaths and increase the prevention and control of tobacco use in minority communities throughout the State.

It is hoped that these underlying disparities continue to be addressed in Maryland so that the progress we have seen in the recent past will continue. Efforts should be focused on provider education, patient education, and improvement of health care systems including working with health plans to promote and offer screening. Particular attention needs to be focused on those of other race (races other than White and African American or Black) so as to reverse the upward trend in CRC mortality. Maryland should continue to support initiatives designed to eliminate the remaining racial, gender, and jurisdictional disparities observed in CRC.

DATA SOURCES AND METHODS

CRC data used in this monograph were supplied from the following sources:

- Incidence, staging and primary site of CRC data were provided by the **Maryland Cancer Registry (MCR)** - Center for Cancer Surveillance and Control (CCSC), Maryland Department of Health and Mental Hygiene (DHMH). The MCR acknowledges the State of Maryland, the Maryland Cigarette Restitution Fund, and the National Program of Cancer Registries (NPCR) of the Centers for Disease Control and Prevention (CDC) for the funds that helped support the availability of the cancer registry data.
- Maryland and U.S. mortality data presented were obtained from the **National Center for Health Statistics (NCHS)** Compressed Mortality Files in the CDC Wide-ranging Online Data for Epidemiologic Research (WONDER) system.
- Maryland mortality ranking data were obtained from the **Cigarette Restitution Fund Cancer Reports** published annually by the Surveillance and Evaluation Unit (SEU), CCSC, DHMH.
- Maryland CRC screening data were obtained from **Maryland Cancer Surveys (MCS)** for the years 2002, 2004, and 2006. This biennial telephone survey was commissioned by the SEU, CCSC and managed by the Department of Epidemiology and Public Health at the University of Maryland Baltimore School of Medicine.
- Maryland CRC screening data were obtained from the **Behavioral Risk Factor Surveillance System (BRFSS)** surveys for years 2008 and 2010. This survey is managed by the DHMH Family Health Administration, Office of Chronic Disease Prevention.

Changes over time in incidence, mortality, and screening rates were examined by calculating percent differences using trend line analysis and regression equations generated in Microsoft Excel. The regression equations provided estimates that were used to obtain the rates at the extremities of the time period, which were then used to calculate the percent differences for the period.

For this report, race is defined per MCR guidelines; White race and African American or Black race include people of Hispanic ethnicity who also report race as White or Black. "Other" race includes Asian, American Indian and Alaska Native, Hawaiian or other Pacific Islander, Hispanics without a reported race, and multi-race.

GLOSSARY

Age-Specific Incidence Rate: The rate of incidence of colorectal cancer for a specific age group (e.g., 55-59), calculated per 100,000 people.

Age-Specific Mortality Rate: The rate of colorectal cancer deaths for a specific age group (e.g., 55-59), calculated per 100,000 people.

Cancer Stage: The extent to which cancer has spread in the organ or body. There are four cancer stages: local, regional, distant, and unstaged.

Incidence (of Colorectal Cancer): Number of people newly diagnosed with colorectal cancer during a specific time period, such as a year or a 5-year period.

Incidence Rate: Number of new colorectal cases during a specific time period divided by the number of people in the population.

Mortality (of Colorectal Cancer): The number of colorectal cancer deaths during a specific time period, such as a year or 5-year period.

Mortality Rate: The number of deaths due to colorectal cancer within a specific time (such as a year or a 5-year period) divided by the number of people in the population.

Race: A group of people of common descent who share hereditary characteristics. Race definitions, for this report, are based on the Maryland Cancer Registry guidelines:

- White and African American or Black race include people of Hispanic ethnicity who also report race as White or Black.
- Other race includes Asian, American Indian and Alaska Native, Hawaiian or other Pacific Islander, Hispanics without a reported race, and multi-race.

Screening: Performing a test to check for disease when there are no symptoms, resulting in the detection of pre-cancer or cancer at an early stage.

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Maryland Department of Health & Mental Hygiene

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