

National Imaging Associates, Inc.*	
Clinical guidelines: COLORECTAL CANCER	Original Date: March 2011
Radiation Oncology	Last Revised Date: January 2022
Guideline Number: NIA_CG_121	Implementation Date: January 2023

INDICATIONS FOR RADIATION THERAPY

- **Colon Cancer**
 - Radiation therapy is indicated for T4 tumors with penetration/perforation, intermediate/positive margins or for palliative care to relieve symptoms for Stage IV metastatic disease. Radiation therapy should not replace surgical resection.
 - 3D Conformal is recommended. 45-50Gy in 25-28 fractions. Boost dose for positive margins an option.¹
 - IORT, if available, should be considered for very close or positive margins following resection, particularly for T4 or recurrent cancers, as an additional boost.¹ Where IORT is not available, 10-20Gy external beam radiation and/or brachytherapy to a limited volume can be considered soon after surgery but prior to adjuvant chemotherapy.
 - IMRT is not indicated as a standard treatment option and should be reserved for unique situations but may be utilized for re-irradiation of previously treated patients with recurrence.¹ (Requires Physician Review)
 - Proton beam is not an approved treatment option for colorectal cancer.
- **Rectal Cancer**
 - Radiation therapy is considered a medically necessary for the following clinical indications: Preoperative or postoperative/adjuvant therapy or as primary therapy if tumor inoperable. Radiation therapy should not replace surgical resection.²
 - 3D Conformal Radiation Therapy recommended. 45 -54Gy delivered 25 -30 fractions at 1.8 -2.0Gy per fraction. Boost may be an option. Dosage exceeding 54Gy may be necessary for un-resectable tumors.²

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- IMRT is not indicated as a standard treatment option and should be reserved for unique situations but may be utilized for re-irradiation of previously treated patients with recurrence.² (Requires Physician review)
- Proton beam is not an approved treatment option for colorectal cancer.

TREATMENT OPTIONS REQUIRING PHYSICIAN REVIEW

Intensity Modulated Radiation Therapy (IMRT)

IMRT is not indicated as a standard treatment option and should not be used routinely for the delivery of radiation therapy for colorectal cancer. IMRT may be appropriate for limited circumstances in which radiation therapy is indicated and 3D conformal radiation therapy (3D-CRT) techniques cannot adequately deliver the radiation prescription without exceeding normal tissue radiation tolerance, the delivery is anticipated to contribute to potential late toxicity or tumor volume dose heterogeneity is such that unacceptable hot or cold spots are created.

Clinical rationale and documentation for performing IMRT rather than 2D or 3D-CRT treatment planning and delivery will need to:

- Demonstrate how 3D-CRT isodose planning cannot produce a satisfactory treatment plan (as stated above) via the use of a patient-specific dose volume histograms and isodose plans.
- Provide tissue constraints for both the target and affected critical structures.

IMRT can be approved for low-lying rectal cancers requiring treatment of inguinal lymph nodes. These tumors are often treated like anal cancer. No comparative plan would be necessary.

Proton Beam Radiation Therapy

Proton beam is not an approved treatment option for colorectal cancer. There are limited clinical studies comparing proton beam therapy to 3-D conformal radiation. Overall, studies have not shown clinical outcomes to be superior to conventional radiation therapy.

Stereotactic Radiation Therapy

SBRT is not a routine treatment option for Colon cancer but may be considered for patients with oligometastatic disease or for tumors in or near previously irradiated regions.

THE FOLLOWING APPLIES TO CMS (MEDICARE) MEMBERS ONLY

For Proton Beam and Stereotactic Radiotherapy refer to Local Coverage Determination (LCD), if applicable

BACKGROUND

Colorectal cancer, also called colon cancer or large bowel cancer, includes cancerous growths in the colon, rectum and appendix. Cancer of the colon is generally treated with both surgery and chemotherapy. Surgery may be used in the treatment of all stages of rectal cancer. Preoperative radiation therapy and chemotherapy (neoadjuvant therapy) are given to shrink the tumor before surgery, resulting in improved probability for successful resection. Postoperative radiation therapy and chemotherapy (adjuvant therapy) may decrease local recurrence and improve overall survival. It may also be used for palliative treatment to relieve symptoms of metastatic disease. In addition, local recurrences that cause pain, bleeding or other symptoms are appropriately treated with radiation therapy.

POLICY HISTORY

Date	Summary
January 2022	Added: IMRT can be approved for low-lying rectal cancers requiring treatment of inguinal lymph nodes. These tumors are often treated like anal cancer. No comparative plan would be necessary.
February 2021	<ul style="list-style-type: none">• Added: SBRT is not a routine treatment option for Colon cancer but may be considered for patients with oligometastatic disease or for tumors in or near previously irradiated regions.• Updated references
February 2020	<ul style="list-style-type: none">• No changes
February 2019	<ul style="list-style-type: none">• Removed section: 'Pediatric Considerations' for consistency with other GLs• Added and updated references

REFERENCES

1. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Colon Cancer Version 3.2021. National Comprehensive Cancer Network (NCCN). Updated September 10, 2021. Accessed December 10, 2021. https://www.nccn.org/professionals/physician_gls/pdf/colon.pdf
2. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Rectal Cancer Version 2.2021. National Comprehensive Cancer Network (NCCN). Updated September 10, 2021. Accessed December 10, 2021. https://www.nccn.org/professionals/physician_gls/pdf/rectal.pdf

ADDITIONAL RESOURCES

1. Arbea L, Ramos LI, Martínez-Monge R, Moreno M, Aristu J. Intensity-modulated radiation therapy (IMRT) vs. 3D conformal radiotherapy (3DCRT) in locally advanced rectal cancer (LARC): dosimetric comparison and clinical implications. *Radiat Oncol*. Feb 26 2010;5:17. doi:10.1186/1748-717x-5-17
2. Goodman KA, Patton CE, Fisher GA, et al. Appropriate customization of radiation therapy for stage II and III rectal cancer: Executive summary of an ASTRO Clinical Practice Statement using the RAND/UCLA Appropriateness Method. *Pract Radiat Oncol*. May-Jun 2016;6(3):166-175. doi:10.1016/j.prro.2015.11.014
3. Hong TS, Moughan J, Garofalo MC, et al. NRG Oncology Radiation Therapy Oncology Group 0822: A Phase 2 Study of Preoperative Chemoradiation Therapy Using Intensity Modulated Radiation Therapy in Combination With Capecitabine and Oxaliplatin for Patients With Locally Advanced Rectal Cancer. *Int J Radiat Oncol Biol Phys*. Sep 1 2015;93(1):29-36. doi:10.1016/j.ijrobp.2015.05.005
4. Meyer JJ, Willett CG, Czito BG. Emerging role of intensity-modulated radiation therapy in anorectal cancer. *Expert Rev Anticancer Ther*. Apr 2008;8(4):585-93. doi:10.1586/14737140.8.4.585
5. Myerson RJ, Garofalo MC, El Naqa I, et al. Elective clinical target volumes for conformal therapy in anorectal cancer: a radiation therapy oncology group consensus panel contouring atlas. *Int J Radiat Oncol Biol Phys*. Jul 1 2009;74(3):824-30. doi:10.1016/j.ijrobp.2008.08.070

Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

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