AMERICAN SOCIETY FOR RADIATION ONCOLOGY (ASTRO)
Brachytherapy Model Policy

Indications and Limitations of Coverage and/or Medical Necessity

This Model Policy\(^1\) addresses coverage for sealed-source Brachytherapy. It does not cover radioimmunotherapy or infusional/oral radionuclide therapy. There is a separate ASTRO model policy that specifically addresses Microspheres Hepatic Brachytherapy.

Radiation oncology consists of two primary treatment modalities: external beam radiation therapy (EBRT) and brachytherapy. Brachytherapy is a type of radiation therapy that utilizes natural or manufactured radioactive isotopes or radionuclides that are temporarily or permanently implanted in or near the tumor or target tissue to treat malignancies or certain benign conditions. Brachytherapy is based upon the principle that radiation dose decreases rapidly with distance from source of radiation. Therefore, brachytherapy allows the delivery of a high dose of radiation to a well-defined target while the dose of radiation to adjacent normal structures is relatively low. Brachytherapy may be indicated as a primary or adjunctive therapy in a variety of tumors.

The brachytherapy dose rate is determined by the intensity of the radioactive source. Brachytherapy dose rate is described as LDR (low dose rate), HDR (high dose rate) and PDR (pulsed dose rate).

- **LDR**: In a temporary LDR implant, the radiation dose is delivered continuously over one to several days in a hospital setting, with the patient managed under radiation safety precautions with limits to nursing and visitor time in order to protect them from low-level radiation exposure. A permanent LDR implant uses permanently implanted sources, and can be performed as either an ambulatory or in-patient procedure. The permanent implant continuously delivers radiation as the isotope decays.
- **HDR**: is performed by using a remote afterloading device to transport the radioactive source(s) to the target. HDR allows the dose to be delivered in minutes. It is often given in a series of multiple fractions and can be performed either on an outpatient or inpatient basis.
- **Pulsed Dose Rate (PDR)** Brachytherapy: Uses sources of intermediate strength and delivers a series of doses on a 1-2 hourly schedule over a 1-2 day treatment period. It is also a form of HDR remote afterloading.

Brachytherapy is further described by the means the radioactive material is placed into or onto the tumor or target tissue.

\(^1\) ASTRO Model Policies were developed as a means to efficiently communicate what ASTRO believes to be correct coverage policies for radiation oncology services. The ASTRO Model Policies do not serve as clinical guidelines and they are subject to periodic review and revision without notice. The ASTRO Model Policies may be reproduced and distributed, without modification, for noncommercial purposes.
• Interstitial application – sources are inserted directly into a tumor/target tissue. Example – brachytherapy to the prostate, breast, head and neck, choroid of eye, lung/pleura, brain
• Intracavitary (also called intraluminal) application – sources are inserted into a body cavity. Example - vagina, uterus, bronchus, esophagus
• Surface application – sources are placed directly on an external tumor/target surface. Example – eye (conjunctiva), skin, breast.

Electronic brachytherapy (EBT) devices were approved by the FDA via the 510(k) mechanism with reference to predicate devices that provided high dose rate (HDR) brachytherapy. Commercially available EBT devices closely resemble the size and shape of commercially available HDR brachytherapy devices and replicate the radiation dose distribution administered with HDR brachytherapy devices. CPT code 0182T, which is used to describe electronic brachytherapy, is a Category III, emerging technology code and published literature establishing the clinical equivalence to HDR is evolving.

The process of care for brachytherapy consists of a series of steps including:
• insertion of non-radioactive applicators, catheters, or needles that receive or transmit the radioactive material into the patient’s body followed by later loading of temporary radioactive material, or insertion of permanently implanted radioactive seeds whose intensity decays over time;
• image acquisition to support the treatment planning for brachytherapy dose calculation;
• computerized dosimetry that provides tumor and normal tissue doses.

The exact sequence of events depends upon the selected applicator and dose rate delivery format. The choice of applicators and the actual placement of the catheter or needle may be performed by the radiation oncologist alone, or in collaboration with another physician (e.g. gynecologist, urologist, pulmonologist).

Indications for Brachytherapy

Brachytherapy may be used independently as the sole treatment modality or as an adjunctive treatment in combination with external beam therapy and other modalities such as surgery or chemotherapy. LDR and HDR procedures may be given with intent to cure, palliate, or to obtain local control (either cure or palliation). Both may be given in conjunction with a course of external beam radiation therapy, or as single modalities.

Brachytherapy may be performed concomitantly with surgical resection or in conjunction with procedures such as endoscopy or angioplasty, which are required to achieve access to the site of the disease.

Brachytherapy is indicated for the following disease sites:
• Brain and nervous system cancer
• Eye tumors, e.g. ocular melanoma, choroidal metastasis
• Head and Neck
• Breast cancer
• Intravascular/intracoronary stenting
- Lung cancer
- GI cancer
- Gynecologic cancer
- Prostate cancer
- Skin cancer
- Soft tissue sarcoma

Brachytherapy is also indicated in certain clinical scenarios:
- Retreatment of previously treated areas
- As a boost to external treatment

This list of indications is not exhaustive and while brachytherapy is not indicated in the routine management for other cancers, brachytherapy is often a reasonable and necessary treatment for other sites. There is no definitive list of “approved sites” nor is it possible to preclude some cancers solely on the basis of the primary site of origin.

**CPT/HCPCS Codes**

Many of the CPT codes in the radiation oncology section can be used for both external beam radiation therapy (EBRT) and brachytherapy, while others are specific to one modality or the other. The CPT codes listed below are used in brachytherapy treatment. Please refer to the AMA CPT book for a description of the following codes, and refer to the ASTRO/ACR Guide to Radiation Oncology Coding for more detailed coding guidance.

**Electronic Brachytherapy**

The following Category III code should be used for electronic brachytherapy.

0182T

**Surgical Procedure Codes**

The following codes are surgical procedure codes used for placement of brachytherapy applicators including catheters or needles or markers in various sites.

0190T
19296
19297
19298
20555
31627
31643
32553
41019
43241
49411
55875
55876
55920
57155
**Procedure Guidance and Volume Study Codes**
The following imaging codes may be used during the brachytherapy course of treatment.
- 76000
- 76001
- 76872
- 76873
- 76950
- 76965
- 77002
- 77012
- 77014
- 77021

**Clinical Treatment Planning**
The following codes may be used for therapeutic radiology treatment planning.
- 77261-77263

**Simulation, Medical Radiation Physics, Dosimetry, Treatment Devices and Other Special Services**
The following codes may be used for the phase of care in which the radiation oncology team develops dosimetry, treatment devices, isodose plans and other special services during the brachytherapy course of treatment.
- 77280-77295
- 77300
- 77326
- 77327
- 77328
- 77331
- 77332
- 77333
- 77334
- 77336
- 77370
- 77470

**Treatment Infusion of Radioisotope**
The following code may be used for intravenous infusion of an unsealed source by a radiation oncologist.
- 77750

**LDR Treatment Delivery**
The following procedure codes may be used for LDR brachytherapy delivery.
Intracavitary

Interstitial

**HDR Treatment Delivery**
The following procedure codes may be used for HDR radiation treatment delivery. Selection of
the correct code is based on the number of channels.
77785-77787

**Surface Applicator Treatment Delivery**
The following code may be used when performing surface application brachytherapy.
77789

**Supervision and Handling, Loading of Radiation Sources**
The following code may be used for the supervision, handling and loading of radioelements for
manual loading LDR brachytherapy.
77790

**Unlisted Procedure Code**
The following code may be used for brachytherapy procedures that are not correctly described by
any of the currently available codes.
77799

**ICD-9 Codes that Support Medical Necessity**
ICD-9-CM code listings may cover a range and include truncated codes. It is the provider's
responsibility to avoid truncated codes by selecting a code(s) carried out to the highest level of
specificity and selected from the ICD-9-CM code book appropriate to the year in which the
claim is submitted.

It is not enough to link the procedure code to a correct, payable ICD-9-CM diagnosis code. The
diagnosis or clinical suspicion must be present for the procedure to be paid.

<table>
<thead>
<tr>
<th>ICD-9 Code(s)</th>
<th>Diagnosis</th>
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<tbody>
<tr>
<td>140.0 through 149.9, inclusive</td>
<td>Head &amp; Neck cancer, multiple primary sites</td>
</tr>
<tr>
<td>150.0 through 159.9, inclusive</td>
<td>Digestive organs and peritoneum</td>
</tr>
<tr>
<td>160.0 through 165.9, inclusive</td>
<td>Respiratory organs and intrathoracic organs</td>
</tr>
<tr>
<td>170.0 through 170.9, inclusive</td>
<td>Bone</td>
</tr>
<tr>
<td>171-173.9, inclusive, 198.2</td>
<td>Connective tissue and skin</td>
</tr>
<tr>
<td>174-175.9, inclusive 198.81, 233.0</td>
<td>Breast</td>
</tr>
<tr>
<td>179 through 184.9, inclusive</td>
<td>Gynecological</td>
</tr>
<tr>
<td>185 through 189.9, inclusive</td>
<td>Genitourinary organs</td>
</tr>
<tr>
<td>190.0 through 199.1, inclusive</td>
<td>Other and unspecified sites</td>
</tr>
<tr>
<td>200.0-208.9, inclusive</td>
<td>Lymphatic and hematopoietic</td>
</tr>
<tr>
<td>235.0 through 237.72, inclusive,</td>
<td>Neoplasms of uncertain behavior</td>
</tr>
<tr>
<td>237.9, 238.0- 238.9, inclusive</td>
<td></td>
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<tr>
<td>320 through 349.9, inclusive</td>
<td>Nervous System</td>
</tr>
<tr>
<td>372.40- 372.45, inclusive</td>
<td>Pterygium</td>
</tr>
</tbody>
</table>
General Information

- The physician’s professional component for the brachytherapy procedure includes patient supervision and management during the brachytherapy procedure; for brachytherapy codes that have a 90 day global period, it includes discharge day management and follow up care for the global period.
- When E/M services are performed on the same day as brachytherapy, a –25 modifier should accompany the E/M consultation code to reflect that a separate E/M service was provided on the same day.

Documentation requirements:

- Documentation supporting the medical necessity of these services, such as ICD-9-CM codes, must be submitted with each claim.
- The treatment goal (curative, palliative or tumor control) must be documented in the medical record.
- The record must contain documentation of the patient’s informed consent to treatment.
- A written, signed and dated prescription or treatment plan designed by the radiation oncologist must be on file. The prescription must include all of the following information: designation of the treatment site, designation of the isotope, designation of the number of source positions, and the planned dose to selected points described during dosimetry.
- Given the multiplicity of services that are inherent in brachytherapy, it is essential that the medical records reflect each service in a clear linear and temporally logical form. Flow charts, where helpful, are recommended. All procedures should be documented with a procedural note. A treatment summary should be prepared.
- Since HDR treatments are typically given as a series (often twice daily, over a period of days or weeks) they should be individually documented.

REFERENCES

General

1. American College of Radiology (ACR) Standard for the Performance of High-Dose-Rate Brachytherapy, 2000
2. ACR Standard for the Performance of Low-Dose-Rate Brachytherapy, 2000
4. ACR Standard for the Performance of Brachytherapy Physics: Remotely-Loaded HDR Sources, 2000
5. ACR Standard for Transperineal Permanent Brachytherapy of Prostate Cancer, 2000

Brain


Breast

7. ACR-ASTRO Practice Guideline for the Performance of High-Dose-Rate Brachytherapy Revised 2010
8. ACR-ASTRO Practice Guideline for the Performance of Low-Dose-Rate Brachytherapy Revised 2010


12. Consensus statement for Accelerated Partial Breast Irradiation; the American Society of Breast Surgeons.


Cervix

Colon and Rectum


Esophagus


Endometrium


**Eye**


Head and Neck


**Intracoronary**


**Lung**


Sarcomas


Skin


Vagina