COLORECTAL CANCER SCREENING

High-value intervention: Providing colorectal cancer screening

Mortality from colorectal cancer is elevated among the mentally ill; watchfulness helps level risk

Cancer screening is an important example of secondary prevention—the aim being to detect disease at an early stage, when treatment can prevent symptomatic disease. Over the years, screening tests for breast cancer, colorectal cancer (CRC), cervical cancer, and, most recently, lung cancer have been developed and recommended by the U.S. Preventive Services Task Force (USPSTF). Among breast cancer, cervical cancer, and CRC, the screening rate for CRC remains lowest, at 58.6%.1

The importance of screening for CRC is highlighted by the facts that:

• CRC is the third most commonly diagnosed form of cancer in the United States among both men and women
• CRC is the second leading cause of cancer-related death.2

The overall decrease in the incidence of CRC in the United States has been credited to improvements in screening and removal of potentially precancerous lesions.3

Harmful disparity puts the mentally ill at exceptional risk

Screening patterns for CRC among patients with mental illness are poorly characterized, but it is known that the overall cancer screening rate among patients with severe psychiatric illness lags significantly behind the rate in the general population.4,5

In addition, studies have shown that mortality among patients with CRC who have a mental disorder is elevated, compared with CRC patients who do not have a psychiatric diagnosis.6

Disclosures
The authors report no financial relationships with any company whose products are mentioned in this article or with manufacturers of competing products.
### Clinical Point

Common modifiable risk factors for colorectal cancer include obesity, smoking, and alcohol consumption.

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### Table 1

<table>
<thead>
<tr>
<th>Test</th>
<th>Benefits</th>
<th>Limitations</th>
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</table>
| Highly sensitive fecal occult blood test | Bowel preparation is not required  
 Test is completed at home  
 Inexpensive  
 Noninvasive  
 Substantial research supports a reduction in cancer mortality | Poorly detects polyps  
 Multiple stool specimens are required  
 Higher rate of false positives than other tests  
 Pre-test dietary limitations  
 Colonoscopy is necessary if abnormalities are detected |
| Fecal immunochemical test            | Bowel preparation is not required  
 Test is completed at home  
 Noninvasive  
 Fewer dietary restrictions than fecal occult blood test  
 More specific for human blood than guaiac-based tests | Poorly detects polyps  
 More expensive than traditional fecal occult blood test  
 Colonoscopy is necessary if abnormalities are detected |
| Stool DNA test                       | Bowel preparation is not required  
 Test is completed at home  
 Noninvasive  
 Only 1 stool specimen usually is required | Poorly detects polyps  
 More costly than other stool tests  
 Still being researched; uncertainty about adequate screening intervals  
 Colonoscopy is necessary if abnormalities are detected |
| Flexible sigmoidoscopy               | Minimal bowel preparation is required  
 Sedation is not required  
 Substantial research supports a reduction in cancer mortality  
 Lower risk of complications than colonoscopy  
 Can be performed by less-specialized providers | Examines only the distal colon  
 Bowel preparation is required  
 May cause discomfort  
 Cannot remove large polyps  
 Small risk of bowel perforation  
 Colonoscopy might be necessary if abnormalities are detected |
| Colonoscopy                          | Examines entire colon  
 Polyps can be removed and biopsied  
 Can diagnose other colon pathology  
 Longest interval between screenings  
 Can remove potentially precancerous polyps | Full bowel cleansing is required  
 More expensive than stool testing  
 Requires sedation and someone to accompany patient on the day of the procedure  
 Patients might miss a day of work  
 Highest risk of complications when compared with other methods  
 No randomized trials documenting benefit on mortality |
| Double-contrast barium enema         | Can view entire colon  
 Sedation is not required | Largely discarded in favor of newer methods  
 Full bowel preparation is required  
 Cannot remove polyps  
 Often misses small polyps  
 Exposes patients to radiation  
 Colonoscopy is necessary if abnormalities are detected |
| CT colonography                      | Examines entire colon  
 Performance is similar to that of optical colonoscopy for large polyps and invasive cancers  
 Few complications  
 Sedation is not required  
 Noninvasive | Full bowel preparation is required  
 Cannot remove polyps  
 Exposes patients to radiation  
 Expensive  
 May not be readily available in smaller centers or rural areas  
 Colonoscopy is necessary if abnormalities are detected |

**Source:** Adapted from reference 15

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Why this disparity? It might be that CRC is more likely to be diagnosed at an advanced stage among these patients, or that they are less likely to receive cancer treatment after diagnosis, or are more likely to have a longer delay between diagnosis and initial treatment than patients who do not have a psychiatric diagnosis.7

Regardless, psychiatric practitioners can make a significant impact on reducing this health disparity by leveraging their unique therapeutic relationship to educate patients about screening options and dispel myths about cancer screening. In this article, we outline practical strategies for CRC screening and weigh the advantages and disadvantages for the use of several tools and guidelines in psychiatric patients.

**What is the pathogenesis of colorectal cancer?**
Most cases of CRC evolve from polyps, abnormal growths on the lining of the colon or rectum. Constituting an estimated 96% of all polyps, adenomas are by far the most common form in the colon and rectum. Adenomas also are most likely to transform over time to dysplasia, and then to progress to cancer.8 Although all adenomas have malignant potential, <10% evolve to adenocarcinoma. This proposed adenoma→carcinoma sequence is not well understood; however, it is known that CRC usually develops slowly—over 10 to 15 years.9 Detection and removal of adenomas and treatable, localized carcinomas form the basis of screening for CRC.

**Risk factors for colorectal cancer**
A number of risk factors for CRC have been identified.

**Specific heritable conditions**, such as Lynch syndrome and familial adenomatous polyposis, pose the greatest risk of CRC, particularly at younger ages and compared with people without such a history.10

**Family history.** One of the strongest risk factors for CRC remains a family history of the disease. People who have a first-degree relative with a diagnosis of CRC are at 2 to 3 times the risk of CRC, compared with people without a family history of the disease. This risk increases further if multiple family members are affected or if the diagnosis was made in a relative at a young age.11,12

**Other non-modifiable risk factors** include a personal history of inflammatory bowel disease, type 2 diabetes mellitus, male sex, African American heritage, and increasing age.13-15

**Common modifiable risk factors** include obesity, smoking, and alcohol consumption.16-18

**What is the role of screening?**
CRC screening is only appropriate for patients who are asymptomatic. CRC generally is asymptomatic in early stages. Prognosis also is most favorable when CRC is detected in the asymptomatic stage.

As lesions of CRC grow, the presentation might include hematochezia, melena, abdominal pain, weight loss, occult anemia, constipation or diarrhea, and changes in stool caliber.19 These signs and symptoms are not highly specific for CRC, however, and might be indicative of other gastrointestinal pathology, including inflammatory bowel disease, diverticulitis, irritable bowel syndrome, infectious colitis, hemorrhoids, and mesenteric ischemia.

Symptomatic patients should be referred directly for diagnostic evaluation. Colonoscopy with biopsy is the standard for diagnosing CRC. Once a diagnosis of CRC is made, patients should be referred to a specialist to discuss treatment; options largely depend on the stage of the cancer at diagnosis.

**What screening tests are available?**
Unlike screening for other cancers, there are a number of reasonable options for CRC screening; Table 15 (page 35) compares their relative pros and cons. Each test has its benefits and drawbacks, allowing the
Colorectal cancer

Clinical Point

Refer patients who are symptomatic for colorectal cancer directly for diagnostic evaluation with colonoscopy/biopsy.

Box

Key points: When to begin screening for colorectal cancer

- **Average-risk patients**: Begin colorectal cancer (CRC) screening at age 50
- **Higher-risk patients**: history of a hereditary syndrome associated with CRC, radiation exposure, history of CRC or inflammatory bowel disease, multiple first-degree relatives with CRC, family history of CRC at a young age: Refer before age 50 to establish an individualized timeline for screening
- **Patients (any age)** with signs or symptoms suspicious for CRC: Refer directly for a diagnostic workup; these patients are not a candidate for CRC screening

Screening strategy to be customized based on patient preference and characteristics, but this variability also can lead to confusion by patient and provider about those options.

**Stool-based tests** detect trace amounts of blood from early-stage treatable cancers. Highly sensitive fecal occult blood testing (FOBT) has been shown specifically to decrease mortality from CRC. Stool-based tests are inexpensive and noninvasive, but require:

- more frequent testing
- that the patient collect the stool specimen
- follow-up colonoscopy when test results are positive.

**Endoscopic and imaging tests** detect polyps and early-stage treatable cancers; all require some degree of bowel preparation, and some require sedation. Testing intervals vary but, as a group, are longer than the interval between stool-based tests because polyps grow slowly. Because colonoscopy with biopsy is the preferred screening method for diagnosing CRC, it is the only screening option that also is a diagnostic procedure.

Where can screening guidelines be found?

Several professional organizations have developed guidelines for CRC screening. The 2 major U.S. guidelines come from USPSTF and a joint guideline from The American Cancer Society, Multi-Society Task Force, and American College of Radiology (ACS-MSTF-ACR).

An update to both guidelines was released in 2008. Table 2 summarizes their recommendations.

Both guidelines recommend that screening begin at age 50. The primary differences between the 2 guidelines lie in the scope of recommended options for screening and the time frame for discontinuing screening:

- **USPSTF** requires a higher level of evidence for screening options and limits recommended options to FOBT, sigmoidoscopy combined with FOBT, and colonoscopy.
- **ACS-MSTF-ACR** emphasizes options that detect premalignant polyps, and generally is more inclusive of testing options; it also delineates tests as useful for either (1) early detection of cancer (stool-based studies) or (2) cancer prevention (endoscopic and imaging tests).

On the question of when to stop screening, ACS-MSTF-ACR bases its recommendations on life expectancy; USPSTF sets a specific age for ending screening.

Recommendations of a third entity, the American College of Gastroenterology (ACG), are similar to those of ACS-MSTF-ACR; however, ACG (1) recommends beginning screening African American patients at age 45 because of their increased risk of CRC and (2) gives preference to colonoscopy as the preferred screening modality.

Guidelines vary for high-risk patients (those with a history of familial adenomatous polyposis or another inherited syndrome associated with CRC; those with a family history of CRC in the young; those with a history of radiation exposure, history of CRC, or inflammatory bowel disease; and those with several first-degree relatives with CRC). Patients who fall into any of these categories should be referred for specialty care to establish the time of initial screening and the interval of subsequent screening.

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CRC screening in the presence of psychiatric illness

Psychiatrists have an opportunity to support their patients when considering potentially confusing CRC screening recommendations. This opportunity might occur during a discussion about general preventive care, or a patient might come to an appointment after visiting a primary care provider, and ask for advice about screening options.

The potential benefits of CRC screening are negated if a patient is unable or unwilling to complete the test or undergo timely follow-up of positive results. It is important, therefore, to individualize screening recommendations—keeping in mind the degree of impairment from mental illness and the patient’s preferences and reliability to engage in follow-up. To date, there are no agreed-on screening guidelines specifically for patients with comorbid mental illness.

Adapting USPSTF guidelines for CRC screening of average-risk patients with mental illness, we offer the following recommendations:

- **Recommend screening.** Begin routine screening at age 50. Patients with well-controlled or mild symptoms should be screened with a stool study with or without flexible sigmoidoscopy. Stool studies are safe, noninvasive, and require no bowel preparation; when used alone, however, they need to be performed yearly.

  Screening accuracy is increased when a stool-based test is combined with flexible sigmoidoscopy; screening then can be performed less often. Unlike colonoscopy, flexible sigmoidoscopy does not involve sedation; a high-functioning patient might find this appealing and tolerate the greater frequency of screening. On the other hand, some patients might not accept the inconvenience of collecting the stool sample with the kit provided and returning it to the lab for processing.

- **Manage psychiatric illness optimally.** For a patient with moderate or severe psychiatric symptoms, first attempt to optimize treatment of the underlying...
When to discontinuing screening

<table>
<thead>
<tr>
<th>When life expectancy is &lt;10 years</th>
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<tr>
<td>Between age 76 to 85, although this decision should be individualized, based on personal risk and health status</td>
</tr>
<tr>
<td>Do not screen after age 85</td>
</tr>
</tbody>
</table>

psychiatric condition before establishing a CRC screening program. If control of symptoms is likely to improve over the next 1 or 2 visits, it might be reasonable to defer screening until symptoms are better controlled and then reassess the patient before making specific screening recommendations. Screening should not be delayed, however, if significant improvement in symptoms is not expected in the near future. Lengthy delay might lead to failure in initiating screening at all.

We recommend that patients with persistent moderate or severe symptoms be screened with traditional colonoscopy. The sedation associated with colonoscopy (1) may be preferable to some patients with more severe illness and (2) allows for screening and diagnostic biopsy if needed during the same procedure. Screening with colonoscopy also:

- does not rely on patients collecting and returning stool kits for processing.
- a potential challenge for patients with limited social support is the requirement to have someone accompany the patient on the day of colonoscopy.

Take steps to improve the screening rate. In addition to specific recommendations based on symptom severity, there are systems-level interventions that should be considered to improve the screening rate. These include:

- addressing transportation issues that are a barrier to screening
- considering the use of health navigators or peer advocates to help guide patients through the sometimes complex systems of care.

A more comprehensive systems-level intervention for mental health clinics that work primarily with persistent and severe mentally ill populations might include employing a care coordinator to organize referrals to primary care or even exploring reverse integration. In reverse integration, primary care providers co-locate within the mental health clinic, (1) allowing for “one-stop shopping” of mental health and primary care needs and (2) facilitating collaboration and shared treatment planning between primary care and mental health for complex patients.

References

Related Resources


Bottom Line

Screening tests for colorectal cancer (except colonoscopy) are useful for the asymptomatic stage only. Stool-based studies, flexible sigmoidoscopy, and colonoscopy are the best studied screening options, and vary in recommended screening intervals. The specific screening modality to recommend should (1) be individualized and (2) take into account patient preference, likelihood of adherence to the schedule, and how well psychiatric symptoms are controlled.