Clinical Policy: Intensity Modulated Radiation Therapy (IMRT)

Reference Number: MC.CP.MP.69 Coding Implications
Date of Last Revision: 02/25 Revision Log

See Important Reminder at the end of this policy for important regulatory and legal information.

Description

This policy outlines the medical necessity criteria for intensity modulated radiation therapy (IMRT). This criterion is sourced and supported by American Society for Radiation Oncology (ASTRO) Practice Parameters for Intensity Modulated Radiation Therapy (IMRT) as well as the National Comprehensive Cancer Network (NCCN) guidelines.

ASTRO guidelines are evidence- or consensus- based documents designed to assist medical professionals and patients in making appropriate and informed decisions about health screenings, prevention, and the treatment options for specific medical conditions. These documents are developed from the body of established literature complemented by expert opinion. NCCN guidelines are intended to guide decision making related to cancer screening, prevention, and supportive care for healthcare professionals as well as patients and caregivers. NCCN guidelines are continuously reviewed by a multidisciplinary panel of experts using the best available evidence and current recommendations in the cancer field.

Benefits of IMRT include sharper dose gradients than conventional or three-dimensional conformal radiation therapy, the sparing of nearby critical structures, and limited dose toxicity to select surrounding organs, which can be greatly beneficial to patients. Risks of IMRT include significant changes in the dose delivered to the PTV (Planning Target Volume) and risk to organs due to small changes in patient position or target position within the body. Using IMRT consistently with established guidelines offers the benefits of best-practice recommendations intended to reduce the potential risk of the treatment vs. alternatives or lack of treatment.

Note: For criteria applicable to non-Medicare plans, please see CP.MP.69 Intensity Modulated Radiation Therapy (IMRT).

Policy/Criteria

I. It is the policy of Medicare health plans affiliated with Centene Corporation® that IMRT is **medically necessary** for **any** of the following indications:
   A. Age < 18 years with a solid tumor;
   B. Medically inoperable patient with diagnosis of cancer where dose escalation is required;[49]
   C. Primary malignant or benign bone tumors; [49]
   D. Re-irradiation (where cumulative critical structure dose would exceed tolerance dose); [49]
   E. Indications by cancer site may include any of the following:
      1. Central Nervous System, any of the following: [49]
         a. Ocular tumors, including intraocular melanomas;
         b. Tumors that approach or are located at the base of skull;
         c. Primary CNS tumors, primary spine, or metastatic tumors to the spine or spinal cord where organ at risk tolerance may be exceeded with 3-D conformal treatments;

d. Primary and metastatic tumors requiring craniospinal irradiation;
e. Brain metastases requiring hippocampal-sparing whole brain radiotherapy;

2. Head and Neck, any of the following: [49]
   a. Definitive, adjuvant, or palliative treatment of primary/secondary head and neck cancers or draining lymphatics of the neck including (but not limited to) cancers of the nasopharynx, nasal cavity, paranasal sinuses, oropharynx, oral cavity, hypopharynx, larynx, thyroid, or salivary glands;
   b. Cutaneous tumors with cranial nerve invasion to the base of skull, cavernous sinus, and/or brainstem;
   c. Mucosal Melanoma;
   d. Occult (or unknown) primary malignancies of the head and neck;
3. Breast, any of the following: [49]
   a. Bilateral breast cancers requiring nodal treatment on at least one side;
   b. Breast cancer patients being treated with definitive intent and who have unfavorable anatomy (e.g., pectus excavatum) that would deliver unacceptably high doses to organs-at-risk;
   c. Early-stage breast cancer in which dose to the heart is unacceptably high with conventional photon or photon/electron using cardiac sparing techniques;
   d. Accelerated partial breast irradiation (APBI), regardless of laterality;
   e. Patients in whom internal mammary lymph nodes are targeted;
   f. Breast cancer patients who have limited ipsilateral arm range of motion and require treatment in the arms down position;
   g. Post-mastectomy radiotherapy when the patient has had bilateral implant-based reconstruction;
   h. Whole breast radiotherapy in patients with bilateral augmentation implants;
4. Thoracic, any of the following: [49]
   a. Primary or secondary tumors of the mediastinum, including thymic tumors, mediastinal tumors, mediastinal lymphomas and thoracic sarcomas;
   b. Early-stage lung cancer for which SBRT is not feasible secondary to anatomic considerations;
   c. Locally advanced lung cancer in which IMRT significantly reduces dose to normal tissues (ex: bilateral mediastinal disease, paraspinal tumors, N3 disease, reducing esophageal dose);
   d. Malignant pleural mesothelioma;
5. Gastrointestinal, any of the following: [49]
   a. Hepatocellular cancer, bile duct, gallbladder and cholangiocarcinoma cancers;
   b. Primary cancers of the esophagus and GE junction;
   c. Abdominal malignancies, including primary pancreatic, gastric and adrenal cancers;
   d. Primary and Secondary liver cancers;
   e. Anal and colorectal cancers;
6. Sarcomas, any of the following: [49]
   a. Retroperitoneal sarcomas;
   b. Desmoid tumors;
   c. Endometrial cancer;
7. Pelvic/Gynecological, any of the following:[49]

a. Cervical cancer;
b. Vulvar and vaginal cancers;
c. Endometrial cancer;

8. Genitourinary, any of the following: [49]
   a. Prostate cancer;
   b. Renal cancer;
   c. Bladder cancer;
   d. Penile cancer;
   e. Ureteral cancer:

Note: The above indications are anatomical sites reported by ASTRO where IMRT is commonly performed but may not be an all-inclusive listing. [49]

Background

IMRT changes the intensity of radiation in different parts of a single radiation beam while treatment is delivered. The dose of radiation given by each beam can also vary, enabling IMRT to simultaneously treat multiple areas within the target to different dose levels. Theoretical concerns about IMRT include dose inhomogeneity, additional time required for planning computation and quality assurance (QA) verification, and exposure of larger volumes of normal tissues to a lower dose of radiation.[3-4]

There were numerous studies done, including a multicenter, randomized, double-blind trial that indicated IMRT improved the homogeneity of the radiation dose distribution and decreased acute toxicity, when used for breast cancer.[5-9]

The National Comprehensive Cancer Network (NCCN) recommends IMRT in a number of cancer types, including cancers whose radiation treatment may affect organs or other critical structures at risk.

Coding Implications

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2024, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

CPT® Codes	Description
77385	Intensity modulated radiation treatment delivery (IMRT), includes guidance and tracking, when performed; simple
77386	Intensity modulated radiation treatment delivery (IMRT), includes guidance and tracking, when performed; complex

CPT® Codes	Description
77301	Intensity modulated radiotherapy plan, including dose-volume histograms for target and critical structure partial tolerance specifications
77338	Multi-leaf collimator (MLC) device(s) for intensity modulated radiation therapy (IMRT), design and construction per IMRT plan

HCPCS Codes	Description
G6015	Intensity modulated treatment delivery, single or multiple fields/arcs, via narrow spatially and temporally modulated beams, binary, dynamic MLC, per treatment session
G6016	Compensator-based beam modulation treatment delivery of inverse planned treatment using three or more high resolution (milled or cast) compensator, convergent beam modulated fields, per treatment session

Reviews, Revisions, and Approvals	Revision Date	Approval Date
Original approval date	08/23	08/23
Annual review. Description updated with no impact to criteria. Added criteria I.B.8. Hodgkin's and non-Hodgkin's lymphoma in close proximity to critical structures; I.B.9. Select rectal cancer cases where there is lymph node involvement or require treatment of the inguinal lymph nodes; I.B.10. Soft tissue sarcoma when organ at risk dose constraints cannot be met. References reviewed and updated. Reviewed by external specialist.	04/24	04/24
Annual review. Edits to description and background with no impact on criteria. Removed I.A., B., and C., along with II.A. - E. Added I.A. - D, along with I.E.1. - 8. Added note "The above indications……all-inclusive listing". Updated CPT codes. References reviewed and updated.	02/25	02/25

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Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and

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Note: For Medicaid members/enrollees, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

Note: For Medicare members/enrollees, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at http://www.cms.gov for additional information.

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