



CHAPTER 9

# COLORECTAL CANCER

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# COLORECTAL CANCER

Cancer of the colon and rectum (CRC) is the second leading cause of cancer deaths and the fourth leading cause of new cancer cases in Maryland. Maryland's death rate from colorectal cancer is sixth in the United States. It is believed that CRC is caused by a complex interaction of inherited susceptibility and environmental factors.<sup>1</sup> Within the large intestine, genetic changes alter the growth of normal cells to form adenomatous polyps (adenomas). Adenomas are common; they are found in approximately 25% of people by age 50 and the prevalence increases with age.<sup>2</sup> Seventy to ninety percent of CRC is believed to arise from these adenomatous polyps.<sup>3</sup> Overall, about 10.5% of adenomas will progress to CRC; however, 50% of large adenomas (over two centimeters) will progress

to cancer. Adenomatous polyps with villous features are more likely to progress to cancer than those with only tubular pathology (e.g., 20% of villous adenomas and 4% of tubular adenomas will progress). The average time between the development of a polyp and its progression to CRC is 10–15 years.<sup>4</sup>

Ninety-eight percent of CRC is adenocarcinoma.<sup>5</sup> Other malignant tumors of the colon and rectum include carcinoid tumors and lymphomas. The extent of the tumor at the time of diagnosis is the most important factor in predicting survival. SEER stages<sup>6</sup> for CRC used by the Maryland Cancer Registry (MCR) include “local” for tumors that invade to the submucosa or through the muscle (T1-3); “regional” for tumors that are either locally invasive and have spread to adjacent organs or structures or those that have spread to regional lymph nodes; and “distant” for tumors that have spread to distant lymph nodes or other organs, especially the liver, lungs, and bones.<sup>7</sup> “In situ” tumors, in which the cancer is localized to the polyp, are reportable but are not included in the MCR or national CRC statistics. Survival rates five years after diagnosis are 90.1% for local, 65.2% for regional, and 8.8% for distant staged tumors.<sup>8</sup> Survival rates for whites exceed those for blacks for all stages, and the survival rate of cancer of the colon exceeds that of cancer of the rectum.

Because adenomatous polyps are precursors to CRC, removal of these polyps reduces the subsequent incidence and mortality of CRC.<sup>9</sup> The incidence rate of CRC could be reduced by an estimated 70%–90% by the screening and removal of polyps.<sup>10</sup>

## Risk Factors

Certain risk factors may increase the chance of developing CRC, including the following:

### Age

Age is the biggest risk factor for CRC. Of the 2,547 cases of CRC diagnosed in Maryland in 1999, 92.0% were diagnosed in people aged 50 or older.

### Family History

Family history of CRC or adenomas increases a person's risk of colorectal cancer.<sup>11</sup> People with familial adenomatous polyposis (FAP) have a mutation in the APC tumor-suppressor gene and their risk of CRC is almost 100%.<sup>12</sup> Those with hereditary non-polyposis colon cancer (HNPCC) have mutations of human mismatch repair genes and have an 80% or higher risk of CRC by age 70 as well as increased risk of cancers of the endometrium, stomach, ovary, brain, kidney, and biliary tract and gallbladder.

People with two or more first degree relatives of any age or one first-degree relative diagnosed with CRC at less than 50 years of age have three to four times the risk of colorectal cancer than people without first degree relatives with colorectal cancer. Those with one first degree relative with CRC at 60 years or older have almost twice the risk of those without a close family history of CRC.<sup>13</sup> It is estimated that 1% of all CRC occurs in people with FAP, 5% with HNPCC, 15–20% with other family history; and approximately 75% are “sporadic” cases occurring in people with no family or personal history of CRC or adenomas and no personal history of inflammatory bowel disease.<sup>14</sup>

### Personal History

People with a history of CRC, adenomatous polyps, inflammatory bowel disease (ulcerative colitis or Crohn's colitis), or women with prior ovarian or endometrial cancer are at increased risk of CRC. The risk of CRC in people with a history of inflammatory bowel disease is approximately 30% after 10 years. Prior breast cancer appears to confer little<sup>15,16</sup> or no<sup>17</sup> increase in the risk of CRC.

## Other Lifestyle Risks

Other risk factors that increase the risk of CRC include: diets high in fat, protein, calories, alcohol, and meat; diets low in calcium and folate; physical inactivity; obesity; and smoking.<sup>18,19</sup> Factors that have been associated with a lower risk of CRC include postmenopausal hormones and aspirin use.

## Burden of Colorectal Cancer in Maryland

CRC is the fourth leading cause of new cancer cases reported in Maryland (following lung, breast, and prostate cancers, and excluding non-melanoma skin cancer) and the second leading cause of cancer deaths following lung cancer.<sup>20</sup> In 1999, 2,547 people in Maryland were diagnosed with CRC (53.3 cases per 100,000 population, an age-adjusted rate), and 1,059 people died of CRC (22.5 cases per 100,000 population; significantly higher than the U.S. rate of 21.1 cases per 100,000). See Table 9.1 for details.

Maryland ranked sixth in CRC mortality among U.S. states for the time period 1995–1999. Figure 9.1 shows the trend in these cases and deaths from 1995–1999 compared to the U.S. SEER rates. During this period, Maryland had an annual 3.4% decrease in incidence and 3.7% decrease in mortality.<sup>21</sup>

CRC incidence and mortality rates increase markedly with age (Figure 9.2) essentially doubling every decade after the age of 50 years. From 1995–1999, incidence rates declined among men and women of both races in Maryland (Figure 9.3). Incidence rates are higher among men than women and blacks have higher rates than whites for both genders. Mortality rates were highest among black men and were more than twice the rate among white women (37.1 per 100,000 in 1999 vs. 17.8 per 100,000 respectively), with white men and black women having intermediate rates (Figure 9.4). Figure 9.5 shows the colorectal cancer mortality rates from 1995–1999 in Maryland's 24 jurisdictions. Montgomery County had a rate statistically lower than the U.S. rate while eight counties had rates that were statistically higher than the U.S. rate.

In 1999, 30.4% of CRC cases were reported as local stage at the time of diagnosis, 37.8% were regional stage, 17.8% were distant stage, and 14.1% were unstaged. Between 1992 and 1997, 74% of whites had their CRC diagnosed in the local or regional stage com-

**Table 9.1**  
**Colorectal Cancer Incidence and Mortality by Race and Sex**  
**in Maryland and the United States, 1999**

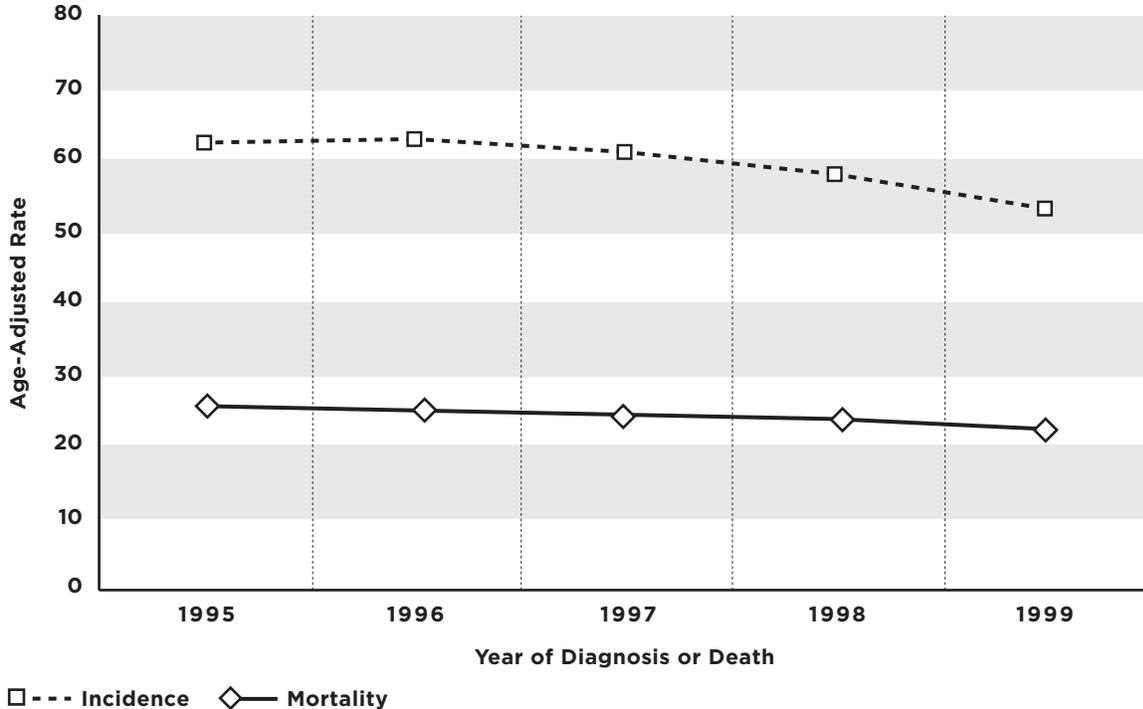
<b>Incidence 1999</b>	<b>Total</b>	<b>Males</b>	<b>Females</b>	<b>Whites</b>	<b>Blacks</b>	<b>Other</b>
New Cases (#)	2,547	1,291	1,256	1,882	540	76
Incidence Rate	53.3	63.4	45.4	50.8	56.4	52.9
U.S. SEER Rate	54.3	63.7	47.1	53.8	61.7	NA
<b>Mortality 1999</b>	<b>Total</b>	<b>Males</b>	<b>Females</b>	<b>Whites</b>	<b>Blacks</b>	<b>Other</b>
MD Deaths (#)	1,059	509	550	763	278	18
MD Mortality Rate	22.5	26.4	19.6	20.6	31.2	**
U.S. Mortality Rate	21.1	25.4	18.0	20.6	28.8	NA

Rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population.

\*\*Rates based on cells with 25 or fewer non-zero cases are not presented per DHMH/MCR Data Use Policy.

Source: Maryland Cancer Registry, 1999; Maryland Division of Health Statistics, 1999; SEER, National Cancer Institute, 1999.

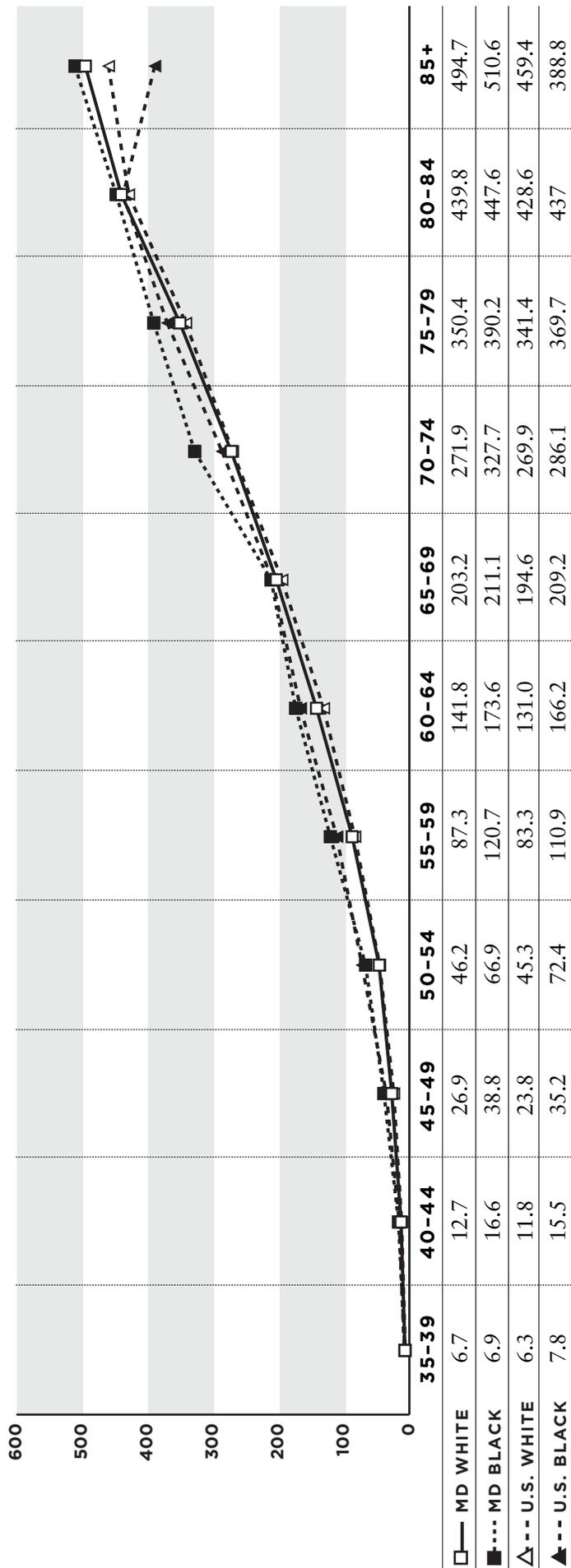
**Figure 9.1**  
**Colorectal Cancer Incidence and Mortality by Year of Diagnosis or Death**  
**in Maryland, 1995-1999**



Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population.

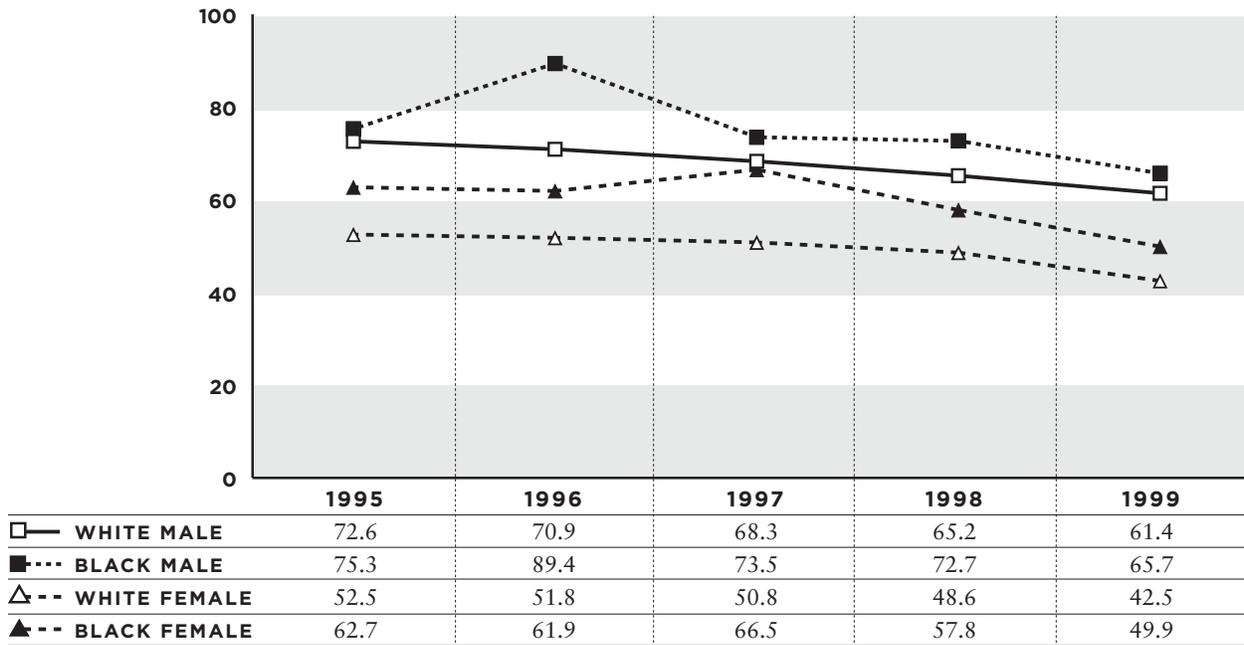
Source: Maryland Cancer Registry, 1995-1999; Maryland Division of Health Statistics, 1995-1999.

**Figure 9.2**  
**Colorectal Cancer Age-Specific Incidence Rates by Race in Maryland and the United States, 1995-1999**



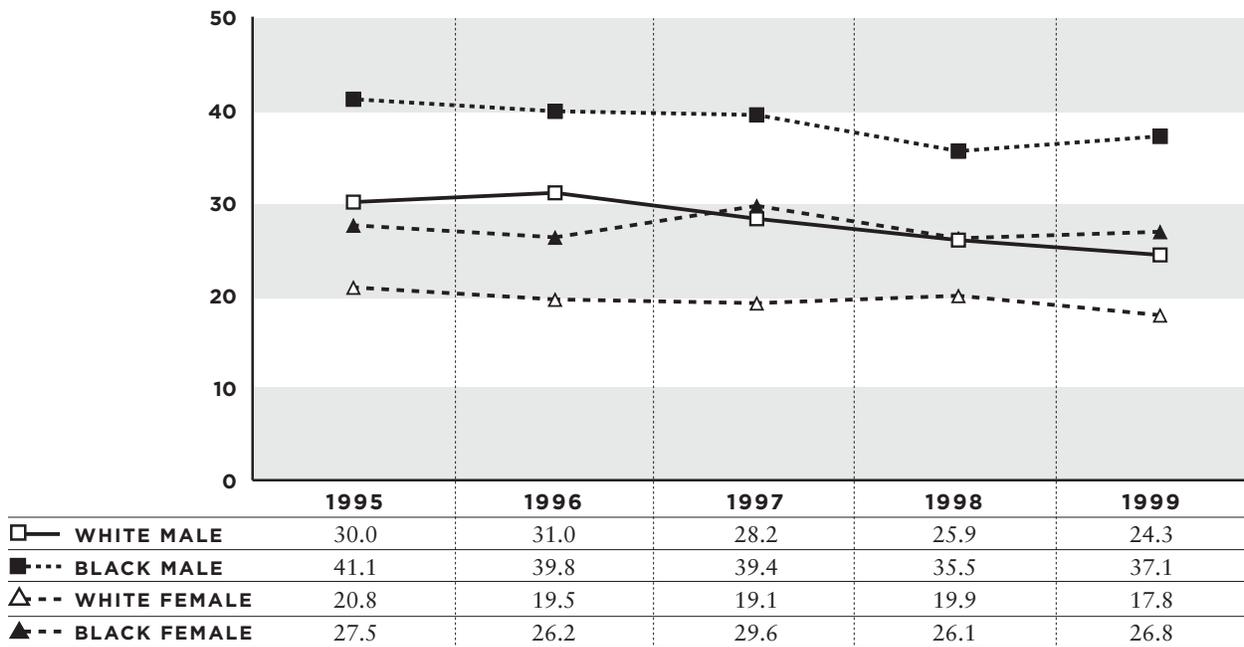
Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population.  
 Source: Maryland Cancer Registry, 1995-1999; SEER, National Cancer Institute, 1995-1999.

**Figure 9.3**  
**Colorectal Cancer Incidence Rates by Race and Sex in Maryland, 1995-1999**



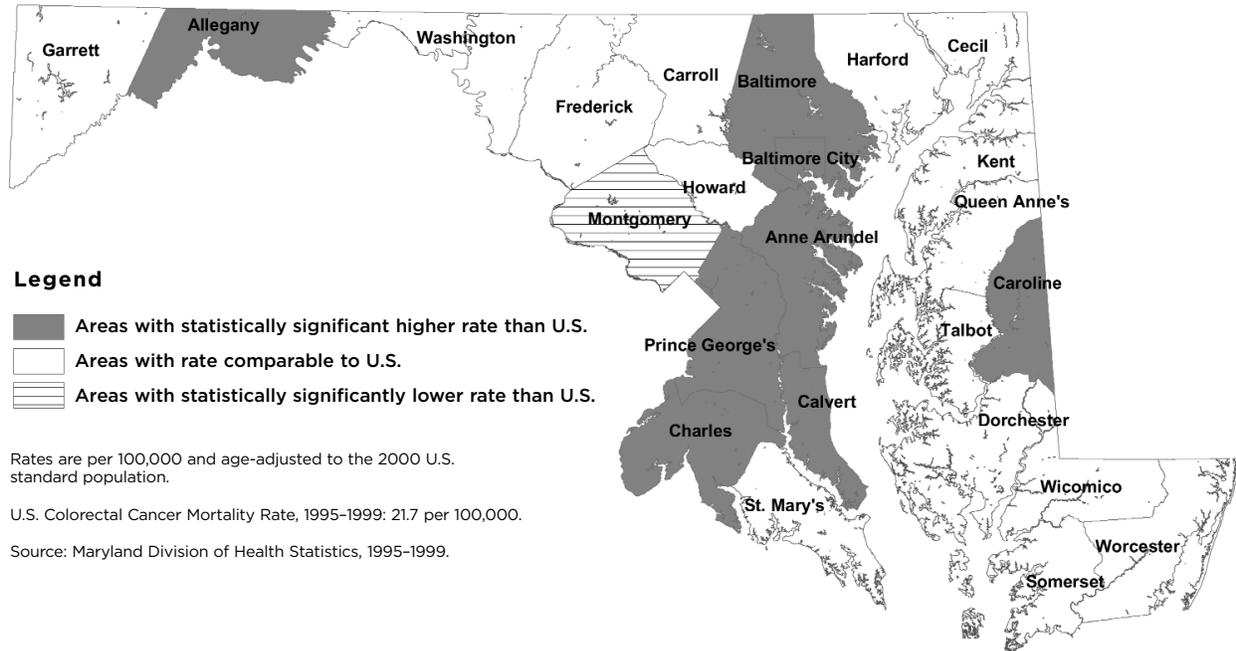
Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population.  
 Source: Maryland Cancer Registry, 1995-1999.

**Figure 9.4**  
**Colorectal Cancer Mortality Rates by Race and Sex in Maryland, 1995-1999**



Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population.  
 Source: Maryland Division of Health Statistics, 1995-1999.

**Figure 9.5**  
**Maryland Colorectal Mortality Rates by Geographical Area:**  
**A Comparison to Rates in the United States, 1995-1999**



pared to 69% of blacks. In contrast, 20% of blacks had distant staged CRC at the time of diagnosis compared to 16.4% of whites. Between 1992 and 1999, cases diagnosed at the local stage accounted for about 35% of all cases that were staged. Local, regional, and distant stage distribution (as a percent of the total cases on whom stage has been reported between 1992 and 1999) is shown in Figure 9.6.

## Disparities

- Black men have the highest death rates from CRC, followed by white men and black women; white women have the lowest rates—approximately half the rate of black men.
- Twenty percent of blacks have CRC that is in the “distant” stage at the time of diagnosis compared to 16.4% of whites.

## Primary Prevention

Primary prevention of colorectal cancer requires adopting behaviors that are believed to lower the risk of colorectal cancer. Certain risk factors for CRC are not modifiable (age, family history, and personal history) while other factors can be modified (weight, diet, and

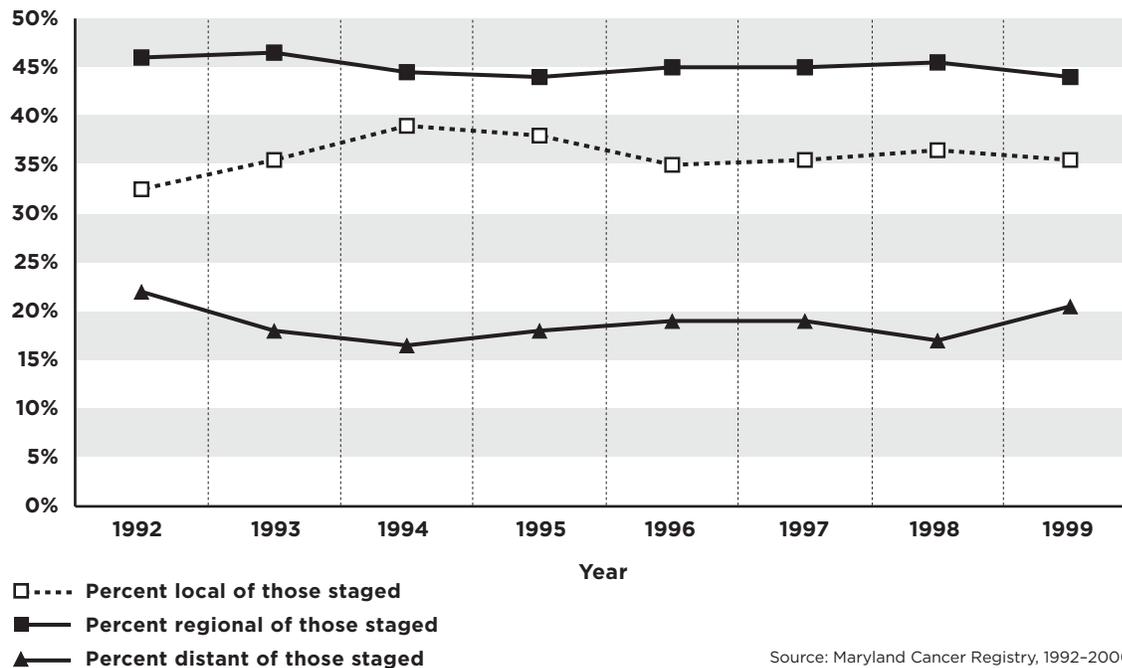
physical inactivity). Additionally, removal of adenomas during colonoscopy is an important primary prevention effort for colorectal cancer.

The current prevalence of CRC lifestyle risk factors in Maryland, including overweight and obesity, inadequate intake of fruits and vegetables, and physical inactivity, are shown in Figure 6.3 in chapter six on diet and physical activity. It is unclear whether adopting lifestyle behaviors that are associated with lower rates of CRC later in adulthood is sufficient to decrease an individual's risk of CRC.

For this reason, primary prevention recommendations for CRC parallel those recommended for prevention of other cancers, cardiovascular disease, diabetes, and other chronic diseases. These include not smoking, being physically active, eating vegetables and fruits, limiting intake of fats, red meat, and alcohol, achieving and maintaining a healthy weight, and consuming enough folate in one's diet or via a supplement.<sup>22</sup> Medications that may lower the risk of CRC, including non-steroidal anti-inflammatory drugs, are under investigation.

Removal of adenomas during colonoscopy is primary prevention because “polypectomy” takes away the precursor lesion of CRC. Therefore, colonoscopy with polypectomy is not just a screening test for cancer or an

**Figure 9.6**  
**Maryland Colorectal Cancer Cases by Stage, 1992–2000**



attempt to obtain early diagnosis. It is in a special category as it is primary prevention as well. Colonoscopy is further discussed under screening, below.

## Screening

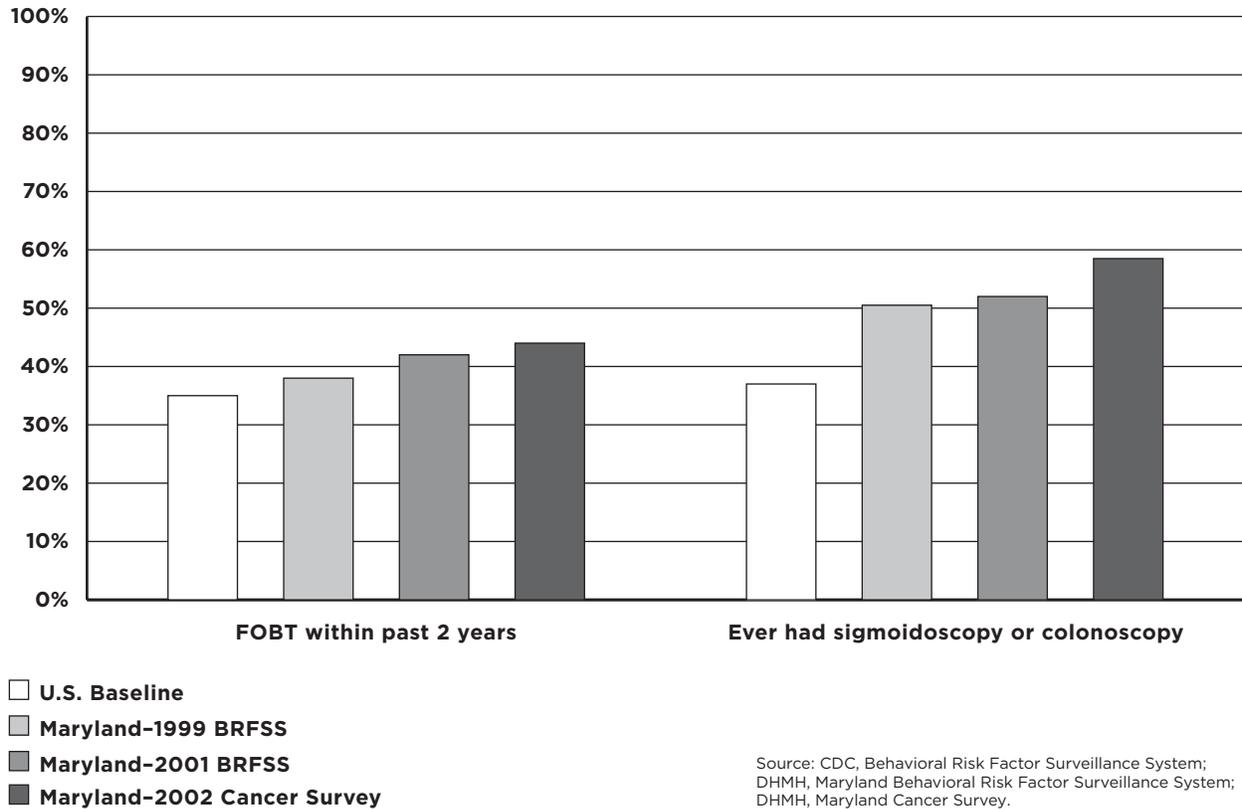
At this time, screening to detect CRC at an early stage consists of either visualizing the inside of the colon or testing for blood in the stool. The colon can be viewed directly either with a colonoscope (a fiber-optic, lighted instrument that views the entire colon from the rectum to the cecum, that is, from the end to the beginning of the large intestine) or a flexible sigmoidoscope (a similar, shorter instrument that views the rectum and descending colon, or, the last third of the colon), or visualized with a double contrast barium enema X-ray exam. During a colonoscopy, any polyp or other suspicious area can be biopsied or removed entirely and sent to the laboratory for diagnosis. Another type of routine testing is the fecal occult blood test (FOBT)—a home test kit that identifies hidden blood in feces samples taken over three days.

The U.S. Preventive Services Task Force,<sup>23</sup> the American Cancer Society,<sup>24</sup> the American College of Gastroenterology,<sup>25</sup> and the American Gastroenterologic Association<sup>26</sup> all recommend screening for CRC begin-

ning at age 50 for those at average risk and earlier for those at increased risk. The Maryland DHMH Medical Advisory Committee concurs and recommends either colonoscopy or FOBT with sigmoidoscopy as the two most effective means of screening people at average risk.<sup>27</sup> The Medical Advisory Committee recommends screening with colonoscopy for those at increased risk. The cost-effectiveness of both methods are similar.<sup>28</sup> All of the above-mentioned groups agree that any form of CRC screening is preferable to *no* screening. Colonoscopy achieves both early detection of cancers and also primary prevention: by removing adenomatous polyps (“polypectomy”), the precursor lesion is no longer present in the colon to progress into CRC.

Factors that influence patients and providers when choosing a screening test include the risks associated with the testing procedure and the test’s accuracy, convenience, and cost.<sup>29,30</sup> These factors differ for each recommended screening procedure. For example, FOBT has been shown to reduce incidence<sup>31</sup> and mortality, is inexpensive, and can be done at home, but it must be done annually and has both false positive and false negative results. Colonoscopy is considered the gold standard because it visualizes the entire colon, and polyps can be removed (or tissue biopsied) during the procedure. However, it requires more preparation, time off from work for the patient, is more expensive, and car-

**Figure 9.7**  
**Percent of Persons Aged 50 and Older Who Have Had CRC Screening**  
**in the U.S. and Maryland**



ries a risk of bleeding and colon perforation, especially when polyps are removed or biopsies are taken.

New screening tests are being evaluated but are not currently recommended for routine use. These include computerized tomography (CT) of the colon, or “virtual colonoscopy,” and genetic testing of feces that identifies the genetic changes common in adenomas and CRC.<sup>32</sup> However, abnormalities found with either of these two tests need to be followed up with colonoscopy.

CRC screening tests are widely available through providers in Maryland. Medicare Part B pays for screening by FOBT annually, for flexible sigmoidoscopy every 48 months, and for colonoscopy once every 24 months if risk is high and once every 10 years (but not within 48 months of a flexible sigmoidoscopy) for those at average risk. A barium enema can be substituted for either of the endoscopy procedures.<sup>33</sup> For Medicare, the client pays 20% of the Medicare-approved amount after the deductible for colonoscopy and 25% of the Medicare-approved amount for sigmoidoscopy if it is done in a hospital’s outpatient department. Maryland

Medical Assistance also covers the cost of screening ordered by a provider. Maryland law (effective June 30, 2001) mandates that health care plans include coverage for CRC screening according to American Cancer Society guidelines.

Figure 9.7 shows the percent of Marylanders aged 50 and over who reported having had an FOBT test within the past two years and at least one colonoscopy or sigmoidoscopy in their lifetime. Both screening methods are increasing.<sup>34,35</sup> In the Maryland Cancer Survey of 2002, 44.4% of respondents reported having had an FOBT in the past two years and 58.2% reported having at least one sigmoidoscopy or colonoscopy in their lifetime; 74.4% of respondents reported having been tested either by FOBT, flexible sigmoidoscopy, or colonoscopy at least once.<sup>36</sup> Minorities were less likely to have been tested. About 63% of the population 50 and over are considered “currently screened” according to the American Cancer Society’s guidelines (FOBT in the past year; sigmoidoscopy in the past five years; FOBT plus sigmoidoscopy, or colonoscopy, in the past 10 years).<sup>37</sup> Of the 25.6 % of people who reported never

**Figure 9.8****Ideal Model for Colorectal Cancer Control: Groups Involved and Their Optimal Features**

<b>Health Education and Promotion</b> (Health Educators, Community Health Workers, Outreach Workers, Media)	<b>Public</b>	<b>Target Population for CRC Screening*</b>	<b>Primary Care Providers</b> (Internist, Family Physician, Gynecologist, Nurse Practitioner, Physician's Assistant, Allied Health staff)
<p>Design new and implement new or existing health risk reduction and health promotion messages.</p> <p>Design and implement messages that are consistent.</p> <p>Use strategies and workers that are targeted to minorities; are culturally sensitive; and are of the same ethnicity/race/language.</p>	<p>Have access to affordable, "good" diet.</p> <p>Receive primary prevention messages: specific to CRC or general "Healthy Lifestyle" messages through multiple channels.</p> <p>Eat a "good" diet, exercise, don't use tobacco products.</p> <p>Receive public information about disease, risk factors (including age), screening recommendations, and availability of programs for low income, uninsured residents, minority populations.</p> <p>Participate in community-based participatory research (surveys, focus groups).</p>	<p>Aware of need for screening; knows current recommendations.</p> <p>Motivated for screening; myths and fears dispelled.</p> <p>Arrive at informed decision to be screened and requests screening.</p> <p>Have insurance or funding to pay for screening.</p>	<p>Sensitive to patients of all races, ethnicities, national origins, cultures, and socioeconomic status.</p> <p>Able to see non-English-speaking patients.</p> <p>Understand importance of screening and knows current recommendations.</p> <p>Decide on the "screening scheme" for the office practice.</p> <p>Determine referral sources.</p> <p>Take adequate history.</p> <p>Arrive at informed decision on best screening for the patient.</p> <p>Clear patient for needed procedures.</p> <p>Screen (FOBT, flex sig) and/or send to specialists for screening (colonoscopy, DCBE).</p> <p>Develop FOBT in office or in reference lab.</p> <p>Inform patient of results and provides appropriate recommendations.</p> <p>Have reminder/recall/tickler system(s).</p> <p>Receive payment from insurance or other funding source to pay for consult and screening.</p>

**Specialists**

(Gastroenterologist,  
Surgeon, Radiologist,  
Pathologist)

Accessible in sufficient numbers in each jurisdiction to perform needed procedures.

Sensitive to patients of all races, ethnicities, national origins, cultures, and socioeconomic status.

Able to see non-English-speaking patients.

Perform sigmoidoscopy, colonoscopy, double contrast barium enema as optimal screening and/or diagnostic procedure(s).

Perform additional biopsies or procedures at time of colonoscopy to remove adenomatous polyps and/or cancers.

Send biopsies to pathologist.

Read by pathologist and report results to referring doctor.

Inform patient and/or provider/health department of results and recommendations.

Receive payment from insurance or other funding source to pay for consult and testing.

**Treatment Team**

(Surgeon, Oncologist,  
Radiation Oncologist,  
Case Manager, Patient  
Navigator, Social Worker,  
Home care, Hospice)

Sensitive to patients of all races, ethnicities, national origins, cultures, and socioeconomic status.

Able to see non-English-speaking patients.

Guide patient through system overcoming barriers of language, understanding, transportation, form completion, application for insurance, etc.

Remove tumor; stage cancer, as appropriate.

Know best treatment.

Treat with most appropriate therapy.

Refer patients for clinical trials, as appropriate.

Provide follow-up care as needed.

Receive payment from insurance or other funding source to pay for consult and treatment services.

**Researchers**

(Basic research,  
translational research,  
community-based  
participatory research,  
and provider surveys)

Focus research on:  
basic science of CRC, primary prevention and chemoprevention of CRC, patient and provider behavior change, new screening tests and their acceptability, and treatment of CRC.

having been screened for CRC, 87.9% reported having had a physical examination in a provider's office within the preceding two years.<sup>38</sup> Therefore, CRC screening opportunities were missed.

## Ideal Model for Colorectal Cancer Control

Figure 9.8 shows the Ideal Model for Colorectal Cancer Control, detailing primary, secondary, and tertiary prevention. Central to this model is screening those who are 50 years and older and those of any age who are at increased risk (i.e. significant family history/personal history of colorectal cancer or adenomatous polyps, or a personal history of inflammatory bowel disease [ulcerative colitis or Crohn's colitis], or endometrial or ovarian cancer). Health education and promotion, community-based participatory research, basic colorectal cancer research, the availability of screening, and payment for outreach and health care must be combined to promote and support colorectal cancer screening. Primary care providers (internists, family physicians, and gynecologists) play a key role in the Ideal Model by recommending and referring patients for screening and by helping to change patient attitudes and behaviors in a culturally sensitive manner.

## Barriers to Colorectal Cancer Screening

The Colorectal Cancer Committee identified the following barriers to screening:

### Patient issues

- Lack of knowledge about CRC and screening recommendations; inconsistent messages about screening
- Lack of health insurance or a primary medical provider
- Mistrust of the health care system
- Confusion between various colonic "treatments" available over the counter (e.g., enemas, laxatives, nutrition products) and CRC screening
- Fear of knowing the results of screening
- Fear of the procedure(s)
- Lack of transportation, inability to take time off from work for screening, and other practical barriers

- Misconception that cancer is a uniformly fatal diagnosis and that screening is therefore not useful

### Provider issues

- Confusion by providers over which screening strategy to recommend
- Lack of knowledge or confusion about persons who carry "increased risk" for colorectal cancer
- Lack of consistent messages by providers to patients about screening recommendations and follow-up
- Lack of providers who do colonoscopy and sigmoidoscopy
- Language and cultural barriers in provider offices
- Lack of providers, especially providers who will see low-income clients or clients who have Medical Assistance

### Other issues

- Not all patients who have health insurance coverage for CRC screening are getting screened
- Health insurance, including Medicare, may not fully cover the CRC screening method chosen by the doctor and patient
- Insufficient funding for screening those who are low-income and un- or underinsured, especially in Baltimore City
- Funding is not available to pay for diagnosis and treatment for all people with colorectal cancer who have no health insurance

## Current Efforts

Maryland Cigarette Restitution Funds were awarded to state counties in fiscal year 2001 for public health cancer prevention programs, and to the University of Maryland Medical Systems and the Johns Hopkins Institutions for Baltimore City. With this new funding, the 23 counties (excluding Baltimore City) focused on colorectal cancer with two goals: to decrease mortality and to reduce racial disparities. Locally controlled programs, designed in conjunction with their local community health coalition, began outreach and education for all residents and started CRC screening for those who met local income and insurance eligibility guidelines. Programs reported data to the DHMH Internet-based education database and submitted client screening data report forms.

By March 24, 2003, during the first 27 months of the program, local programs hired staff and contracted with numerous community-based and faith-based organizations. Together they provided CRC direct education or outreach to over 120,000 residents, 5,000 health care providers, and 500 trainers. Additionally, Marylanders were informed about CRC and screening through television, radio, newspapers, public service announcements, distribution of printed materials, billboards, and health fairs, among other media.

By January 14, 2004, over 11,000 Marylanders had been screened for CRC through the CRF program. Some local programs performed fecal occult blood tests. In the first two years of the program 6,791 residents of any income or insurance status were tested with FOBT and 9% were positive. For low-income, uninsured, or underinsured residents, the programs contracted with providers and paid for 113 sigmoidoscopies and 4,238 colonoscopies. 43% of those screened were racial and/or ethnic minorities. Adenomatous polyps were found on 832 (19.6%) of these colonoscopies and 54 cases of CRC were identified. Screening in the private sector also increased however, and local programs reported difficulty in enrolling men into screening.

In addition to the CRF programs in Maryland, a number of national educational efforts have begun. The federal Centers for Disease Control and Prevention (CDC), with its partner, the Center for Medicare and Medicaid Services (CMS), launched its Screen for Life program in March 1999 that focused on CRC.<sup>39</sup> The American Cancer Society launched its Ambassador and Ally programs targeting CRC screening, and in 2002 initiated its “Polyp Man” advertising campaign aimed to extend the “get tested for colon cancer” message. In addition to the ads, the program includes public education, clinical peer-to-peer communication, and community-based outreach activities. In Baltimore City, the American Cancer Society funded a demonstration project entitled East Baltimore’s Bridge to Better Health that sought to gain a better understanding of the barriers that have contributed to higher incidence and mortality from cancer, in particular colorectal cancer, and collaborate with residents to develop strategies to overcome them. As a result of this initiative, Baltimore City residents have developed targeted educational messages, presentations, and materials in order to increase the number of people who are aware of, and utilize, available screening opportunities. Finally, the Cancer Research and Prevention Foundation has declared March as National Colorectal Cancer Awareness Month.

## Healthy People 2010 Objectives

The following are the Healthy People 2010 objectives<sup>40</sup> related to colorectal cancer:

### Objective:

Reduce the colorectal cancer death rate to 13.9 per 100,000 population.

The U.S. baseline was 21.1 per 100,000 in 1998 (age-adjusted to the 2000 U.S. standard population).

### Objective:

Increase the proportion of adults who receive a colorectal cancer screening examination:

- Increase the proportion of adults aged 50 years and older who have received a fecal occult blood test (FOBT) within the preceding 2 years to at least 50%.

The U.S. baseline was 35% in 1998 (age-adjusted to the 2000 standard population).

- Increase the proportion of adults age 50 years and older who have ever received a sigmoidoscopy or colonoscopy to at least 50%.

The U.S. baseline was 37% in 1998 (age-adjusted to the 2000 standard population).



## Colorectal Cancer Goals, Objectives, and Strategies

### Goals:

Reduce colorectal cancer mortality.

Reduce disparities in the incidence and mortality of colorectal cancer.

### Targets for Change

By 2008, reduce the colorectal cancer mortality to a rate of no more than 20.8 per 100,000 persons in Maryland.

The Maryland baseline was 23.9 per 100,000 in 2000 (age-adjusted to the 2000 U.S. standard population).

Source: Maryland Division of Health Statistics.

By 2008, decrease the percentage of Marylanders aged 50 and over who have never been screened for CRC to 15% or less.

The Maryland baseline was 25.6% in 2002.

Source: Maryland Cancer Survey.

By 2008, increase the percentage of Marylanders aged 50 and over who are up to date with screening (per ACS guidelines) to 73% or more.

The Maryland baseline was 63% in 2002.

Source: Maryland Cancer Survey.

By 2008, increase the percentage of Marylanders aged 50 and over who have been screened with either colonoscopy in the past 10 years or FOBT in the past year, plus flexible sigmoidoscopy in the past 5 years, to 57% or more.

The Maryland baseline was 47% in 2002.

Source: Maryland Cancer Survey.

### Objective 1:

Increase the rate of screening for colorectal cancer of those aged 50 and older by increasing the public's knowledge of colorectal cancer risk factors, symptoms, screening recommendations, and options.

### Strategies:

1. Develop "appropriate" messages and use appropriate educational channels for CRC screening recommendations. Messages should be available in various languages and should reach both sexes those of different racial, ethnic, and cultural backgrounds, and those with varying literacy levels.
2. Specifically target these messages to people aged 50 and older and to those at increased risk (i.e. those with a family history of CRC or adenomatous polyps in first degree relatives and those with a personal history of inflammatory bowel disease, endometrial cancer, or ovarian cancer).
3. Disseminate information about the availability of insurance coverage for CRC screening.
4. Educate and encourage the public to ask their health care providers about CRC screening and to ask their health insurers about coverage for such screening.
5. Use role models, cancer survivors, community groups, and people who have been screened to reach target audiences.
6. Evaluate the effectiveness of educational messages.
7. Measure the public's knowledge, attitudes, beliefs, and practices through the Maryland Cancer Survey and BRFSS (e.g., by adding/modifying questions as needed), focus groups, surveys of outreach workers, etc.



**Objective 2:**

Clarify myths and dispel fears about colorectal cancer related to appropriate screening and prevention methods.

**Strategies:**

1. Develop a committee to focus on education and information that will explore myths, perceptions, and facts surrounding CRC, and methods to dispel myths.
2. Support educational messages that dispel myths identified in focus groups or by outreach workers.
3. Use role models, cancer survivors, community groups, and people who have been screened to reach target audiences.
4. Establish “Patient Navigators” in community-based organizations to help dispel myths, give factual information, and overcome language, literacy, and cultural barriers.

**Objective 3:**

Increase the knowledge of primary care providers (including family physicians, internists, and gynecologists) of appropriate colorectal cancer screening recommendations, and increase the proportion of providers who recommend or provide screening for colorectal cancer.

**Strategies:**

1. Examine the current knowledge, attitudes, beliefs, and practices of providers.
2. Support collaboration among community organizations and programs to have one consistent message regarding screening.
3. Develop, promote, and evaluate appropriate messages regarding CRC screening recommendations for providers to share with their patients. For example:

- Discuss CRC screening with every patient aged 50 years and older and those at risk.
  - Discuss available screening methods.
  - Support colonoscopy as the method of choice for all who have no identified contraindications.
  - Discuss informed consent when discussing screening.
  - Make information accessible to those with low literacy levels and those with cultural and linguistic barriers.
4. Offer continuing medical education (CME) credits for education on CRC.
  5. Discuss CRC at MedChi and other medical and nursing association meetings and conferences.
  6. Develop a risk assessment tool to help providers and patients choose the most appropriate screening test.
  7. Develop CRC screening reminder systems for provider offices.
  8. Develop communication formats to convey the message and the meaning of informed decision-making.
  9. Use role models or real-life examples of how practices have increased screening rates among their clients.
  10. Encourage providers to volunteer as “test cases” for record review to monitor their implementation of CRC screening.
  11. Monitor providers by adding CRC screening as a HEDIS (Health Plan Employer Data and Information Set) measure.

**Objective 4:**

Increase the trust of the public in the health care system.

**Strategies:**

1. Involve community groups to spread the message about the importance of early screening.
2. Use role models, cancer survivors, and outreach workers to target minority or other underserved populations for screening. Utilize people who were successfully screened in this effort.
3. Use members of the community in planning and implementing CRC education and screening programs.
4. Hold a public forum for health care providers, insurers, and the community regarding CRC.
5. Involve the clergy, Ministerial Alliance, community-based organizations, and provider groups, such as the Monumental Medical Society, in developing and delivering educational messages about CRC.

**Objective 5:**

Promote health insurance coverage for colorectal cancer screening methods that are appropriate for each individual.

**Strategies:**

1. Amend Maryland's current legislation to make it explicit that insurers should cover the screening procedure that a health care provider orders.
2. Distribute information on the cost-benefit of screening to CEOs of health insurance agencies, legislators, and decisionmakers of benefits packages for large groups.
3. Encourage patients to advocate for insurance coverage of CRC screening when negotiating for health benefits (e.g., when union contracts are negotiated).
4. Work to encourage and support top management and businesses that provide screening coverage as part of health insurance packages.

**Objective 6:**

Overcome barriers to screening, including difficult pre-procedure colonic preparation, transportation issues, scheduling and timing issues including conflict with work schedules, living alone, etc.

**Strategies:**

1. Have patient advocates and case managers within local health departments, community-based organizations, churches, and hospitals assist with overcoming barriers.
2. Provide flexible scheduling for colonoscopies such as after-hours clinics or weekend hours.

**Objective 7:**

Ensure that patients with insurance coverage for colorectal cancer screening are screened.

**Strategies:**

1. Encourage companies/employers to educate workers on the importance of screening and the availability of CRC screening coverage under their health care plan.
2. Disseminate messages to the public regarding the importance of understanding their medical insurance coverage for CRC screening.

**Objective 8:**

Increase available funding to pay for diagnosis and treatment for all who are screened and found to need additional care.

**Strategies:**

1. Explore the feasibility of initiating and funding a statewide program to pay for diagnosis and treatment of CRC, similar to the Breast and Cervical Cancer Diagnosis and Treatment Program.

**Objective 9:**

Overcome language, literacy, and cultural barriers in health care providers' offices.

**Strategies:**

1. Hold cultural competency training and develop educational materials for providers.
2. Educate providers regarding cultural diversity, literacy, and cultural sensitivity as part of the knowledge base for informed consent.
3. Hire advocates and case managers in community-based organizations.
4. Hire multilingual outreach workers in all medical facilities.
5. Have providers reimbursed for time spent overcoming language and cultural barriers (e.g., payment for Language Line).

**Objective 10:**

Increase funding for colorectal cancer screening among uninsured, low-income Maryland residents, especially in Baltimore City.

**Strategies:**

1. Maintain funding from the Cigarette Restitution Fund for the jurisdictions currently funded.
2. Initiate a CRC screening program in Baltimore City and secure more funding for screening uninsured residents.

**Objective 11:**

Ensure that there are sufficient providers to perform colonoscopy and/or sigmoidoscopy for all who require the procedures in Maryland.

**Strategies:**

1. Assess the degree to which colonoscopy and sigmoidoscopy availability is a problem in Maryland.
2. Have providers perform colonoscopy or flexible sigmoidoscopy in alternative settings such as a mobile unit (Scope-mobile) or free-standing medical centers.
3. Set minimum standards for the number of sigmoidoscopies or colonoscopies that a provider needs to perform each year.
4. Examine the role of nurse practitioners in providing exams, including colonoscopy and flexible sigmoidoscopy.

**Objective 12:**

Ensure that there are sufficient providers who can perform initial physicals and clearance examinations for the uninsured, accept low-income clients and clients with Medicare and Medical Assistance, and have flexible hours necessary to working patients.

**Strategies:**

1. Examine providers' attitudes and practices.
2. Determine the current availability of night and weekend hours to patients.
3. Examine the role of nurse practitioners in providing exams, including colonoscopy and flexible sigmoidoscopy.

**Objective 13:**

Communicate the importance of primary prevention of colorectal cancer through healthy lifestyles. (Please refer to the Goals, Objectives, and Strategies in chapter 6 on diet and physical activity.)

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