Colorectal cancer (CRC) is preventable and potentially curable if caught in the early stages. Presbyterian strives for consistent and appropriate colorectal cancer screening for all patients and members.

**Essentials**

- Protocols for screening, diagnosis, and treatment of colorectal cancer are evidence-based and implemented across Presbyterian Medical Group Internal Medicine and Family Medicine (PMG) clinics.
- PHS maintains a registry of patients eligible for colorectal cancer screening.
- The fecal immunochemical test (FIT) kit is made available to all patients and members age 50 to 75; colonoscopy is recommended to those patients in the high prevalence populations.
- The Healthy People 2020 target is to achieve 70.5% of recommended screenings for colorectal cancer.

**What We Know about Colorectal Cancer Screening**

Of cancers that affect both men and women, colorectal cancer is the second leading cause of new cancer cases and cancer-related deaths in New Mexico. The rate of death from colorectal cancer among New Mexicans has declined over the past two decades. The NM colorectal cancer death rate has been below the Healthy People 2020 goal (14.5 per 100,000 population) since 2012. Mortality rate in New Mexico is now very similar to the U.S. mortality rate.

Colorectal cancer is preventable in some cases by removing polyps. It is one of the few cancers that is potentially curable if screening detects it in the early stage. The 5-year relative survival rate for colorectal cancer is 65%. The 5-year survival rate for patients diagnosed with localized disease is 90%, however, only 39% of colorectal cancers are diagnosed at this stage. An estimated 145,600 adults in the United States will be diagnosed with colorectal cancer in 2019.

**Prevalence of Screening**

Screening for colorectal cancer is a substantially underused preventive health strategy in the United States. According to the United States Centers for Disease Control and Prevention (CDC), about one in four adults in the United States has not been screened for colorectal cancer as recommended. Moreover, the CDC states that up to 60% of deaths from colorectal cancer could be avoided if people over 50 received the recommended screening tests. As of 2016, current screening prevalence among the 50 states is approximately 67.3% overall, with New Mexico last at about 58.5% (see Figure 1).

Healthy People 2020 suggests this target: increase to 70.5 percent the proportion of adults aged 50 to 75 years who have received a colorectal screening test. At least 13 states have met this objective for being up to date with CRC screening, and most remaining states have made progress toward reaching this goal. Furthermore, the 2020 proposed threshold for a 5-star rating by Medicare is ≥80 percent.
Target Population
The United States Preventive Services Task Force (USPSTF), an independent volunteer panel of national experts in prevention and evidence-based medicine, recommended that screening for colorectal cancer in average-risk, asymptomatic adults aged 50 to 75 years is of substantial net benefit; screening can reduce deaths from the colorectal cancer in this population. USPSTF also recognized that not enough adults in the United States are using this effective preventive intervention.

Furthermore, the decision to screen for colorectal cancer in older adults, ages 76 to 85 years, should be an individual one based on the patient's prior screening history and overall health. People over the age of 85 may forego screening altogether, because beyond that age people are at least as likely to die of other diseases, and the harms of screening begin to outweigh the benefits.

Types of Screening
Multiple screening strategies are available including stool-based tests (FIT and FIT-DNA), direct visualization tests (colonoscopy and sigmoidoscopy), and radiologic imaging tests (CT colonography and barium enema), and serology tests (SEPT9 DNA test). No empirical data suggest that any one of the strategies provide the greatest net benefit. Accordingly, the best screening test is the one that gets done, and USPSTF concluded that maximizing the total proportion of the eligible population that receives screening will result in the greatest reduction in colorectal cancer deaths.

The American College of Gastroenterology recommends that Providers should talk to their patients about starting colorectal cancer screening earlier and/or being screened more often if they have any of the following colorectal cancer risk factors:

- Personal history of colorectal cancer or adenomatous polyps
- Personal history of chronic inflammatory bowel disease (Crohn’s disease or ulcerative colitis)
- Strong family history of colorectal cancer or polyps (cancer or polyps in a first-degree relative [parent, sibling, or child]

* Up-to-date CRC screening was defined as colonoscopy within the past 10 years, at-home FOBT or FIT within the past year, or flexible sigmoidoscopy within the past 5 years with a FOBT performed every 3 years, for individuals aged 50 to 75 years.
** The 2012 and 2016 BRFSS were used to estimate CRC screening prevalence.
younger than 60 or in 2 or more first-degree relatives of any age)

- Known family history of hereditary colorectal cancer syndromes such as familial adenomatous polyposis (FAP) or hereditary non-polyposis colon cancer (HNPCC)

In 2017, The U.S. Multi-Society Task Force (MSTF) of Colorectal Cancer, a panel of expert gastroenterologists representing the American College of Gastroenterology, the American Gastroenterological Association, and the American Society for Gastrointestinal Endoscopy, updated their recommendations for screening in average-risk individuals beginning at age 50. MSTF ranked screening tests in to three tiers based on performance features, summarized in Table 1 below.

### Table 1. Colorectal cancer screening strategies for asymptomatic adults recommended by MSTF

<table>
<thead>
<tr>
<th>Screening Method</th>
<th>Frequency</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tier 1 Options</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colonoscopy¹</td>
<td>Every 10 y</td>
<td>• Visualization test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Invasive; can produce morbidity as well as anxiety and discomfort</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Requires bowel preparation prior to the procedure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Requires sedation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risk of infection, colonic perforations, or bleeding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Estimated cost: $2,010 to $3,764</td>
</tr>
<tr>
<td>FIT¹</td>
<td>Every year</td>
<td>• Stool-based test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Non-invasive; no bowel preparation, anesthesia, or office visit required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(test is performed at home)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Estimated cost: $27</td>
</tr>
</tbody>
</table>

*Colonoscopy and FIT should be recommended as tests of choice when multiple options are presented as alternatives. It is appropriate to use colonoscopy screening in high prevalence populations and FIT screening in populations with an estimated low prevalence of advanced neoplasia, as well as in organized screening programs.

<table>
<thead>
<tr>
<th><strong>Tier 2 Options</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CT colonoscopy</td>
<td>Every 5 y</td>
<td>• Visualization test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Requires bowel preparation, but not sedation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Extracolonic findings are common possibly leading to evaluation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risk for radiation-induced cancer with repeated use</td>
</tr>
</tbody>
</table>

| Flexible sigmoidoscopy¹ | Every 5 to 10 y | • Visualization test |
|                         |                 | • Requires bowel prep, but not as extensively as colonoscopy    |
|                         |                 | • Most people do not require sedation                            |
|                         |                 | • Risk of colonic perforations and bleeding, although at much    |
|                         |                 | lower rate than observed with colonoscopy                       |
|                         |                 | • Evaluates only the distal colon                               |

| FIT-DNA¹ (Cologuard®) | Every 3 y | • Stool-based test |
|                      |           | • Less specific than screening with FIT, resulting in more       |
|                      |           | false-positives                                             |
|                      |           | • Significantly more expensive than FIT                        |
|                      |           | • Estimated cost: $649                                        |

| **Tier 3 Option**   | |                                                               |
| Capsule Colonoscopy | Every 5 y | • Visualization test                                          |
|                     |           | • Less invasive than colonoscopy                               |
|                     |           | • Bowel preparation is more extensive than colonoscopy        |
|                     |           | • Not approved by FDA for screening average risk persons      |

¹ FIT, colonoscopy, sigmoidoscopy, and FIT-DNA are all included in Presbyterian Health Plan’s Provider Preventative Healthcare Guidelines.
Other Considerations

The MSTF notes that there are considerations to be taken into account with individuals who are not at average-risk:

- Persons with a history of colorectal cancer (CRC) or a documented advanced adenoma in a first-degree relative under age 60 or two first-degree relatives with these findings at any age are recommended to undergo screening by colonoscopy every five years, beginning 10 years before the age at diagnosis of the youngest affected relative, or at age 40, whichever is earlier.
- Persons with a single first-degree relative diagnosed at aged 60 or over with CRC or an advanced adenoma can be offered average-risk screening options beginning at age 40.
- African-American patients should be screened beginning at age 45.
- Adults age younger than 50 years with colorectal bleeding symptoms should undergo colonoscopy or an evaluation sufficient to determine a bleeding cause, initiate treatment and complete follow-up to determine resolution of bleeding.
- Persons who are up to date with screening and have negative prior screening tests, particularly colonoscopy, can consider stopping screening at age 75 or when life expectancy is less than 10 years.
- Persons without prior screening should be considered for screening up to age 85, depending on consideration of their age and comorbidities.

Barriers to Screening

Several common themes have emerged from studies conducted to understand why rates of colorectal cancer screening are low.

**Demographic:** Consistently, populations that are most likely to have lower screening rates include Hispanics, new immigrants, individuals born outside the US, and those with limited English language proficiency. These are also the groups that are least likely to be aware of the need for colorectal screening.

**Awareness:** Inadequate communication by Providers about the importance of screening can result in screening underutilization. A Physician’s recommendation increases the likelihood of screening.

**Preference:** Differences in patient and Provider testing preferences impact screening rates. For example, Physicians who discuss screening with their patients typically recommend colonoscopy; however, some patients prefer at-home screening tests like FIT and are more likely to follow screening recommendations when presented with that option.

**Education level:** Individuals with the lowest educational attainment and income levels, among whom the colorectal cancer burden is the highest, have the lowest colorectal cancer screening rates, even among insured populations.

**Personal:** Personal barriers to screening include fear and embarrassment.
PHS’ Approach to Colorectal Cancer Screening

To improve the prevalence of colorectal cancer screening among patients and members, Presbyterian proactively identifies and screens patients seen in the PMG clinics. When appropriate, both FIT testing and colonoscopy are offered as options to the patient; colonoscopy is recommended as a follow up test whenever there is a positive FIT result.

CRC Screening Registry
Presbyterian maintains a registry of patients who are due for colorectal cancer screening. Enabled by a HEDIS report, PHP collaborates with PMG to generate a list that identifies patients who are candidates for colorectal cancer screening. Moreover, PMG Care Managers use Healthy Planet (application within Epic) reports to identify non-PHP patients who are due for screening.

Screening at PMG
According to protocol in the Patient-Centered Medical Home, the Primary Support LPN or MA identifies patients who are due for colorectal cancer screening. As part of visit planning, the Primary Support LPN/MA (or Medicare Nurse Navigator) queues up both FIT and colonoscopy for the Primary Care Provider (PCP) to discuss with the patient during the patient’s visit.

The Physician or APC discusses need for screening with the patient and finalizes the order for the chosen screening. If the patient does not complete the screening as ordered, the patient receives a follow-up letter encouraging the patient to obtain the recommended screening. If the FIT results are positive, the PCP refers the patient to PMG Gastroenterology for a colonoscopy.

Care Managers monitor Healthy Planet and other colon cancer screening reports for patients who are still in need of screening. They perform outreach and use protocols to order screenings for those patients.

Within the Epic environment, each patient age 50-75 is assigned a Health Maintenance Modifier to be screened for Colorectal Cancer via colonoscopy every 10 years. If the patient selects an alternative screening method, the screening routine can be changed to reflect the testing interval using the Health Maintenance Modifiers function. In addition, if the patient receives a colonoscopy at PMG Gastroenterology, Health Maintenance will automatically update. If the patient receives a colonoscopy outside PMG by a community Provider, the PMG primary clinic will need to add the result manually. (See Epic Tip Sheet.)

For patients seen at PMG Gastroenterology, the Nurse handles patients who have chosen to do a FIT screening according to protocol. The Nurse makes reminder calls, sends letters regarding a negative result, and calls regarding a positive result. After a positive FIT result, the Nurse schedules a follow up colonoscopy.

FIT
A protocol enables the Nurse to proactively identify, contact, and remind patients about non-invasive colorectal cancer screening in the form of FIT. Moreover, the Nurse can queue orders for the FIT. FIT kits and instructions are given to patients to use at home. Patients may also pick up FIT kits at a TriCore draw station. In addition, PHP mails FIT kits to PHP members due for screening who are imputed to PMG Providers.
Follow-Up Colonoscopy
Members and patients who are symptomatic are placed into a separate prioritized track for diagnostic colonoscopy as opposed to screening colonoscopy and are scheduled for the earliest available appointment with either a PMG Provider or a community gastroenterology provider according to the member/patient’s preference.

FIT-DNA (Cologuard®)
Although the USPSTF warns that the FIT-DNA test is less specific than screening with FIT and may result in more false-positives, screening with FIT-DNA (Cologuard®) is a covered preventative benefit for Medicare, Centennial Care, and commercial members with specific clinical indications (age 50 to 85; asymptomatic; at average risk of developing CRC), every three years. Likewise, after a positive FIT-DNA result, the Nurse would schedule a follow up colonoscopy.

Patient Education and Shared Decision Making
In accord with USPSTF recommendations, Presbyterian acknowledges that there is no “one size fits all” approach to colorectal cancer screening and seeks to provide clinicians and patients with the best possible evidence about the various screening methods to enable informed, individual decision making. Which test the patient uses will depend on the patient’s preferences, medical condition, likelihood that the patient will get tested, and the resources available for testing and follow-up. PMG patients and members who are due for screening are offered one-on-one discussions with a Provider about the importance of colorectal cancer screening, including an explanation of the benefits and limitations of various testing options. A tool within the Epic environment allows the providers to survey the patient in advance of a visit. A WiserCare Shared Decision Making Report is generated to illustrate the patient’s preferences for colorectal cancer screening. (See Epic Tip Sheet.)

Leadership
| Process Owners | Dion Gallant, MD - Medical Director for Primary Care (PMG) | Denise A. Gonzales, MD - Medical Director for Specialty Care (PMG) | Sharon Thompson, RN, BSN, CCM - Director of Nursing, Specialty Care (PMG) |
| Clinical Champion | H. David Arredondo, MD - President, Presbyterian Medical Group |
| Governance | The Clinical Scope of PMG Executive Council reviews and approves the nursing protocols regarding CRC screening. |
| | The PMG Executive Council sets CRC screening rate targets. |

Measures of Success

<table>
<thead>
<tr>
<th>Objective</th>
<th>Measure</th>
<th>Aligns with Aim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients are screened for CRC according to USPSTF recommendations</td>
<td>• CRC screening rate (any screening method), according to payer</td>
<td>Better Health</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exceptional Experience</td>
</tr>
</tbody>
</table>
A colorectal cancer screening measure on the PMG Executive Council Performance Results scorecard shows a Presbyterian Delivery System view for PMG patients aged 50-75 who have had two or more primary care visits in the prior 24 months. As of August 2019, the CRC screening rate (65.4%) for this population exceeds the PMG year-end target (65.0%).

According to PHP, the CRC screening rates for some member populations in 2018 were less than the Healthy People 2020 target of 70.5% (see Table 2). Medicare HMO members achieved screening rate high enough to qualify for a 4-star Medicare Star rating linked to this HEDIS measure (≥72% to <79%).

### Table 2. Colorectal cancer screening prevalence for Presbyterian patient and member populations in 2018

<table>
<thead>
<tr>
<th>Population</th>
<th>Screening rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEDIS Medicare HMO</td>
<td>72.26%</td>
</tr>
<tr>
<td>HEDIS Medicare PPO</td>
<td>62.84%</td>
</tr>
<tr>
<td>HEDIS Commercial HMO</td>
<td>62.50%</td>
</tr>
<tr>
<td>Medicare Fee for Service</td>
<td>(to be announced)</td>
</tr>
</tbody>
</table>

**Future Work**

**Additional Metrics**

To gain a more complete understanding of the success of the CRC screening initiative, additional data may be collected, including:

- Screening and compliance rates: FIT vs. colonoscopy, with historical trends
- Individual provider profiles regarding the use of both tests
- Proportion of positive FIT that result in significant finding on follow up colonoscopy
- Length of time between a positive FIT result and a follow up colonoscopy
- Patient satisfaction/engagement data regarding CRC screening process

In addition, PHP may research the number of patients that do not receive care through a PMG clinic (Primary Care or Gastroenterology) and determine the feasibility of reaching out to these patients regarding CRC screening.

**Refining Processes**

PMG and PHP will continue to collaborate and refine processes that will increase screening rate. Some of these improvements include:

- **Updating Health Maintenance:** When a patient obtains a screening colonoscopy by a community gastroenterologist, the procedure results must be manually entered into the electronic health record (update health maintenance) to complete the requirement. (See Epic Tip Sheet.)

- **Reminding patients:** PHS will refine the process for sending reminders to the FIT kit non-responders.
Glossary

Capsule Colonoscopy
Capsule colonoscopy is a minimally invasive imaging method in which the patient swallows a capsule that contains a tiny wireless camera. As the capsule passes through the colon, images are transmitted to a remote recorder worn on a belt. At this time, this test is not approved by FDA for screening average risk persons. Moreover, the HEDIS does not recognize Capsule Colonoscopy as a valid screening test for colorectal cancer.

Colonoscopy
A colorectal cancer screening or diagnostic test in which a long, 10 mm, flexible, lighted tube is inserted into the rectum. Polyps or cancer can be detected inside the rectum and the entire colon. During the test, the Physician can detect and remove most polyps and some cancers. Colonoscopy also is used as a follow-up test to any other screening test that results positively.

CT colonography
Computed tomography (CT) colonography, also called a virtual colonoscopy, is a colorectal cancer screening test that scans the colon and rectum to produce detailed cross-sectional images so the Physician can detect for polyps or cancer. Air is pumped into the rectum and colon, and then a CT scanner is used to take X-ray images of the colon.

HEDIS
The Healthcare Effectiveness Data and Information Set (HEDIS) is a tool used by more than 90 percent of America’s health plans to measure performance on important dimensions of care and service. Altogether, HEDIS consists of 81 measures across 5 domains of care.

FIT
Fecal immunochemical test; also called FIT Kit, or FOBTIA (fecal occult blood test immunoassay). FIT is an at-home colorectal cancer screening test that uses antibodies to detect hemoglobin in the stool. FIT is more specific than guaiac-based testing (gFOBT) because FIT returns positive results only when globins are present — FITs don’t react with foods that have peroxidase activity and aren’t positive in patients with upper gastrointestinal (UGI) bleeding, because globin from UGI bleeds is digested. Therefore, patients do not need to alter their diet prior to testing, and a single fecal sample usually is sufficient.

FIT-DNA
Also referred to as the stool DNA test (or brand name Cologuard®), this at-home colorectal cancer screening test combines the FIT with a test that detects altered DNA in the stool. The patient must collect an entire bowel movement and send it to a lab to be checked for cancer cells. FIT-DNA screening every 3 years has been estimated to provide about the same amount of benefit as screening with flexible sigmoidoscopy alone every 5 years.

Flexible sigmoidoscopy
A colorectal cancer screening test in which a short, flexible, lighted tube is inserted into the rectum. Polyps or cancer can be detected inside the rectum and lower third of the colon.

Additional References

Clinical Care Model
- Medicare Advantage Star Ratings
- Patient-Centered Medical Home
Resources: PHS login required

- Protocol: Fecal Occult Blood Test Immunoassay (FOBTIA) for Colorectal Cancer Screening NSG.PMG.310
- Provider Preventative Healthcare Guidelines: Presbyterian Health Plan
- Training: Colorectal Cancer Health Maintenance (Epic Tip Sheet)
- Training: Shared Decision Making - Preferences for CRC Screening (Epic Tip Sheet)

Additional Resources

- Colorectal Cancer (CRC) Screening in New Mexico: BRFSS (2016)
- Colorectal Cancer Facts & Figures 2017-2019: American Cancer Society
- Guidelines: Colorectal Cancer Screening: Recommendations for Physicians and Patients from the U.S. Multi-Society Task Force (MSTF) on Colorectal Cancer (2017)
- Guidelines: Final Update Summary: Colorectal Cancer: Screening (USPSTF)
- Health Indicator Report of Cancer Deaths - Colorectal Cancer: NM-IBIS
- National Colorectal Cancer Roundtable
- New Mexico Colorectal Cancer Program
- Training: Screening for Colorectal Cancer: Optimizing Quality (CME) - CDC