Colorectal Cancer Screening Update 2008

Maryland Dept. of Health and Mental Hygiene Center for Cancer Surveillance and Control Cigarette Restitution Fund Program

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CRC Incidence, Mortality, and Survival in U.S.

Annual age-adjusted cancer death rates--Males, US, 1930-2004

FIGURE 4  Annual Age-adjusted Cancer Death Rates* Among Males for Selected Cancers, United States, 1930 to 2004.
*Rates are age-adjusted to the 2000 US standard population.
Note: Due to changes in ICD coding, numerator information has changed over time. Rates for cancers of the lung and bronchus, colon and rectum, and liver are affected by these changes.

Annual age-adjusted cancer death rates--Females, US, 1930-2004

FIGURE 5  Annual Age-adjusted Cancer Death Rates* Among Females for Selected Cancers, United States, 1930 to 2004.
*Rates are age-adjusted to the 2000 US standard population.
†Uterus includes uterine cervix and uterine corpus.
Note: Due to changes in ICD coding, numerator information has changed over time. Rates for cancers of the uterus, ovary, lung and bronchus, and colon and rectum are affected by these changes.

Five Year Relative Survival Rates by Race Colorectal Cancer

![Five Year Relative Survival Rates by Race Colorectal Cancer](image)

Source: 9 SEER Registries, US
CRC Screening
Colorectal Cancer Screening Status of People 50+ Years of Age
Maryland Cancer Surveys, 2002-2006

- **Never tested**
  - 2002: 22.8%
  - 2004: 19.8%
  - 2006: 25.9%

- **Tested but not up-to-date**
  - 2002: 22.8%
  - 2004: 19.8%
  - 2006: 25.9%

- **Up-to-date with FOBT and/or Sigmoidoscopy**
  - 2002: 16.9%
  - 2004: 10.5%
  - 2006: 22.6%

- **Up-to-date with Colonoscopy**
  - 2002: 41.2%
  - 2004: 50.3%
  - 2006: 58.7%
Provider Recommendation is KEY to Screening

- 73% of people 50+ in Maryland reported having a provider recommend endoscopy.....
  of those, 85% got screened
  vs. those who did not report a provider recommendation.... only 25% got screened

Source: Maryland Cancer Survey, 2006
Colorectal Cancer
Colonoscopy or Sig.
(50+ years)

Never screened with col. or sig. 31%

Ever screened with col. or sig.

Source: Maryland Cancer Survey, 2006
Colorectal Cancer Colonoscopy or Sig. (50+ years)

Never screened with col. or sig. 31%

Ever screened with col. or sig.

86% have been to doctor for “routine checkup” in past 2 years

Only 14% have NOT had checkup

Source: Maryland Cancer Survey, 2006
Patient:
- Family and personal history
- Past screening
- Symptoms

Primary Doctor:
- Referral

Case Management and Communication

Colonoscopist:
- Risk history
- Medication changes
- Prep instructions
- Post colonoscopy instructions
- Colonoscopy report
- Findings
- Recommendations

Pathologist:
- Pathology report
Who needs screening?
### Colorectal Cancer Rates by Age and Sex

**Cancers of the Colon and Rectum:**
Average Annual Age-Specific SEER Incidence and U.S. Mortality Rates By Gender, 1992-1996

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Incidence Men</th>
<th>Incidence Women</th>
<th>Mortality Men</th>
<th>Mortality Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-34</td>
<td>300</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>35-39</td>
<td>200</td>
<td>50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>40-44</td>
<td>100</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>45-49</td>
<td>50</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>50-54</td>
<td>25</td>
<td>5</td>
<td>0</td>
<td>0</td>
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<tr>
<td>55-59</td>
<td>12</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>60-64</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>65-69</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>70-74</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>75-79</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>80-84</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>85+</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

Age-adjusted rate per 100,000 population

- Black men
- White men
- Black women
- White women

Source: Maryland DHMH Vital Statistics
Colorectal Cancer Cases by Risk History

Sporadic (average risk) (65%–85%)

Family history (10%–30%)

Hereditary nonpolyposis colorectal cancer (HNPCC) (5%)

Familial adenomatous polyposis (FAP) (1%)

Rare syndromes (<0.1%)

(84,600-110,670 cases/yr.)
## Risk of CRC

<table>
<thead>
<tr>
<th>Group</th>
<th>Approx. lifetime risk of CRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Population</td>
<td>5-6%</td>
</tr>
<tr>
<td>One first degree relative (FDR) with CRC</td>
<td>2--3-fold increased over general population</td>
</tr>
<tr>
<td>Two FDRs with CRC</td>
<td>3--4-fold increased</td>
</tr>
<tr>
<td>FDR with CRC diagnosed ≤ 50</td>
<td>3--4-fold increased</td>
</tr>
<tr>
<td>One second or third degree relative</td>
<td>About 1.5-fold increased</td>
</tr>
<tr>
<td>Two second degree relatives</td>
<td>About 2--3-fold increased</td>
</tr>
<tr>
<td>One FDR with adenoma</td>
<td>About 2-fold increased</td>
</tr>
<tr>
<td>Inflammatory Bowel Disease (ulcerative colitis and Crohn colitis)</td>
<td>[7-10% have CRC after having ulcerative colitis for 20 years; then ~1%/year]</td>
</tr>
<tr>
<td>Familial Adenomatous Polyposis</td>
<td>~100%</td>
</tr>
<tr>
<td>Hereditary Non-polyposis Colorectal Cancer</td>
<td>~80+%</td>
</tr>
</tbody>
</table>

Winawer et al. Gastroenterology 203;124:544-560
<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Age to Begin Screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average risk</td>
<td>50 years</td>
</tr>
<tr>
<td>Increased risk</td>
<td></td>
</tr>
<tr>
<td>Family history (first degree relative with CRC or</td>
<td>40 years old or 10 years before the youngest case in the</td>
</tr>
<tr>
<td>adenoma)</td>
<td>family</td>
</tr>
<tr>
<td>Genetic syndrome:</td>
<td></td>
</tr>
<tr>
<td>FAP</td>
<td>Puberty</td>
</tr>
<tr>
<td>HNPCC</td>
<td>21 years old</td>
</tr>
<tr>
<td>Inflammatory bowel disease</td>
<td>8 years after start of pancolitis; 12-15 years after start of</td>
</tr>
<tr>
<td></td>
<td>left sided colitis</td>
</tr>
</tbody>
</table>
Maryland Screening Recommendations: Medical Advisory Committee on CRC
Colon and rectal cancer
Beginning at age 50, both men and women at average risk for developing colorectal cancer should use one of the screening tests below.

The tests that are designed to find both early cancer and polyps are preferred if these tests are available to you and you are willing to have one of these more invasive tests.

Talk to your doctor about which test is best for you.


Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology

CA Cancer J Clin, published online before print March 5, 2008, as doi:10.3322/CA.2007.0018
Tests that Find Both Polyps and Cancer

- Flexible sigmoidoscopy every 5 years
- Colonoscopy every 10 years
- Double contrast barium enema every 5 years
- CT colonography (virtual colonoscopy) every 5 years
Tests that Primarily Find Cancer

- Guaiac-based fecal occult blood testing (gFOBT) every year
- Fecal immunochemical test (FIT) every year
- Stool DNA test (unclear how often this is needed)
CRC Screening Program in Maryland
Colorectal Cancer Programs in Maryland, FY 2008

Legend
- Educate and Screen for CRC -- Began screening FY2001
- Educate Only
- CDC CRC Demonstration Program -- Began screening FY2007

* Screened for CRC in FY 2001-2003
Colorectal Cancer Screening for Average Risk Clients by Type of Initial Screening Test -- FY 2001
Colorectal Cancer Screening for Average Risk Clients by Type of Initial Screening Test - FY 2004

Legend

- **FOBT - COLONOSCOPY**
- **COLONOSCOPY**
- **NO CRC PROGRAM** *

*Anne Arundel County does CRC education without screening as of 2004; Baltimore City began screening with colonoscopy in FY 2007 under funding from the CDC*
Summary of Cigarette Restitution Fund
Colorectal Cancer Screening

As of December 31, 2007:

15,416 People with one or more screening procedures

8,300 FOBTs (all income levels)
142 Sigmoidoscopies
11,763 Colonoscopies

Source: DHMH Client Database, C-CoP, as of March, 2008
Gender of 15,416 Screened* for CRC
Maryland 2000-December 2007

Women 10,597 (69%)

Men 4,787 (31%)

*Of clients screened with one or more of the following:
FBOT, Flex sig, colonoscopy, DCBE
Minority Status of 19,482 Screened* for CRC
Maryland 2000-December 2007

Non-minority
7,975 (52%)

Minority
7,441 (48%)

*Of clients screened with one or more of the following:
FBOT, Flex sig, colonoscopy, DCBE
Results of 11,763 Colonoscopies
Maryland Cigarette Restitution Fund Program
2000-December, 2007

Adenoma with Hi-Grade Dysplasia, 49, 0.4%
CRC or Susp CRC, 139, 1.2%
Normal, 19%
Adenoma, 2,533, 21%
Other finding (divertic, hemorrhoid) 37%
Hyperplastic + Other Polyp, 21%

Source: DHMH CRF Client Database, as of March, 2008
Recommended screening after initial screening--rescreening or surveillance colonoscopy

“Recall Interval”
After first colonoscopy, then what?

- Interval between colonoscopies will depend on:
  - findings,
  - risk history, and
  - symptoms
Interval between colonoscopies

**IF:**

Findings on colonoscopy were negative:
- No CRC;
- No adenomas; and
- No or only a few hyperplastic polyps

Average risk
No CRC symptoms

- **Interval will usually be 10 years**
- **See guidelines for recommended interval**
Interval between colonoscopies—based on findings

• Interval will usually be **LESS THAN 10 years** if these are these findings:
  
  • Inadequate colonoscopy
    – didn’t reached cecum
    – inadequate bowel preparation
  
  • Cancer
  
  • Adenomatous polyp(s)—need to know:
    – Number
    – Size
    – Histology
    – Completeness of removal
  
  • **Many** hyperplastic polyps indicating Hyperplastic Polyposis Syndrome

• **See guidelines for recommended interval**
Interval between colonoscopies—based on risk history

If first colonoscopy was negative BUT person is at increased risk because of family history:

- Interval may be LESS THAN 10 years
- See guidelines for recommended interval
Example

• 53 year old patient had a colonoscopy:
  “several adenomas were found”

What is the recommended recall interval?
What else do you need to know to determine the interval?
Who will tell the patient?
Will anyone remind the patient when the next colonoscopy is needed?
Answer: You need to know more about the Risk and Colonoscopy Results before you can set the right recall interval:

- Was the bowel preparation adequate?
- Was the cecum reached?
- How many adenomas were found?
- How big were the adenomas?
- Were they completely removed?
- What was the pathology?
- What is the family and personal risk history of the patient?
<table>
<thead>
<tr>
<th>Finding</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Inadequate” bowel prep (How inadequate was it?)</td>
<td>Repeat right away or do other screening (e.g., DCBE)</td>
</tr>
<tr>
<td>Didn’t reach or view cecum</td>
<td>Repeat right away or do other screening</td>
</tr>
<tr>
<td>“Two adenomas”</td>
<td>Need to know histology and size</td>
</tr>
<tr>
<td>Any villous histology (villous, tubulovillous) or high grade dysplasia</td>
<td>If completely removed, repeat in 3 years</td>
</tr>
<tr>
<td>One or more adenomas &gt;1 cm in size</td>
<td>Repeat in 3 years</td>
</tr>
<tr>
<td>Incomplete removal of adenomas</td>
<td>Consider short recall interval (2-6 months)</td>
</tr>
<tr>
<td>1-2 tubular adenomas, &lt;1 cm size</td>
<td>Repeat in 5-10 years</td>
</tr>
</tbody>
</table>
Keys to the right recall

1. Colonoscopy Report
2. Pathology Report
3. Recommendation based on guidelines
4. Communication
Standards for Colonoscopy Reports--CoRADS*

- Date and Time Procedure
- Patient description
- Risk factors-
- ASA class
- Indications
- Consent signed
- Sedation
- Colonoscope
  - Bowel Prep
  - Reached cecum
- Colonoscopy withdrawal time
- Findings
- Specimen(s) to path lab
- Impression
- Complications
- Pathology
- Recommendations,
- Follow-up Plan/Recall
- Other

* Standardized colonoscopy reporting and data system (CoRADS): report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable, Lieberman et al., Gastrointestinal Endoscopy 2007; 65: 757-766
Adequacy of First Colonoscopy of 8,767* Colonoscopy Only, Cycle 1’s Maryland 2000-December, 2007

Not Adequate
8%

Adequate
92%

*8,767 of the 9,767 first colonoscopies had information on “adequacy” of the col.

Source: Maryland Dept of Health and Mental Hygiene; CRF CRC Screening
Reporting on Colonoscopy Findings:

- Number of masses, polyps, other lesions
  - (try to give actual or estimated number rather than “several” or “multiple”)
- Findings: for EACH mass/polyp/lesion--
  - location
  - size
  - description
  - tattoo
  - biopsy(ies) taken
  - method of each biopsy
  - whether lesion completely removed or not
  - whether there was piecemeal removal
  - whether specimens retrieved
  - whether saline lift used
  - number of specimens sent to pathology
How will your patients be reminded about their next colonoscopy?
Patient:
- Family and personal history
- Past screening
- Symptoms

Primary Doctor:
- Referral

Pathologist:
- Pathology report

Colonoscopist:
- Risk history
- Medication changes
- Prep instructions
- Post colonoscopy instructions
- Colonoscopy report
  - Findings
  - Recommendations

Case Management and Communication
Acknowledgements

--Funding from the Maryland Cigarette Restitution Fund
-Staff and partners of Local Public Health Department Programs in MD and their contracted providers

- DHMH Center for Cancer Surveillance and Control (CCSC)
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  -Surveillance and Epidemiology Unit
    University of Maryland at Baltimore
    Ciber, Inc.
  - CCSC Local PH Component

- DHMH FHA, Information Technology

- Minority Outreach Technical Assistance Partners