

# Clinical Policy: Intensity-Modulated Radiotherapy

Reference Number: CP.MP.69

Last Review Date: 02/19

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## Description

Medical necessity criteria for intensity-modulated radiotherapy (IMRT). IMRT is an advanced form of 3-dimensional (3-D) conformal radiation therapy that delivers a more precise radiation dose to the tumor while sparing healthy surrounding tissue. While IMRT empirically offers advances over other radiation therapies, accepted practices and the risks and benefits of IMRT over conventional or 3-D conformal radiation must be considered.

## Policy/Criteria

- I. It is the policy of health plans affiliated with Centene Corporation® that IMRT is **medically necessary** for any of the following indications:
  - A. Age  $\leq$  18 years;
  - B. Target volume is in close proximity to critical structures that must be protected;
  - C. The volume of interest must be covered with narrow margins to adequately protect immediately adjacent structures;
  - D. An immediately adjacent area has been previously irradiated and abutting portals must be established with high precision;
  - E. The target volume is concave or convex, and critical normal tissues are within or around that convexity or concavity;
  - F. Dose escalation is planned to deliver radiation doses in excess of those commonly utilized for similar tumors with conventional treatment;
  - G. Indications by cancer site include any of the following:
    1. Primary or benign tumor(s) of the central nervous system, including brain, brain stem, and spinal cord;
    2. Primary tumor(s) of the spine where spinal cord tolerance may be exceeded by conventional treatment;
    3. Primary or benign lesion(s) of the head and neck area including orbits, sinuses, skull base, aerodigestive tract (lips, mouth, tongue, tonsils, nose, throat, vocal cords and part of the trachea and esophagus), salivary glands, and thyroid;
    4. Anal or perianal cancer, excluding locally recurrent perianal cancer;
    5. Prostate cancer, definitive (curative) treatment;
    6. Vulvar cancer, definitive (curative) treatment;
    7. Cervical cancer, curative treatment, any of the following:
      - a. Post-hysterectomy;
      - b. For treatment that includes para-aortic nodes;
      - c. For high doses of radiation in the presence of gross disease in regional lymph nodes;
    8. Select breast cancer cases, any of the following:
      - a. Homogeneity of dose cannot be achieved with conventional three dimensional planning techniques, demonstrated by any of the following:
        - i. A maximum dose of greater than 110% is given to a volume of at least 0.3 cc;

- ii. The volume of breast tissue receiving 105% of the prescribed dose exceeds 10% (or 20% for a large volume breast defined as greater than 800 cc);
- iii. Hot spots in the inframammary fold are 105% or greater;
- b. The volume of lung tissue receiving 20 Gy exceeds 20%;
- c. The volume of heart tissue receiving 25 Gy exceeds 2%.

**Background**

A major goal of radiation therapy is the delivery of an appropriate dose of radiation to the targeted tissue while minimizing radiation exposure to the surrounding healthy tissue. The introduction of IMRT allowed for significant improvement of dose distributions by irradiating sub-regions of the target to different levels. It uses a computer-based planning method called inverse planning that allows the delivery of generally narrow, patient specific spatially and often temporally modulated beams of radiation to solid tumors within a patient.

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 QA verification, and exposure of larger volumes of normal tissues to a lower dose of radiation.

There were a number of studies done, including a multicenter, randomized, double-blind trial that have noted IMRT improved the homogeneity of the radiation dose distribution and decreased acute toxicity, when used for breast cancer.<sup>23,24,25,26,27</sup>

*NCCN*

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**

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| 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              |

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

| <b>HCPCS Codes</b> | <b>Description</b>  |
|--------------------|---|
| 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 3 or more high resolution (milled or cast) compensator, convergent beam modulated fields, per treatment session |

**ICD-10-CM Diagnosis Codes that Support Coverage Criteria**

| <b>ICD-10-CM Code</b> | <b>Description</b>  |
|-----------------------|---|
| C00.0-C14.8           | Malignant neoplasm of lip, oral cavity, and pharynx                       |
| C15.3-C15.9           | Malignant neoplasm of esophagus   |
| C21.0-C21.8           | Malignant neoplasm of anus and anal canal                                 |
| C25.0-C25.9           | Malignant neoplasm of pancreas  |
| C26.9                 | Malignant neoplasm of ill-defined sites within the digestive system       |
| C30.0                 | Malignant neoplasm of overlapping sites of larynx                         |
| C31.0-C31.9           | Malignant neoplasm of accessory sinus                                     |
| C32.0-C32.9           | Malignant neoplasm of larynx  |
| C33                   | Malignant neoplasm of trachea   |
| C41.0                 | Malignant neoplasm of bones of skull and face                             |
| C41.2                 | Malignant neoplasm of vertebral column                                    |
| C44.500               | Unspecified malignant neoplasm of anal skin                               |
| C48.0                 | Malignant neoplasm of retroperitoneum                                     |
| C48.1                 | Malignant neoplasm of specified parts of peritoneum                       |
| C48.8                 | Malignant neoplasm of overlapping sites of retroperitoneum and peritoneum |
| C50.011-C50.929       | Malignant neoplasm of breast  |
| C51.0-C51.9           | Malignant neoplasm of vulva   |
| C53.0-C53.9           | Malignant neoplasm of cervix uteri  |
| C61                   | Malignant neoplasm of prostate  |
| C69.60-C69.62         | Malignant neoplasm of orbit   |
| C70.0-C70.9           | Malignant neoplasm of meninges  |
| C71.0-C71.9           | Malignant neoplasm of brain   |

| <b>ICD-10-CM Code</b> | <b>Description</b>  |
|-----------------------|---|
| C72.0- C72.9          | Malignant neoplasm of spinal cord, cranial nerves and other parts of central nervous system |
| C76.1                 | Malignant neoplasm of thorax  |
| C76.2                 | Malignant neoplasm of abdomen   |
| C73                   | Malignant neoplasm of thyroid gland   |
| C76.3                 | Malignant neoplasm of pelvis  |
| D10.0-D11.9           | Benign neoplasm of mouth and pharynx  |
| D13.0                 | Benign neoplasm of esophagus  |
| D14.1                 | Benign neoplasm of larynx   |
| D14.2                 | Benign neoplasm of trachea  |
| D16.4                 | Benign neoplasm of bones of skull and face  |
| D31.60-<br>D31.62     | Benign neoplasm of unspecified site of orbit  |
| D33.0-D33.9           | Benign neoplasm of brain, and other parts of central nervous system                         |
| D34                   | Benign neoplasm of thyroid gland  |
| Z85.01                | Personal history of malignant neoplasm of esophagus   |
| Z85.020-<br>Z85.028   | Personal history of malignant neoplasm of stomach   |
| Z85.040-<br>Z85.048   | Personal history of malignant neoplasm of rectum, rectosigmoid junction, and anus           |
| Z85.07                | Personal history of malignant neoplasm of pancreas  |
| Z85.12                | Personal history of malignant neoplasm of trachea   |
| Z85.21                | Personal history of malignant neoplasm of larynx  |
| Z85.22                | Personal history of malignant neoplasm of nasal cavities, middle ear, and accessory sinuses |
| Z85.3                 | Personal history of malignant neoplasm of breast  |
| Z85.41                | Personal history of malignant neoplasm of cervix uteri                                      |
| Z85.44                | Personal history of malignant neoplasm of other female genital organs                       |
| Z85.46                | Personal history of malignant neoplasm of prostate  |
| Z85.810-<br>Z85.819   | Personal history of malignant neoplasm of lip, oral cavity, and pharynx                     |
| Z85.840               | Personal history of malignant neoplasm of eye   |
| Z85.841               | Personal history of malignant neoplasm of brain   |
| Z85.850               | Personal history of malignant neoplasm of thyroid   |
| Z86.011               | Personal history of benign neoplasm of brain  |
| Z86.018               | Personal history of other benign neoplasm   |

| <b>Reviews, Revisions, and Approvals</b>              | <b>Date</b> | <b>Approval Date</b> |
|---|-------------|----------------------|
| Policy Developed and reviewed by Radiation Oncologist | 02/14       | 03/14                |
| References reviewed and updated                       | 02/15       | 03/15                |

| <b>Reviews, Revisions, and Approvals</b>   | <b>Date</b> | <b>Approval Date</b> |
|--|-------------|----------------------|
| Template updated<br>References reviewed and updated  | 02/16       | 03/16                |
| Policy updated. References reviewed. In the policy statement, added under ‘Select breast cancer cases: When homogeneity of dose is essential and the patient has at least one of the following conditions’. The two conditions were previously listed.<br>Coding tables updated  | 02/17       | 03/17                |
| References reviewed and updated.   | 02/18       | 02/18                |
| Removed indications for “cases of thoracic and abdominal malignancies when target volume is in proximity to critical structures” and “other pelvic and retroperitoneal tumors that meet the requirements for medical necessity” as their meaning is contained in other existing criteria.  | 05/18       |                      |
| Added 77385 to CPT code list   | 06/18       |                      |
| Added thyroid and tonsils as subtypes to head and neck cancer list; added cervical, vulvar, perianal cancer indications per NCCN. Updated background. Removed option for CNS, spinal, and head and neck tumors to be metastatic. Replaced descriptive breast cancer indication criteria with specific radiation parameters. Removed deleted CPT code 0073T and added HCPCS G6016. Specialist reviewed. | 02/19       | 02/19                |
| Coding updates: Removed deleted CPT 77418; updated ICD-10-CM codes per 02/19 criteria updates.   | 04/19       |                      |

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**Important Reminder**

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**Note: For Medicare members,** to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs and 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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