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| Client | HEALTH BENCHMARKS, INC. STANDARD ALGORITHM <i>Implemented for Blue Cross Blue Shield of Texas</i> | | |
| Measure Title | COLORECTAL CANCER SCREENING | | |
| Disease State | Colorectal Cancer | Indicator Classification¹ | Primary Prevention |
| Strength of Recommendation² | A | | |
| Organizations Providing Recommendation | NCQA (HEDIS 2007 Technical Specification), The United States Preventive Services Task Force, The American Cancer Society, the American College of Obstetricians and Gynecologists, The American Academy of Family Physicians, The American Gastroenterological Association | | |
| Clinical Intent | To ensure that all eligible members within a designated age group receive a colorectal cancer screening test at a clinical appropriate frequency. | | |
| Physician Specialties | Family Practice, Gastroenterology, Geriatric Medicine, Internal Medicine, Obstetrics-Gynecology | | |
| Clinical Rationale | <p>Disease Burden</p> <ul style="list-style-type: none"> Colorectal cancer is the third most common cancer in the United States and the third leading cause of cancer death. A person at average risk has about a 5 percent lifetime risk of being diagnosed with colorectal cancer and 1 in 3 of those diagnosed die of the disease.[1-3] <p>Reason for Indicated Intervention or Treatment</p> <ul style="list-style-type: none"> Several screening methods are effective in reducing mortality from colorectal cancer. Analyses of the risks and benefits concluded that the benefits from screening substantially outweigh potential harms, however the quality of evidence, magnitude of benefit, and potential harms vary with each method. Although the screening rate for colorectal cancers has been increasing overall, less than half of Americans age 50 and over are screened for colorectal cancer by FOBT or endoscopy.[4] <p>Evidence supporting Intervention or Treatment</p> <ul style="list-style-type: none"> <u>FOBT</u>: In a randomized-controlled clinical trial of nearly 50,000 adults aged 50-80, annual screening with rehydrated fecal occult blood testing (FOBT) test cards was associated with a 33 percent reduction in colorectal cancer mortality after 18 years of follow-up when compared to controls who received usual care (9.46 versus 14.09 deaths per 1,000 patients screened). Screening every two years was associated with a 21 percent reduction in mortality. In an 18 year follow-up of this study, annual or biennial FOBT was associated with a statistically significant reduction in colorectal cancer.[5-7] <u>Sigmoidoscopy</u>: Two case control studies have demonstrated that screening with sigmoidoscopy is associated with approximately a 60 percent reduction in colorectal cancer mortality.[8, 9] <u>FOBT plus sigmoidoscopy</u>: In one nonrandomized, controlled study involving more than 12,000 patients screened with rigid sigmoidoscopy, the addition of FOBT detected more cancers on initial screening than | | |

sigmoidoscopy alone, however mortality after 9 years was not significantly lower (0.36 per 1,000 patient-years in patients receiving both tests versus 0.63 per 1,000 patient years in controls; $p = 0.11$).[2] It is not known whether these results would be generalizable to flexible sigmoidoscopy.

- **Colonoscopy:** A single case-control study suggests that colonoscopy is associated with lower incidence of colon cancer (odds ratio = 0.47; 95 percent CI, 0.37-0.58) and lower mortality from colorectal cancer (odds ratio = 0.43; 95 percent CI, 0.30-0.63).[10]
- **Double contrast barium enema:** No trial has examined the ability of screening barium enema to reduce the incidence or mortality from colorectal cancer.
- **Digital Rectal Exam:** There is little evidence to determine the effectiveness of either DRE or a single office FOBT using a stool sample obtained on DRE.
- There is insufficient evidence to conclude which of the various methods of screening (FOBT, sigmoidoscopy, FOBT plus sigmoidoscopy, colonoscopy, or double contrast barium enema) is best in terms of the balance of benefits and potential harms, or cost-effectiveness.[11]

Clinical Recommendations

- Based on the epidemiology of colorectal cancer, the United States Preventive Services Task Force (USPSTF) recommends initiating screening at 50 years of age for men and women at average risk for colorectal cancer. In persons at higher risk (for example, those with a first-degree relative who received a diagnosis with colorectal cancer before 60 years of age), initiating screening at an earlier age is considered reasonable and appropriate.[11]
- The American Cancer Society recommends screening people at average risk for colorectal cancer beginning at 50 years of age by[12]:
 - FOBT annually; OR
 - Flexible sigmoidoscopy every 5 years; OR
 - Annual FOBT plus flexible sigmoidoscopy every 5 years; OR
 - Double-contrast barium enema every 5 years; OR
 - Colonoscopy every 10 years
- Similar recommendations are issued by the American College of Obstetricians and Gynecologists, the American Academy of Family Physicians, and the American Gastroenterological Association.[2, 13, 14]

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| Source | Adapted from Health Plan Employer Data and Information Set (HEDIS®) 2007 Technical Specification; HBI added HCPCS codes where applicable. Also endorsed by AQA, NQF, CMS |
| Denominator | Continuously enrolled members ages 51-80 years by the end of the measurement year. |
| Denominator Exclusion | Members with a primary diagnosis of colorectal cancer or a total colectomy at any time prior to the end of the measurement year. |

Numerator Members who received a screening test for colorectal cancer: at least one FOBT during the measurement year; or at least one double contrast barium enema during the measurement year or the four* years prior to the measurement year; or at least one flexible sigmoidoscopy during the measurement year or the four* years prior to the measurement year; or at least one colonoscopy during the measurement year or the nine* years prior to the measurement year.

*Use maximum time allowed by data. In most cases, this is 3-5 years.

Interpretation of Score High score implies better performance

Physician Attribution Score all physicians (in the selected specialties) who saw the member during the measurement year.

- References**
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¹ **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

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| Diagnosis | Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g. evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain) |
| Effectiveness of Care | |
| Prevention | Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations). |
| Screening | Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g. pap smears; screening for elevated blood pressure). |
| Disease Management | Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g. cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event). |
| Medication Monitoring | Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g. thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy) |
| Medication Adherence | Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g. adherence to lipid lowering medication). |
| Utilization | Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g. conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection). |

Strength of Recommendation Based on a Body of Evidence

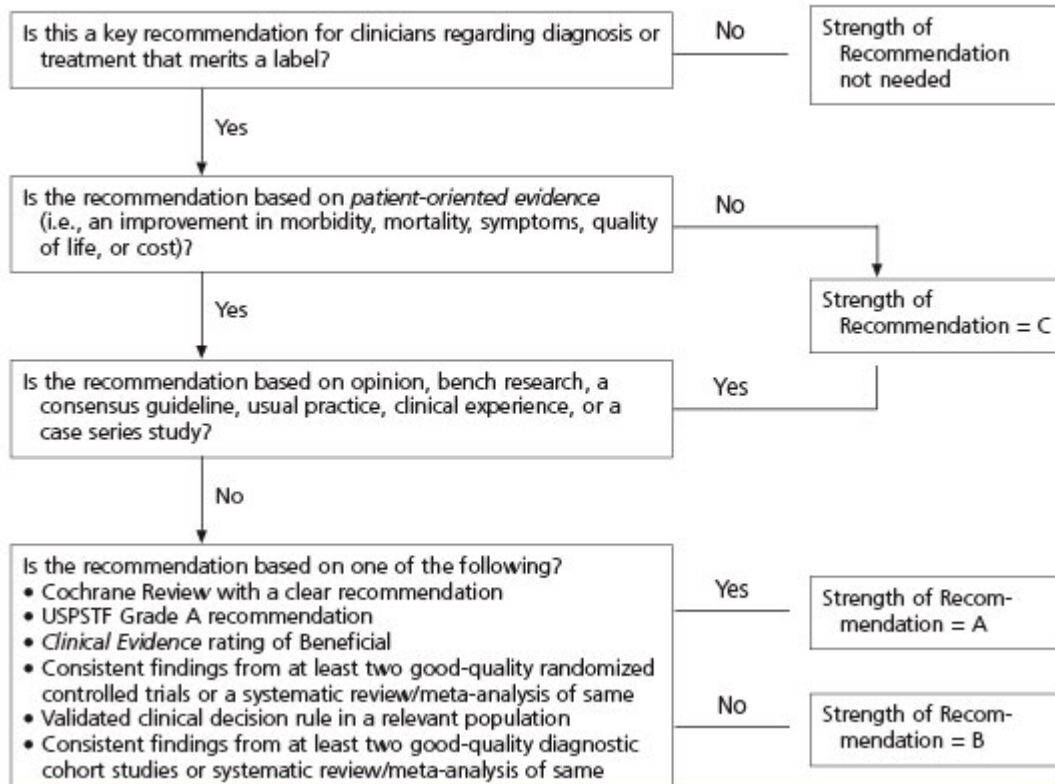


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)