

<b>Client</b>	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM <i>Implemented for Blue Cross Blue Shield of Texas</i>		
<b>Measure Title</b>	FOLLOW-UP AFTER INITIAL DIAGNOSIS AND TREATMENT OF COLORECTAL CANCER		
<b>Disease State</b>	Colorectal Cancer	<b>Indicator Classification<sup>1</sup></b>	Disease Management
<b>Strength of Recommendation<sup>2</sup></b>	B		
<b>Organizations Providing Recommendation</b>	The American Society of Clinical Oncology, The National Comprehensive Cancer Network, The American Cancer Society, The US Multi-Society Task Force on Colorectal Cancer		
<b>Clinical Intent</b>	To ensure that all eligible members who have been newly diagnosed with colorectal cancer receive follow up screening tests within a clinical appropriate frequency.		
<b>Physician Specialties</b>	Colon-Rectal Surgery, Family Practice, Gastroenterology, General Surgery, Geriatric Medicine, Internal Medicine, Oncology		
<b>Clinical Rationale</b>	<p><b>Disease Burden</b></p> <ul style="list-style-type: none"> <li>• Colorectal cancer is the third most common cancer in the United States and the second leading cause of cancer death. A person at age 50 has about a 5 percent lifetime risk of being diagnosed with colorectal cancer and a 2.5 percent chance of dying from it.[1-3]</li> <li>• People with a previous diagnosis of colorectal cancer experience a higher incidence of subsequent colorectal cancer than the general population. The cumulative incidence of new cancers is about 1.5 percent at five years in this group.[4]</li> <li>• Approximately 35-40% of patients with stage II or III colorectal cancer at initial diagnosis will have recurrent or metastatic disease.[5]</li> </ul> <p><b>Reason for Indicated Intervention or Treatment</b></p> <ul style="list-style-type: none"> <li>• Surveillance for second primary colorectal cancer assists in removal of pre-malignant polyps and early detection of malignancy.[4]</li> <li>• Patients with locally recurrent or anastomotic disease, a limited number of metastases involving liver or lung, or metachronous (second primary) malignancies or polyps are potentially curable with further surgery.</li> </ul> <p><b>Evidence supporting Intervention or Treatment</b></p> <ul style="list-style-type: none"> <li>• No prospective randomized trials have investigated whether early diagnosis of recurrent disease results in more favorable outcomes.</li> <li>• In a retrospective cohort study of 1247 patients with colorectal cancer, of whom 548 had recurrent disease, those whose recurrences were discovered by routine surveillance testing were three times more likely to be disease-free at five years compared to those diagnosed because of new symptoms (18.6 versus 5.6 percent, respectively).[6]</li> <li>• Another retrospective cohort study of 179 patients with recurrent colorectal cancer, including 137 who underwent re-operation, found that the likelihood of a complete resection was significantly higher among those whose recurrences were detected because of an asymptomatic</li> </ul>		

elevation in the serum tumor marker carcinoembryonic antigen (CEA) as compared to those diagnosed with new symptoms (52.7 versus 34.5 percent, respectively).[7]

- In a meta-analysis of 5 reviews documenting 1,342 patients after treatment for colorectal cancer, those who received intensive surveillance (defined as CT scans of the liver, CEA measurements, chest x-rays, and endoscopies) were 21% less likely to have a recurrent cancer after 5 years than those who received less intensive surveillance.[4, 8]
- One prospective randomized controlled trial evaluating the efficacy of simple vs. intensive surveillance strategies after the curative resection of colorectal cancer found that intensive strategies had a higher overall survival rate in patients with stage II tumors (HR = 0.34; 95% CI, 0.12 to 0.98; P = .045) and in those with rectal lesions (HR = 0.09; 95% CI, 0.01 to 0.81; P = .03), mainly due to higher rate of resectability for recurrent tumors.[9]
- A review of evidence found an incidence rate of 0.7% two years following cancer resection. Surveillance colonoscopy allowed for 87% of cancers found to be operated for a cure.[10]

### Clinical Recommendations

- The American Society of Clinical Oncology (ASCO) recommends the following[11]:
  - Annual computed tomography (CT) of the chest and abdomen for 3 years after primary therapy for patients who are at higher risk of recurrence (stage II or stage III with multiple poor risk features) and who could be candidates for curative-intent surgery.
  - Pelvic CT scan for rectal cancer surveillance, especially for patients with several poor prognostic factors
  - All patients with colorectal cancer should have a full colonoscopy in the preoperative or perioperative setting. Those who do have cancer should have a colonoscopy within 6 months after surgery. Colonoscopy should be repeated at 3 years after operative treatment, and, if results are normal, every 5 years thereafter.
  - Flexible proctosigmoidoscopy every 6 months for 5 years for rectal cancer patients who have not been treated with pelvic radiation.
  - History and physical examination every 3 to 6 months for the first 3 years, every 6 months during years 4 and 5, and subsequently at the discretion of the physician.
  - Carcinoembryonic antigen (CEA) every 3 months postoperatively for at least 3 years after diagnosis for patients with stage II or III colon or rectal cancer if the patient is a candidate for surgery or systemic therapy.
- The National Comprehensive Cancer Network (NCCN) recommends that all patients should have a colonoscopy one year after their initial resection and then if normal every 3 to 5 years or if abnormal after 1 year. The NCCN also recommends that all patients with at least T2 lesions should have CEA testing done every 3 months for 2 years and then every 6 months for a total of 5 years of surveillance.[12]
- A consensus guideline between the American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer recommended that patients with endoscopically resected Stage I cancer, surgically resected Stage II or III cancers, and Stage IV cancer resected for cure receive a colonoscopy within 1 year to look for metachronous lesions. It makes no recommendations regarding CEA testing.[10]

<b>Source</b>	Health Benchmarks, Inc.
<b>Denominator</b>	Continuously enrolled members who are status post resection of colon cancer during the year ending 15 months prior to the end of the measurement year.
<b>Denominator Exclusion</b>	Members who are status post resection of colon cancer any time in the available history prior to the index date, or members who were in hospice care during the timeframe beginning 15 months prior to the measurement year or during the measurement year.
<b>Numerator</b>	Members receiving a colonoscopy or CEA test during the year and 3 months after the index date (excluding index date).
<b>Interpretation of Score</b>	High score implies better performance
<b>Physician Attribution</b>	Score all physicians (in the selected specialties) who saw the member during the one year and 3 months after the index date, including index date.

<b>References</b>	<ol style="list-style-type: none"> <li>1. <i>Cancer Facts and Figures 2006</i>. 2006, American Cancer Society: Atlanta.</li> <li>2. Winawer, S., et al., <i>Colorectal cancer screening and surveillance: clinical guidelines and rationale-Update based on new evidence</i>. <i>Gastroenterology</i>, 2003. <b>124</b>(2): p. 544-60.</li> <li>3. Winawer, S.J., et al., <i>Colorectal cancer screening: clinical guidelines and rationale</i>. <i>Gastroenterology</i>, 1997. <b>112</b>(2): p. 594-642.</li> <li>4. Jeffery, G.M., B.E. Hickey, and P. Hider, <i>Follow-up strategies for patients treated for non-metastatic colorectal cancer</i>. <i>Cochrane Database Syst Rev</i>, 2002(1): p. CD002200.</li> <li>5. Desch, C.E., et al., <i>Recommended colorectal cancer surveillance guidelines by the American Society of Clinical Oncology</i>. <i>J Clin Oncol</i>, 1999. <b>17</b>(4): p. 1312.</li> <li>6. Goldberg, R.M., et al., <i>Surgery for recurrent colon cancer: strategies for identifying resectable recurrence and success rates after resection</i>. <i>Eastern Cooperative Oncology Group, the North Central Cancer Treatment Group, and the Southwest Oncology Group</i>. <i>Ann Intern Med</i>, 1998. <b>129</b>(1): p. 27-35.</li> <li>7. Quentmeier, A., et al., <i>Re-operation for recurrent colorectal cancer: the importance of early diagnosis for resectability and survival</i>. <i>Eur J Surg Oncol</i>, 1990. <b>16</b>(4): p. 319-25.</li> <li>8. Renehan, A.G., et al., <i>Impact on survival of intensive follow up after curative resection for colorectal cancer: systematic review and meta-analysis of randomised trials</i>. <i>Bmj</i>, 2002. <b>324</b>(7341): p. 813.</li> <li>9. Rodriguez-Moranta, F., et al., <i>Postoperative surveillance in patients with colorectal cancer who have undergone curative resection: a prospective, multicenter, randomized, controlled trial</i>. <i>J Clin Oncol</i>, 2006. <b>24</b>(3): p. 386-93.</li> <li>10. Rex, D.K., et al., <i>Guidelines for Colonoscopy Surveillance after Cancer Resection: A Consensus Update by the American Cancer Society and US Multi-Society Task Force on Colorectal Cancer</i>. <i>CA Cancer J Clin</i>, 2006. <b>56</b>(3): p. 160-167.</li> <li>11. Desch, C.E., et al., <i>Colorectal cancer surveillance: 2005 update of an American Society of Clinical Oncology practice guideline</i>. <i>J Clin Oncol</i>, 2005. <b>23</b>(33): p. 8512-9.</li> </ol>
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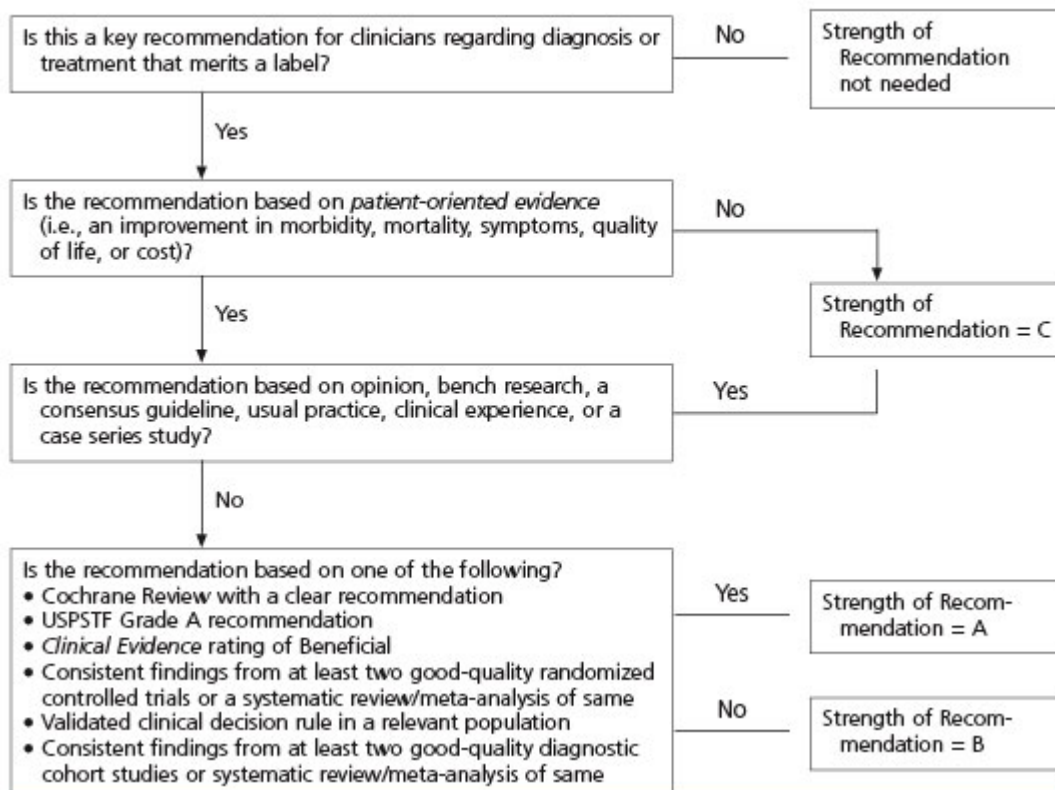
12. NCCN. *Clinical Practice Guidelines in Oncology: Colon Cancer*. 2005 [cited 2005 June 16]; Available from: [http://www.nccn.org/professionals/physician\\_gls/PDF/colon.pdf](http://www.nccn.org/professionals/physician_gls/PDF/colon.pdf).

<sup>1</sup> **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

<b>Effectiveness of Care</b>	<p><b>Diagnosis</b> 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)</p> <p><b>Prevention</b> Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).</p> <p><b>Screening</b> 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).</p> <p><b>Disease Management</b> 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).</p> <p><b>Medication Monitoring</b> 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)</p> <p><b>Medication Adherence</b> 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).</p> <p><b>Utilization</b> 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).</p>
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## <sup>2</sup> Strength of Recommendation

### 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)