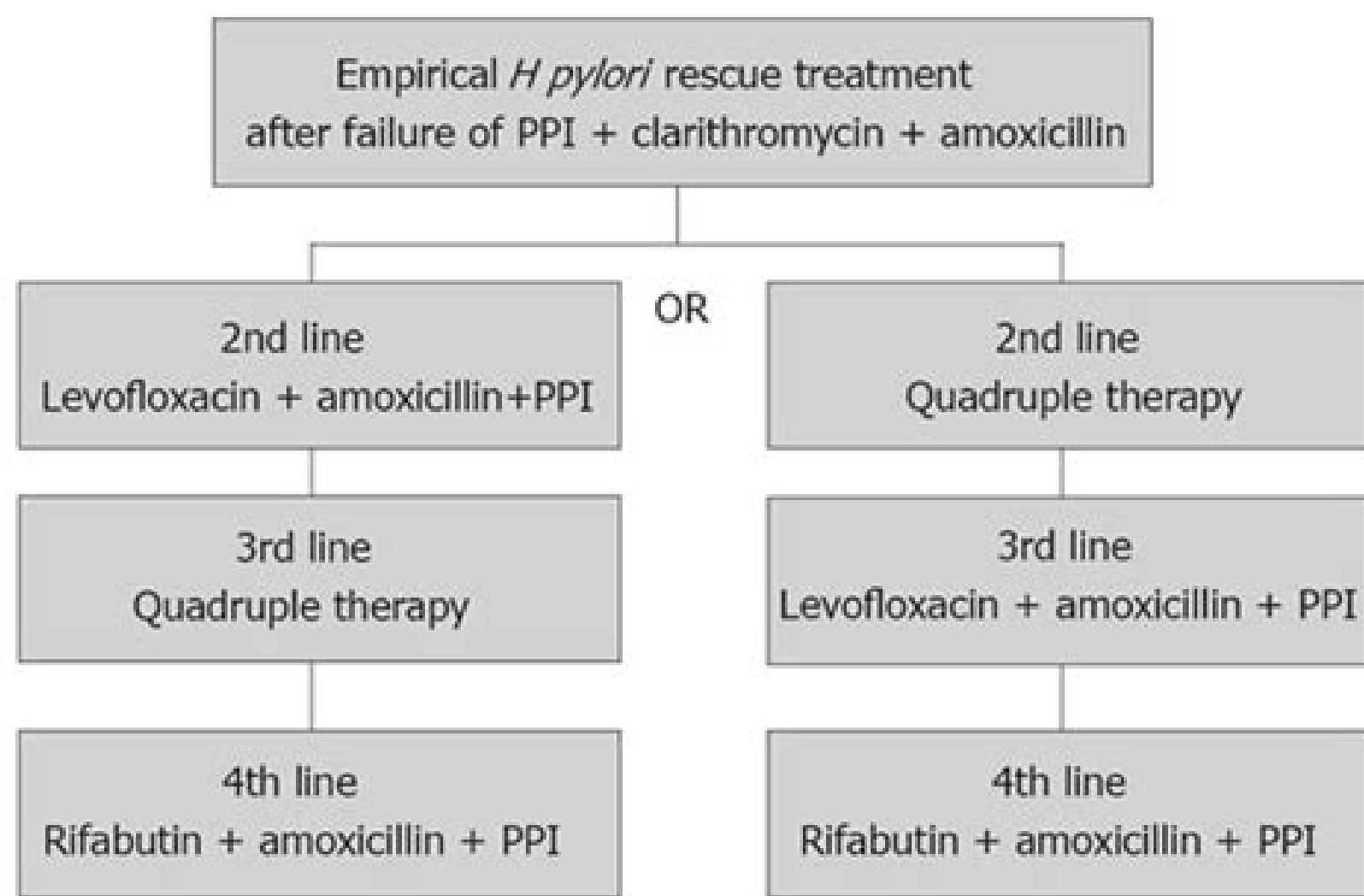




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**Colon Cancer, Version 1.2017**

**Clinical Practice Guidelines in Oncology**

**Overview**

Colorectal cancer (CRC) is the fourth most frequently diagnosed cancer and the second leading cause of cancer death in the United States. In 2016, an estimated 95,270 new cases of colon cancer and approximately 39,220 cases of rectal cancer will occur. During the same year, an estimated 69,180 people will die of colon and rectal cancer combined.<sup>1</sup> Despite these high numbers, the incidence of colon and rectal cancer per 100,000 people decreased from

**Abstract**

This portion of the NCCN Guidelines for Colon Cancer focuses on the use of systemic therapy in metastatic disease. Considerations for treatment selection among 32 different monotherapies and combination regimens in up to 7 lines of therapy have included treatment history, extent of disease, goals of treatment, the efficacy and toxicity profiles of the regimens, RAS/RAF/BRAF mutational status, and patient comorbidities and preferences. Location of the primary tumor, the BRAF mutation status, and tumor microsatellite stability should also be considered in treatment decisions.

*J Natl Compr Canc Netw* 2017;15(3):370-398

**NCCN Categories of Evidence and Consensus**

Category 1: Based upon high-level evidence, there is uniform NCCN consensus that the intervention is appropriate.

Category 2A: Based upon lower-level evidence, there is uniform NCCN consensus that the intervention is appropriate.

Category 2B: Based upon lower-level evidence, there is NCCN consensus that the intervention is appropriate.

Category 3: Based upon any level of evidence, there is major NCCN disagreement that the intervention is appropriate.

All recommendations are category 2A unless otherwise noted.

Clinical trials: NCCN believes that the best management for any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

**Please Note**

The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines<sup>®</sup>) are a statement of consensus of the authors regarding their views of currently accepted approaches to treatment. Any clinician seeking to apply or consult the NCCN Guidelines<sup>®</sup> is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient's care or treatment. The National Comprehensive Cancer Network<sup>®</sup> (NCCN<sup>®</sup>) makes no representation or warranties of any kind regarding their content, use, or application and disclaims any responsibility for their applications or use in any way.

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**Disclosures for the NCCN Colon Cancer Panel**

At the beginning of each NCCN Guidelines panel meeting, panel members review all potential conflicts of interest. NCCN, in keeping with its commitment to public transparency, publishes these disclosures for panel members, staff, and NCCN staff. Individual disclosures for the NCCN Colon Cancer Panel members can be found on page 398. (The most recent version of these guidelines and accompanying disclosures are available on the NCCN Web site at [nccn.org](http://nccn.org).)

These guidelines are also available on the internet. For the latest updates, visit [nccn.org](http://nccn.org).

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**NCCN Guidelines Version 1.2014**  
**Colon Cancer**

NCCN Guidelines Index  
Colon Cancer Table of Contents  
Discussion

PATHOLOGIC STAGE <sup>a</sup>	ADJUVANT THERAPY <sup>b,c</sup>	SURVEILLANCE <sup>d</sup>
Tis, T1, N0, M0	None	Colonoscopy at 1 y • If advanced adenoma, repeat in 1 y • If no advanced adenoma, repeat in 3 y, then every 5 y <sup>e</sup>
T2, N0, M0	None	• History and physical every 3-6 mo for 2 y, then every 6 mo for a total of 5 y • CEA <sup>f</sup> every 3-6 mo for 2 y, then every 6 mo for a total of 5 y • Chest/abdominal/pelvic CT <sup>g</sup> annually for up to 5 y for patients at high risk for recurrence <sup>h</sup>
T3, N0, M0 <sup>h,i</sup> (no high-risk features)	Clinical trial or Observation or Consider capecitabine <sup>o</sup> or 5-FU/leucovorin <sup>o</sup>	• Colonoscopy <sup>n</sup> in 1 y except if no preoperative colonoscopy due to obstructing lesion, colonoscopy in 3-6 mo • If advanced adenoma, repeat in 1 y • If no advanced adenoma, repeat in 3 y, then every 5 y <sup>e</sup> • PET-CT scan is not routinely recommended • See Principles of Survivorship (COL-9)
T3, N0, M0 at high risk for systemic recurrence <sup>h,i</sup> or T4, N0, M0	Capecitabine <sup>o,p</sup> or 5-FU/leucovorin <sup>o,p</sup> or FOLFOX <sup>o,p,q,r,s</sup> or CapeOx <sup>o,p,q,r</sup> or FLOX <sup>o,p,q,r,s</sup> or Clinical trial or Observation	• If Recurrence, See Workup (COL-9)

**Note:** All recommendations are category 2A unless otherwise indicated.

**Clinical Trials:** NCCN believes that the best management for any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

**Footnotes:**

<sup>a</sup>All patients with colon cancer should be counseled for family history and considered for risk assessment. Patients with suspected hereditary non-polyposis colon cancer (HNPCC), familial adenomatous polyposis (FAP), and attenuated FAP, see the NCCN Guidelines for Colorectal Cancer Screening.

<sup>b</sup>See Principles of Pathologic Review (COL-4) - Pathological stage.

<sup>c</sup>CT should be with CT and oral contrast. Consider adjuvant 5-FU with MFO control plus a non-oxaliplatin oral CT if either CT of adjuvant is inadequate or if patient has a contraindication to CT with IV contrast.

<sup>d</sup>High-risk factors for recurrence: poorly differentiated histology (indicative of those cancers that are MMRd), lymphovascular invasion, bowel obstruction, >10 lymph nodes examined, peritoneal invasion, localized perforation, or close, indeterminate, or positive margins. In high-risk stage II patients, there are no data that compare risk factors and selection of chemotherapy.

<sup>e</sup>Testing for mismatch repair (MMR) proteins should be considered for all patients <50 years of age or with stage II disease. Stage II MMRd patients may have a good prognosis and do not benefit from 5-FU adjuvant therapy. Stage III, Murray S, Margolis G, et al. Colorectal mismatch repair as a predictive marker for lack of efficacy of fluorouracil-based adjuvant therapy in colon cancer. *J Clin Oncol* 2015;33:3219-3226. Available at: <http://www.jco.org/jco/article.aspx?doi=10.1200/JCO.2014.28.4100>

<sup>f</sup>See Principles of Risk Assessment for Stages II Disease (COL-4)

<sup>g</sup>There are insufficient data to recommend the use of multi-gate decay panels to determine adjuvant therapy.

<sup>h</sup>Relevantly, cetuximab, panitumumab, or ipilimumab should not be used in the adjuvant setting for stage I or II patients outside the setting of a clinical trial. (See Principles of Adjuvant Therapy (COL-4).)

<sup>i</sup>Consider RT for T4 with penetration to a fixed structure. (See Principles of Radiation Therapy (COL-7).)

<sup>j</sup>Ipilimumab has not been demonstrated for the addition of oxaliplatin to 5-FU/leucovorin in stage II colon cancer. Bourgonnais C, Anthe T, Bordeau F, et al. Adjuvant therapy with fluorouracil and oxaliplatin in stage II and colon cancer (between ages 70 and 75 years) with colon cancer: a subgroup analysis of the Multicenter International Study of oxaliplatin, fluorouracil, and leucovorin in the adjuvant treatment of colon cancer trial. *J Clin Oncol* 2012 published online ahead of print on August 20, 2012.

<sup>k</sup>Benefit for the addition of oxaliplatin to 5-FU/leucovorin in patients age 70 and older has not been proven.

<sup>l</sup>Oxaliplatin 3.4 mg/m<sup>2</sup> is considerably higher with FLOX than FOLFOX in cross study comparison. (See CE, Benson III AB, Sommadossi JP, et al. Colorectal cancer surveillance: 2005 update of the American Society of Clinical Oncology Practice Guidelines. *J Clin Oncol* 2006;24:1612-1619.)

<sup>m</sup>See CE, Kahn CL, Levin B, et al. Guidelines for colonoscopy surveillance after clinical resolution of colorectal adenomas. *Gastroenterology* 2006;130:1965-71.

<sup>n</sup>If patient is a potential candidate for further intervention.

<sup>o</sup>CT scan may be useful for patients at high risk for recurrence (eg, lymphatic or venous invasion by tumor, poorly differentiated tumors).

**Table 1. CRAB Criteria Used in the Diagnosis of Multiple Myeloma**

Symptom	Diagnostic Criteria	Management	
C	HyperCalcemia	Corrected serum calcium >11.5 mg/dL	Hydration and IV bisphosphonates; additional agents include corticosteroids and calcitonin
R	Renal insufficiency	Serum creatinine >2 mg/dL	Correct hypercalcemia and possible dehydration; avoid nephrotoxic agents such as NSAIDs
A	Anemia	Hemoglobin <10 g/dL or >2 g/dL below the lower limit of the normal range	Correct iron, folate, and vitamin B <sub>12</sub> deficiency; consider use of erythropoietic agent if symptomatic and not receiving immunomodulatory agents
B	Bone disease	Severe osteopenia, lytic lesions, pathologic fractures, and/or pain	Monitoring required with use of bisphosphonates in the prevention of skeletal-related events

NSAID: nonsteroidal anti-inflammatory drug. Source: References 4, 10, 11.

**ACG guidelines for *H. pylori* management:**  
**Indications for eradication**

Testing for *H. pylori* is recommended

**Clear indications**

- Peptic ulcer disease (active or past history)
- Gastric MALT lymphoma (low-grade)
- After endoscopic resection of early gastric cancer
- Uninvestigated dyspepsia; <55 years; no alarm symptoms

**Areas of controversy**

- GERD
- Functional dyspepsia
- NSAID users
- Iron deficiency anemia
- Increased risk of gastric cancer

*Chey & Wong, Am J Gastroenterol 2007; In press*





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