

<b>Client</b>	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM		
<b>Measure Title</b>	FOLLOW-UP AFTER INITIAL DIAGNOSIS AND TREATMENT OF COLORECTAL CANCER: CEA		
<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>	American Society of Clinical Oncology American Society of Colon and Rectal Surgeons European Group on Tumour Markers National Comprehensive Cancer Network		
<b>Clinical Intent</b>	To ensure that all eligible members with colorectal cancer who are status post colon resection receive follow up CEA tests at least every 6 months to monitor for cancer reoccurrence.		
<b>Background</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 deaths due to cancer. 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>Approximately 30-40% of patients with stage II or III colorectal cancer at time of initial diagnosis will have recurrent or metastatic disease.[4-6]</li> </ul> <p><b>Reason for Indicated Intervention or Treatment</b></p> <ul style="list-style-type: none"> <li>Surveillance for recurrent colorectal cancer aids in ensuring early removal of pre-malignant polyps and early detection of malignancy.[7]</li> <li>In 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>In a retrospective cohort study of 1,247 patients with colorectal cancer, of whom 548 had recurrent disease, patients whose recurrences were discovered by routine surveillance testing were three times more likely to be disease-free at five years compared to those diagnosed as a result of new symptoms.[8]</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</li> </ul>		

among those whose recurrences were detected because of an asymptomatic elevation in the serum tumor marker carcinoembryonic antigen (CEA) as compared to those diagnosed with new symptoms.[9]

- In a meta-analysis of 5 trials documenting 1,342 patients after treatment for colorectal cancer, those who received intensive surveillance (four out of five trials included measurement of CEA levels) were 19% less likely to have a recurrent cancer after 5 years than those who received less intensive surveillance.[7, 10]
- A second meta-analysis of 7 clinical trials, involving a total of 2,293 patients with colorectal cancer undergoing curative resection also found significant reduction in overall mortality in patients who underwent intensive follow up using serum CEA levels (p=0.0002).[11]
- The American Society of Clinical Oncology (ASCO) recommends that Carcinoembryonic antigen (CEA) be checked every 3 months postoperatively for at least 3 years after diagnosis for patients with stage II or stage III colon or rectal cancer, if the patient is a candidate for surgery or systemic therapy.[12]
- The ASCO advises deferring measurement of CEA levels until fluorouracil-based therapy treatment has been completed, since fluorouracil-based therapy can falsely elevate CEA levels.[13]
- The National Comprehensive Cancer Network (NCCN) also recommends that all patients with T2 or greater lesions of colorectal cancer, who are candidates for further therapy, should have CEA testing done every 3 to 6 months for 2 years and then every 6 months for 5 years.[14]
- The American Society of Colon and Rectal Surgeons recommends that CEA level testing should be performed at least 3 times per year during the first 2 years of follow-up.[15]
- The European Group on Tumour Markers recommends that patients with stage II or stage III disease have CEA levels measured every 2-3 months for at least 3 years.[16]

**Clinical Recommendations**

**Source** Health Benchmarks, Inc.

**Denominator**

**Denominator Definition** Continuously enrolled members who are status post resection of colon cancer during the one year period ending 15 months prior to the end of the measurement year.

**Denominator Index Date** First instance of ] Members who underwent an excision of a colorectal tumor during the 1 year period ending 15 months prior to the end of the measurement year.

**Denominator Encounters/Claims Criteria** CPT-4 code(s): 44110, 44111, 44139-44141, 44143-44147, 44150, 44151\*, 44152\*, 44153, 44155-44158, 44160, 44188, 44204-44208, 44210-44213, 44239\*, 44320, 44799, 45110-45114, 45116, 45119, 45123, 45126, 45160,

45170, 45395, 45397, 45499, 45999

ICD-9 surgical proc code(s): 45.41, 45.7x, 45.8x, 45.93, 45.94 , 45.95, 48.35, 46.10, 46.11, 46.13, 48.40, 48.42, 48.43, 48.5x, 48.6x, 48.8x

ICD-9 diagnosis code(s): 153.0-153.4, 153.6-153.9, 154.0, 154.1, 154.8, V10.05, V10.06

\* Code range was retired, but is still appropriate for retrospective analysis

### Denominator Exclusion

**Denominator Exclusion Definition** Members who were in hospice care or who received fluorouracil-based therapy (5-FU).

**Denominator Exclusion Claims** ICD-9 diagnosis code(s): V66.7

**Criteria** CPT-4 code(s): J9190, 99376\*, 99377, 99378

HCPCS code(s): G0065\*, G0182, G0337, Q5001-Q5009, S0255, S0271, S9126, T2042-T2046

UB revenue code(s): 0115, 0125, 0135, 0145, 0155, 0235, 0650-0652, 0655-0659

UB type of bill code(s): 81x, 82x

Place of service code(s): 34

### Numerator

**Numerator Definition** Members who received a carcinoembryonic antigen (CEA) test during the 9-15 months after the index date.

**Numerator Claims Criteria** CPT-4 code(s): 82378

### Physician Attribution

**Physician Attribution Description** Score all physicians (in the selected specialties) who saw the member during the 9-15 months after the index date.

- References**
1. *Cancer Facts and Figures 2006*. 2006, American Cancer Society: Atlanta.
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- 1312.
5. Rao, et al., *Patterns of recurrence following curative resection alone for adenocarcinoma of the rectum and sigmoid colon*. *Cancer*, 1981. **48**(6): p. 1492-5.
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  8. Goldberg, R.M., et al., *Surgery for recurrent colon cancer: strategies for identifying resectable recurrence and success rates after resection*. *Eastern Cooperative Oncology Group, the North Central Cancer Treatment Group, and the Southwest Oncology Group*. *Ann Intern Med*, 1998. **129**(1): p. 27-35.
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  10. Renehan, A.G., et al., *Impact on survival of intensive follow up after curative resection for colorectal cancer: systematic review and meta-analysis of randomised trials*. *Bmj*, 2002. **324**(7341): p. 813.
  11. Tjandra, et al., *Follow-up after curative resection of colorectal cancer: a meta-analysis*. *Dis Colon Rectum*, 2007. **50**(11): p. 1783-99.
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  13. Desch, C.E., et al., *Colorectal cancer surveillance: 2005 update of an American Society of Clinical Oncology practice guideline*. *J Clin Oncol*, 2005. **23**(33): p. 8512-9.
  14. 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).
  15. Anthony, et al., *Practice parameters for the surveillance and follow-up of patients with colon and rectal cancer*. *Dis Colon Rectum*, 2004. **47**(6): p. 807-17.
  16. Duffy, et al., *Clinical utility of biochemical markers in colorectal cancer: European Group on Tumour Markers (EGTM) guidelines*. *Eur J Cancer*, 2003. **39**(6): p. 718-27.

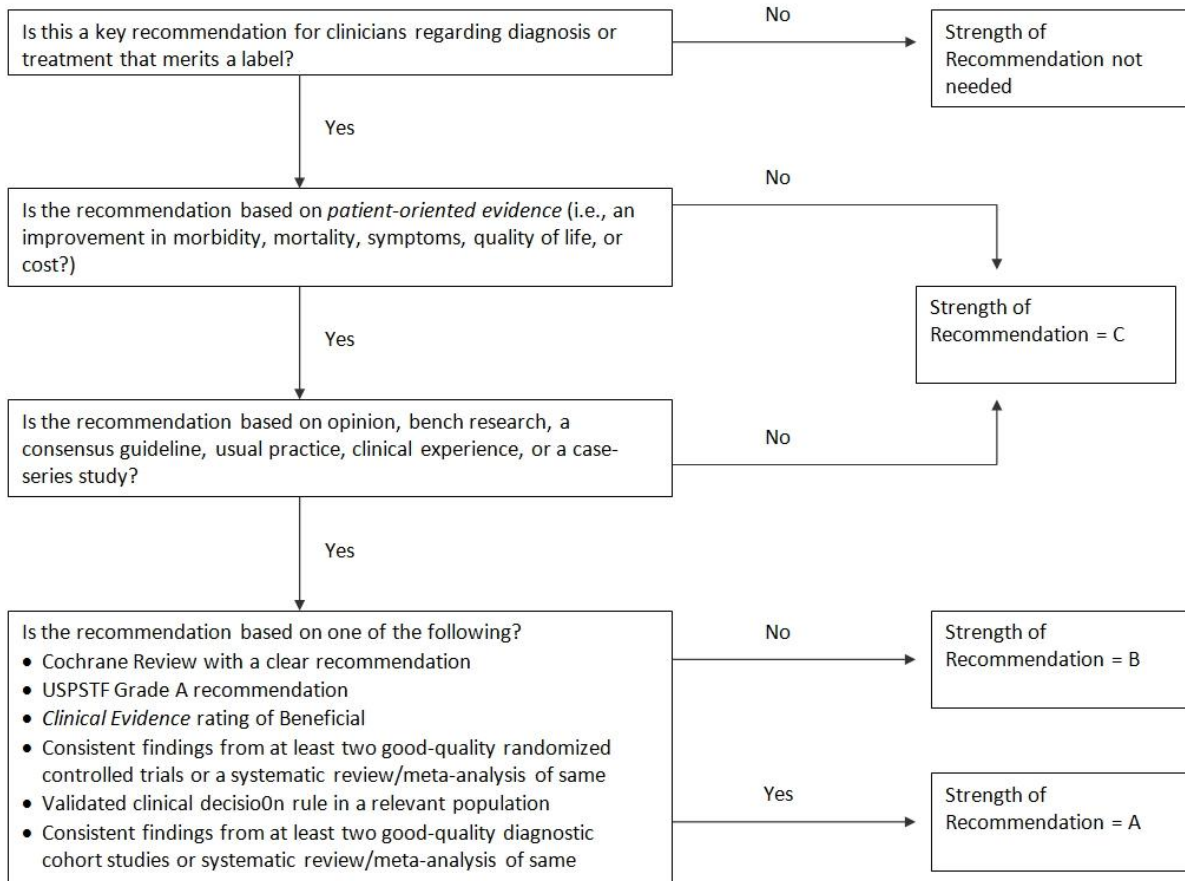
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<sup>1</sup> **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

<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)
<b>Effectiveness of Care</b>	
<b>Prevention</b>	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).
<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).
<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).
<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)
<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).
<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).

## <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)