Health Benchmarks®
Clinical Quality Indicator Specification 2009

Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM		
Measure Title	COLORECTAL CANCER SCREENING		
Disease State	Colorectal Cancer	**Indicator Classification**[1]	Primary Prevention
Strength of Recommendation[2]	A		
Organizations Providing Recommendation	American Academy of Family Physicians American Cancer Society American College of Obstetricians and Gynecologists American College of Radiology American Gastroenterological Association US Preventive Services Task Force		
Clinical Intent	To ensure that members 50–80 years of age received appropriate screening for colorectal cancer.		

Background

Disease Burden

- Colorectal cancer is the third most common cancer in the United States, accounting for 9% of all cancer deaths,, and it is expected that approximately 50,000 people will die from colon cancer in 2008 in the U.S.[1]

Reason for Indicated Treatment or Intervention

- In 2004, the prevalence of colorectal cancer screening with endoscopy (flexible sigmoidoscopy or colonoscopy) among adults 50 years and older within the preceding 5 years was only 52.1%. The prevalence of having done an at-home fecal occult blood test within the preceding year was 19%.[2]
- A cost-effectiveness analysis of a birth cohort of 4 million estimated that 31,500 deaths could be prevented if colorectal cancer screening were offered to 100% of a target population of U.S. adults 50 years and older.[3]

Evidence Supporting Intervention or Treatment

- FOBT: In 2007, a Cochrane review of four randomized trials for adults 45-80 found a 16% risk reduction in colorectal cancer mortality for those who were screened with FOBT compared to those who were not.[4]
- Sigmoidoscopy: Two case control studies have demonstrated that screening with sigmoidoscopy is associated with approximately a 60 percent reduction in colorectal cancer mortality. More recently it has been shown that sigmoidoscopy has been shown to reduce incidence of distal colorectal cancer compared to none (Odds Ratio = 0.24; 95% CI 0.17-0.33), and that these effects lasted up to 16 years.[5-8]

- FOBT plus sigmoidoscopy: 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).[9] It is not known whether these results would be generalizable to flexible sigmoidoscopy.
- Colonoscopy: Colonoscopy screening can detect advanced polyps and cancers that would otherwise be missed by sigmoidoscopy and/or FOBT. Although it is generally accepted that colonoscopies reduce mortality, the evidence is still indirect.[8, 10]
- Double contrast barium enema (DCBE): There is no direct evidence that screening with DCBE decreases mortality. However, studies have shown that DCBE detects polyps or cancer with 70% sensitivity and 90% specificity. A review found that DCBE screening strategy were as cost-effective as other colorectal cancer screening strategies.[11]
- 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.[12]

Clinical Recommendations

- 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.[12]
- The American Cancer Society and American College of Radiology recommend screening men and women at average risk for colorectal cancer beginning at 50 years of age by:[13]
    - FOBT† or Fecal Immunochemical test (FIT) 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; OR
    - CT colonography every 10 years

†FOBT as it is sometimes done in physicians' offices, with the single stool sample collected on a fingertip during a digital rectal examination, is not an adequate substitute for the recommended at-home procedure of collecting two samples from three consecutive specimens. Toilet-bowl FOBT tests also are not recommended. In comparison with guaiac-based tests for the detection of occult blood, immunochemical tests are more patient-friendly, and are likely to

	be equal or better in sensitivity and specificity. There is no justification for repeating FOBT in response to an initial positive finding. ‡Flexible sigmoidoscopy together with FOBT is preferred compared with FOBT or flexible sigmoidoscopy alone.
Source	Healthcare Effectiveness Data and Information Set (HEDIS®) 2009 Technical Specification for Physician Measurement

Denominator	
Denominator Definition	Continuously enrolled members ages 51-80 years by the end of the measurement year.
Denominator Index Date	N/A
Denominator Encounters/Claims Criteria	N/A

Denominator Exclusion	
Denominator Exclusion Definition	Members with a diagnosis of colorectal cancer or who received a total colectomy any time prior to the end of the measurement year.
Denominator Exclusion Claims Criteria	ICD-9 diagnosis code(s): 153.x, 154.0x, 154.1x, 197.5x, V10.05 HCPCS code(s): G0213-G0215, G0231 CPT-4 code(s): 44150-44153, 44155-44158, 44210-44212 ICD-9 surgical proc code(s): 45.8x

Numerator	
Numerator Definition	Members who received at least 1 of the following screening tests for colorectal cancer: • At least 1 FOBT during the measurement year • At least 1 double contrast barium enema (DCBE) during the measurement year or the 4* years prior to the measurement year • At least 1 flexible sigmoidoscopy during the measurement year or the 4* years prior to the measurement year • At least 1 colonoscopy during the measurement year or the 9* years prior to the measurement year

Numerator Claims Criteria	CPT-4 code(s): 44388-44394, 44397, 45330-45335, 45337-45342, 45345, 45355, 45378-45387, 45391, 45392, 74280, 82270, 82274 ICD-9 diagnosis code(s): V76.51 HCPCS code(s): G0104, G0105, G0107, G0121, G0328, G0394 LOINC code(s): 2335-8, 12503-9, 12504-7, 14563-1, 14564-9, 14565-6, 27396-1, 27401-9, 27925-7, 27926-5, 29771-3, 50196-5 *(if available)* ICD-9 surgical proc code(s): 45.24, 45.22, 45.23, 45.25, 45.42, 45.43

Physician Attribution

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

References

1. *Cancer Facts & Figures*. 2008, American Cancer Society: Atlanta.
2. Smith, R.A., V. Cokkinides, and H.J. Eyre, *Cancer screening in the United States, 2007: a review of current guidelines, practices, and prospects.* CA Cancer J Clin, 2007. **57**(2): p. 90-104.
3. Maciosek, M.V., et al., *Colorectal cancer screening: health impact and cost effectiveness.* Am J Prev Med, 2006. **31**(1): p. 80-9.
4. Hewitson, P., et al., *Screening for colorectal cancer using the faecal occult blood test, Hemoccult.* Cochrane Database Syst Rev, 2007(1): p. CD001216.
5. Selby, J.V., et al., *A case-control study of screening sigmoidoscopy and mortality from colorectal cancer.* N Engl J Med, 1992. **326**(10): p. 653-7.
6. Newcomb, P.A., et al., *Screening sigmoidoscopy and colorectal cancer mortality.* J Natl Cancer Inst, 1992. **84**(20): p. 1572-5.
7. Newcomb, P.A., et al., *Long-term efficacy of sigmoidoscopy in the reduction of colorectal cancer incidence.* J Natl Cancer Inst, 2003. **95**(8): p. 622-5.
8. Walsh, J.M. and J.P. Terdiman, *Colorectal cancer screening: scientific review.* Jama, 2003. **289**(10): p. 1288-96.
9. Winawer, S., et al., *Colorectal cancer screening and surveillance: clinical guidelines and rationale-Update based on new evidence.* Gastroenterology, 2003. **124**(2): p. 544-60.
10. Walsh, J.M. and J.P. Terdiman, *Colorectal cancer screening: clinical applications.* Jama, 2003. **289**(10): p. 1297-302.
11. Glick, S., J.L. Wagner, and C.D. Johnson, *Cost-effectiveness of double-contrast barium enema in screening for colorectal cancer.* AJR Am J Roentgenol, 1998. **170**(3): p. 629-36.
12. USPSTF, *Screening for Colorectal Cancer: Recommendations and Rationale*. 2002, Agency for Healthcare Research and Quality.
13. Smith, R.A., V. Cokkinides, and H.J. Eyre, *American Cancer Society guidelines for the early detection of cancer, 2006.* CA Cancer J Clin, 2006.

56(1): p. 11-25; quiz 49-50.

[1] **Indicator Classification** (Adapted from HEDIS® technical specifications)

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).

[2] **Strength of Recommendation**

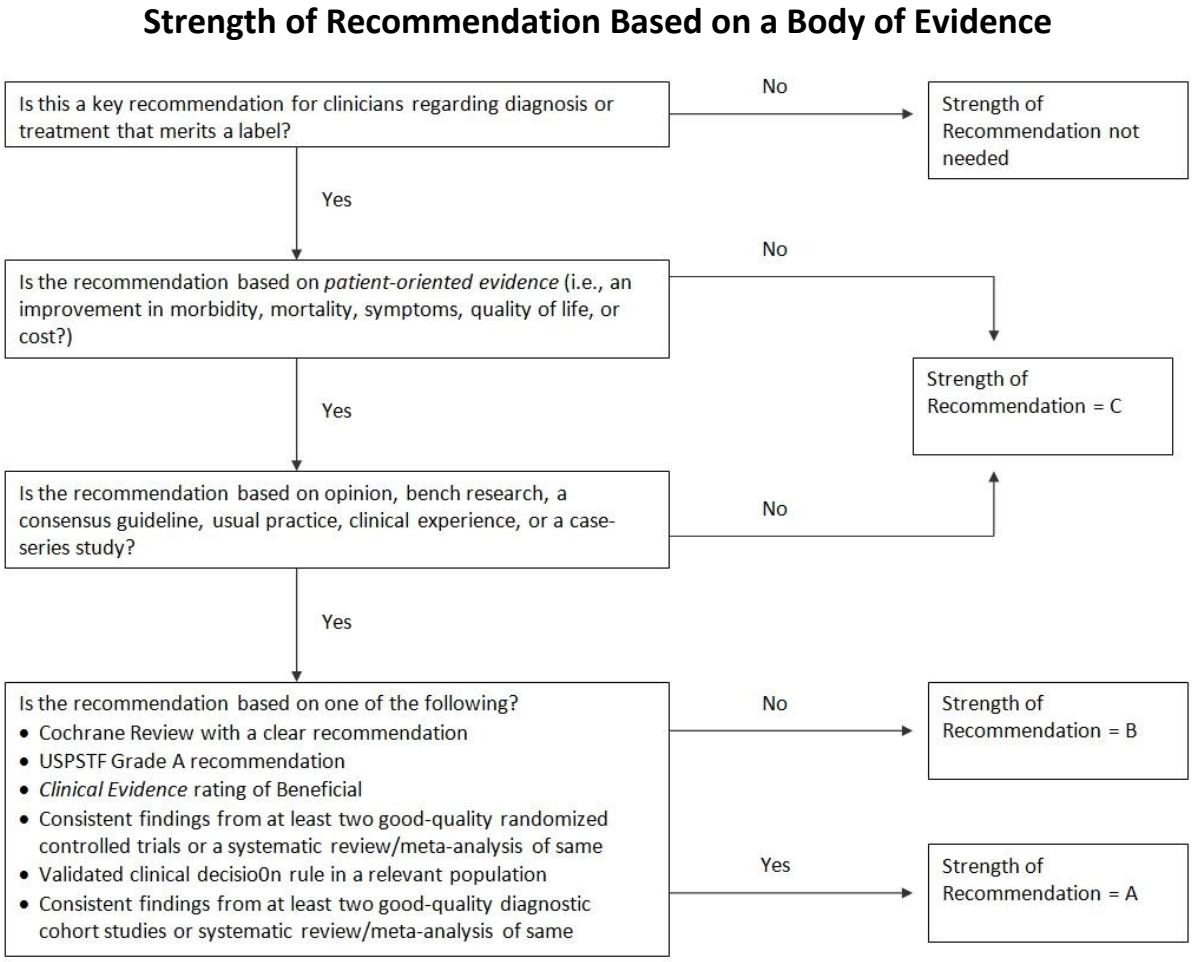

FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation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