Description

Intensity modulated radiation therapy (IMRT) is an advanced form of three dimensional conformal radiation therapy (3D CRT) that utilizes computer generated images that show the size and shape of the tumor. The computer generated images are utilized to precisely plan and then deliver tightly focused radiation beams to the tumor. The focused radiation is delivered directly to the tumor or specific areas within the tumor by way of computer controlled X-ray accelerators. This therapy allows for increased precision by the conforming of the radiation to the planned target site while significantly reducing the amount of radiation to surrounding healthy tissues.

Different techniques are utilized to control the radiation amount given during IMRT. The most common approach is the use of multileaf collimators (MLCs). These devices are attached to the linear accelerator. The MLCs are composed of computer controlled tungsten “leaves” or panels that move while the radiation beam is directed toward the target. The leaves act as filters that block out certain areas. This modifies...
Humana's documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.

the beam’s intensity so that the radiation is distributed according to the treatment plan.

Another delivery approach is compensator based IMRT. This approach utilizes custom made (based on the three dimensional images and the treatment plan) high density blocks to control the administration of the radiation. The blocks are put into place, the patient is positioned and the radiation is delivered.

Image guided radiation therapy (IGRT) utilizes frequent imaging during the course of an IMRT radiation therapy session (intrafraction) to purportedly deliver radiation to the target area, while sparing the surrounding tissues. Various methods are utilized, including computed tomography (CT) scans, ultrasound, magnetic resonance imaging (MRI) or the implantation of electromagnetic transponders prior to radiation therapy for prostate cancer (e.g., Calypso 4D Localization System, ViewRay system). (Refer to Coverage Limitations section)

Fiducial markers are gold seeds or stainless steel screws that are implanted in and/or around a soft tissue tumor or within the bony spine, to act as a radiologic landmark, to more precisely define the target lesion's position. Fiducial markers may be placed using CT, endoscopic or surgical guidance.

Coverage Determination

Humana members may be eligible under the Plan for IMRT in certain circumstances in which there is a concern about damage to surrounding critical structures with the use of external beam or three-dimensional conformal radiation therapy, which includes the following indications:

- Anal cancer; OR
- Brain tumors in close proximity to critical structures; OR
- Esophageal cancer where dose exceeds 50 GY; OR
- Gallbladder cancer where dose exceeds 50 GY; OR
- Head and neck cancer excluding T1 and T2 glottic cancer; OR

See the DISCLAIMER. All Humana member health plan contracts are NOT the same. All legislation/regulations on this subject may not be included. This document is for informational purposes only.
Intensity Modulated Radiation Therapy (IMRT)

Humana's documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.

- Left breast cancer if the lesion is in close proximity to the heart or other cardiovascular structures; OR
- Lung cancer if the lesion is in close proximity to the heart or other critical structures; OR
- Pancreatic cancer where dose exceeds 50 GY; OR
- Postoperative radiation to pelvis for endometrial cancer; OR
- Prostate cancer (high risk), as defined by:
  - Clinical stage T3a; OR
  - Clinical stage T3b to T4; OR
  - Gleason score 8 to 10; OR
  - Prostate specific antigen (PSA) greater than 20ng/ml

Humana members may be eligible under the Plan for placement of fiducial markers if the above criteria are met, and the radiation target is not clearly visible, and bony anatomy is not sufficient for adequate target alignment.

**Coverage Limitations**

Humana members may NOT be eligible under the Plan for IMRT for any indications other than those listed above including, but may not be limited to, the following:

- Intrafraction localization and tracking of target or patient motion during delivery of radiation therapy; OR
- Right breast cancer

All other indications are considered not medically necessary as defined in the member’s individual certificate. Please refer to the member’s individual certificate for the specific definition.

**Background**

Additional information about cancer may be found from the following websites:

- American Cancer Society - http://www.cancer.org

See the DISCLAIMER. All Humana member health plan contracts are NOT the same. All legislation/regulations on this subject may not be included. This document is for informational purposes only.
Humana’s documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.


Medical Alternatives

Alternatives to IMRT include, but may not be limited to, the following:

- Brachytherapy (Please refer to Brachytherapy Medical Coverage Policy)
- Neutron beam radiation therapy (Please refer to Proton and Neutron Beam Radiation Therapy Medical Coverage Policy)
- Proton beam radiation therapy (Please refer to Proton and Neutron Beam Radiation Therapy Medical Coverage Policy)
- Standard radiation therapy
- Stereotactictic radiosurgery (Please refer to Stereotactic Radiosurgery [SRS] Medical Coverage Policy)
- Three-dimensional conformal radiation therapy

To make the best health decision for the patient’s individual needs, the patient should consult his/her physician.

Provider Claims Codes

Any CPT, HCPCS or ICD codes listed on this medical coverage policy are for informational purposes only. Do not rely on the accuracy and inclusion of specific codes. Inclusion of a code does not guarantee coverage and or reimbursement for a service or procedure.

<table>
<thead>
<tr>
<th>CPT® Code(s)</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>31626</td>
<td>Bronchoscopy, rigid or flexible, including fluoroscopic guidance, when performed; with placement of fiducial markers, single or multiple</td>
<td></td>
</tr>
</tbody>
</table>

See the DISCLAIMER. All Humana member health plan contracts are NOT the same. All legislation/regulations on this subject may not be included. This document is for informational purposes only.
Humana’s documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to [http://apps.humana.com/tad/tad_new/home.aspx](http://apps.humana.com/tad/tad_new/home.aspx) to verify that this is the current version before utilizing.

<table>
<thead>
<tr>
<th>CPT® Category III Code(s)</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>32553</td>
<td>Placement of interstitial device(s) for radiation therapy guidance (e.g., fiducial markers, dosimeter), percutaneous, intra-thoracic, single or multiple</td>
<td></td>
</tr>
<tr>
<td>49327</td>
<td>Laparoscopy, surgical; with placement of interstitial device(s) for radiation therapy guidance (e.g., fiducial markers, dosimeter), intra-abdominal, intrapelvic, and/or retroperitoneum, including imaging guidance, if performed, single or multiple (List separately in addition to code for primary procedure)</td>
<td></td>
</tr>
<tr>
<td>49411</td>
<td>Placement of interstitial device(s) for radiation therapy guidance (e.g., fiducial markers, dosimeter), percutaneous, intra-abdominal, intra-pelvic (except prostate), and/or retroperitoneum, single or multiple</td>
<td></td>
</tr>
<tr>
<td>49412</td>
<td>Placement of interstitial device(s) for radiation therapy guidance (e.g., fiducial markers, dosimeter), open, intra-abdominal, intrapelvic, and/or retroperitoneum, including image guidance, if performed, single or multiple (List separately in addition to code for primary procedure)</td>
<td></td>
</tr>
<tr>
<td>55876</td>
<td>Placement of interstitial device(s) for radiation therapy guidance (e.g., fiducial markers, dosimeter), prostate (via needle, any approach), single or multiple</td>
<td></td>
</tr>
<tr>
<td>77301</td>
<td>Intensity modulated radiotherapy plan, including dose-volume histograms for target and critical structure partial tolerance specifications</td>
<td></td>
</tr>
<tr>
<td>77338</td>
<td>Multi-leaf collimator (MLC) device(s) for intensity modulated radiation therapy (IMRT), design and construction per IMRT plan</td>
<td></td>
</tr>
<tr>
<td>77418</td>
<td>Intensity modulated treatment delivery, single or multiple fields/arcs, via narrow spatially and temporally modulated beams, binary, dynamic MLC, per treatment session</td>
<td></td>
</tr>
</tbody>
</table>

See the DISCLAIMER. All Humana member health plan contracts are NOT the same. All legislation/regulations on this subject may not be included. This document is for informational purposes only.
Humana’s documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>0073T</td>
<td>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</td>
<td></td>
</tr>
<tr>
<td>0197T</td>
<td>Intra-fraction localization and tracking of target or patient motion during delivery of radiation therapy (e.g., 3D positional tracking, gating, 3D surface tracking), each fraction of treatment</td>
<td>Not Covered</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICD-9 Procedure Code(s)</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.29</td>
<td>Other radiotherapeutic procedure</td>
<td></td>
</tr>
</tbody>
</table>

**Medical Terms**

**Accelerator** - A machine for increasing the kinetic energy of subatomic particles or atomic nuclei and focusing them on a target.

**Brachytherapy** - A procedure in which a radiation source, in the form of seeds, ribbons or capsules, is placed directly into or near a cancerous tumor inside the body; also known as internal radiation, implant radiation or interstitial radiation therapy.

**Computed Tomography** - Radiography in which three-dimensional image of a body structure is constructed by computer from a series of cross-sectional scans along a single axis.

**Conform** - To make similar in form, nature or character.

**Density** - Thickness of consistency; impenetrability.

**Distribute** - To disperse through a space or over an area; spread; scatter.

**Electromagnetic** - Of, pertaining to or produced by, magnetism (attraction), which is developed by the passage of an electric current.

See the **DISCLAIMER**. All Humana member health plan contracts are **NOT** the same. All legislation/regulations on this subject may not be included. This document is for informational purposes only.
Humana’s documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.

**Linear Accelerator** - An electron, a proton or a heavy-ion accelerator in which the paths of the particles accelerated are essentially straight lines rather than circles or spirals; also called linac.

**Magnetic Resonance Imaging (MRI)** - An imaging modality that utilizes a magnetic field and pulses of radiowave energy to make pictures of organs and structures in the body.

**Multileaf Collimator (MLC)** - Used to alter the shape of the beam. Usually made of tungsten, MLC leaves range from 0.4mm-1cm wide and each leaf can be moved individually to match each patient’s specific radiotherapy treatment plan.

**Proton Beam Radiation Therapy** - A type of external beam radiation that utilizes protons (positively charged subatomic particles) that are precisely targeted to a specific tissue mass. Proton beams have the capability to penetrate deep into tissues to reach tumors while delivering less radiation to superficial tissues such as the skin.

**Stereotactic Radiosurgery (SRS)** - A procedure in which three-dimensional images are utilized to directly and precisely focus radiation to obliterate abnormal tissues. SRS was designed to cause destruction to the target tissue with minimal exposure to surrounding healthy tissue.

**Three Dimensional** - Having, or seeming to have, the dimension of depth as well as width and height.

**Transponder** - A radio, radar or sonar transceiver that automatically transmits a signal upon reception of a designated incoming signal.

**Tungsten** - A hard, brittle, corrosion resistant and gray to white metallic element extracted from wolframite, scheelite and other minerals, having the highest melting point and lowest vapor pressure of any metal.

**References**


Intensity Modulated Radiation Therapy (IMRT)

Effective Date: 03/27/2014
Revision Date: 03/27/2014
Review Date: 03/27/2014
Policy Number: CLPD-0322-008
Page: 9 of 15

Humana's documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.


Hayes, Winifred S. Health Technology Brief. Postoperative intensity modulated

See the DISCLAIMER. All Humana member health plan contracts are NOT the same. All legislation/regulations on this subject may not be included. This document is for informational purposes only.
Humana’s documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.


See the DISCLAIMER. All Humana member health plan contracts are NOT the same. All legislation/regulations on this subject may not be included. This document is for informational purposes only.
Humana’s documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.


Humana’s documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.


National Guideline Clearinghouse Website. American College of Radiology. ACR appropriateness criteria. Local regional therapy for resectable oropharyngeal...


UpToDate Website. Head and neck squamous cell carcinoma of unknown primary.


Humana’s documents are updated regularly online. When printed, the version of this document becomes uncontrolled. Do not rely on printed copies for the most up-to-date version. Refer to http://apps.humana.com/tad/tad_new/home.aspx to verify that this is the current version before utilizing.


See the DISCLAIMER. All Humana member health plan contracts are NOT the same. All legislation/regulations on this subject may not be included. This document is for informational purposes only.