Stereotactic Body Radiation Therapy (SBRT)

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. Please refer to the CMS website at http://www.cms.gov for additional information.

Note: For Medicaid members/enrollees, circumstances when state Medicaid coverage provisions conflict with the coverage provisions within 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.

DISCUSSION

Stereotactic Body Radiation Therapy (SBRT) is a specialized type of external beam radiation therapy that uses focused radiation beams targeting a well-defined tumor. It relies on detailed imaging, computerized three-dimensional treatment planning and precise treatment set-up to deliver the radiation dose with extreme accuracy. There are two types of stereotactic radiation:

- Stereotactic radiosurgery (SRS) delivers one to five stereotactic radiation treatments to the brain or spine. SRS is delivered by a team involving a radiation oncologist and a neurosurgeon. This treatment does not involve surgery.
- Stereotactic body radiation therapy (SBRT) or stereotactic ablative radiotherapy (SABR) delivers one to five stereotactic radiation treatments to tumors within the body, excluding the brain or spine. The treatment delivers extremely precise, very intense doses of radiation to cancer cells while minimizing damage to healthy tissue. [1,2]

SRS/SBRT/SABR is generally best for very small tumors. Doctors use specialized scans to pinpoint exactly where the tumor target is located. Some treatment delivery requires accounting for the internal motion of the tumor as well as for patient motion. Immobilization devices and systems to reposition the patient are often utilized. Furthermore, all SBRT is performed with image guidance to confirm the patient is in the correct position. treatment machines can adjust for patient motion, such as breathing. SBRT is meant to represent a complete course of therapy and is not to be used as a boost following conventional radiation. SBRT is also known as stereotactic ablative radiotherapy, or stereotactic ablative body radiation (SABR). SBRT has a potential role in the treatment of smaller primary, metastatic, and recurrent tumors. [1,2]

SBRT is used for stage 1 lung cancer, low-risk prostate cancer, liver cancer, and pancreatic cancer. It is also used to treat tumors that have spread or metastasized from other sites. This includes oligometastatic disease, in which a patient has just one to five metastatic sites. In these cases, SBRT may halt the further spread of metastatic disease.

Advantages of SBRT over surgery include the avoidance of a hospital stay and recovery period. The treatment also may be an option for those who are not healthy enough for surgery. Conventional radiation is typically delivered in relatively small doses each day over several weeks. This can delay or interfere with other cancer treatments, such as chemotherapy. By contrast, SBRT can usually be given in five or fewer daily sessions and requires no anesthesia. SBRT also can lead to better outcomes and fewer side effects than conventional radiation therapy. [1,2]

Stereotactic radiation may be delivered by several different devices; brand name stereotactic treatment machines include Axesse®, CyberKnife®, Gamma Knife®, Edge®, Halcyon®, Novalis Tx®, TomoTherapy®, Truebeam®, Unity®, Versa HD® or ViewRay®. It is important not to confuse these brand names with the actual type of stereotactic radiation under consideration.[1]

DEFINITIONS

- **Brachytherapy (BT) -** Brachytherapy is a procedure that involves placing radioactive material inside your body. Brachytherapy is sometimes called internal radiation.
- **Definitive radiation treatment** – Radiation therapy used with curative intent.
- **Fractions -** A way of dividing a total dose of radiation into separate doses to be administered over a period of time.
- **Gray (Gy) -** One of the two units used to measure the amount of radiation absorbed by an object or person, known as the absorbed dose. One gray (Gy) is the international system of units (SI) equivalent of 100 rads, which is equal to an absorbed dose of 1 Joule/kilogram.
- **Magnetic resonance imaging (MRI) -** Magnetic resonance imaging is a medical imaging technique used in radiology to form pictures of the anatomy and the physiological processes of the body. MRI scanners use strong magnetic fields, magnetic field gradients, and radio waves to generate images of the organs in the body.
- **National Comprehensive Cancer Network® (NCCN®) -** An alliance of 32 leading cancer centers devoted to patient care, research, and education. The NCCN guidelines are utilized for Radiation Therapy and Medical Oncology standards. NCCN consensus clinical standards are periodically updated and NantHealth, Inc. reviews these and updates its policies within a timely manner.
- **Palliative radiation therapy -** Treatment given to help relieve the symptoms and reduce the suffering caused by cancer or other life-threatening diseases. Palliative therapy may help a person feel more comfortable, but it does not treat or cure the disease. Palliative therapy may be given with other treatments from the time of diagnosis until the end of life.
- **Stereotactic ablative body radiation therapy (SABR)/stereotactic body radiation therapy (SBRT) -** A type of external radiation therapy that uses special equipment to position a patient and precisely deliver radiation to tumors in the body (except the brain). The total dose of radiation is divided into smaller doses given over several days. This type of radiation therapy helps spare normal tissue.
- **Stereotactic radiosurgery (SRS) -** Stereotactic radiosurgery (SRS) uses many precisely focused radiation beams to treat tumors and other problems in the brain, neck, lungs, liver, spine, and other parts of the body.

POLICY

The following table outlines the criteria that must be met for the number of fractions and dosing relative to stereotactic body radiation therapy treatments. This dosing table represents evidence-based doses and fractions for the designated type of cancer treatment. Variations outside of the ranges may indicate a deviation from standard treatment.

Stereotactic Body Radiation Therapy			
	Number of Fractions	**Total Dose**	**Technique**
Lung - Inoperable, Palliative, Recurrent	1-5	25-60 Gy	SBRT
Prostate - Definitive	5	36-42.70 Gy	SBRT
Hepatocellular	3-5	30-50 Gy	SBRT
Pancreatic - Definitive	3-5	25-50 Gy	SBRT
Oligometastases	1-5	16-60 Gy	SBRT

REFERENCES

1. SRS SBRT - American Society for Radiation Oncology (ASTRO) - American Society for Radiation Oncology (ASTRO). https://www.rtanswers.org/RTAnswers/media/RTAnswers/patient%20materials/PDFs/Stereotactic.pdf. Accessed May 23, 2022.
2. Dictionary of cancer terms. National Cancer Institute. https://www.cancer.gov/publications/dictionaries/cancer-terms/. Accessed May 23, 2022.
3. FAQ - SRS SBRT - American Society for Radiation Oncology (ASTRO) - American Society for Radiation Oncology (ASTRO). https://www.astro.org/Daily-Practice/Coding/Coding-Guidance/Coding-FAQ-39;s-and-Tips/FAQ-SRS-SBRT. Accessed May 23, 2022.
4. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Hepatobiliary Cancers. (Version 1.2022). Available at https://www.nccn.org/professionals/physician_gls/pdf/hepatobiliary.pdf. ©National Comprehensive Cancer Network, 2022.

Please see all related anatomical policies that include stereotactic body radiation therapy as a treatment. (Anal Cancer, Central Nervous System Cancers, Colon and Rectal Cancer, Head and Neck Cancer, Liver and Hepatobiliary Tract, Lung Cancer, Pancreatic Cancer, and Soft Tissue Sarcoma)

CODING [CPT®, ICD-10, HCPCS] *

*Procedure codes appearing in medical policy documents are only included as a general reference. This list may not be all-inclusive and is subject to updates. In addition, the codes listed are not a guarantee of payment.

Code	Description
C25	Malignant neoplasm of pancreas
C25.0	Malignant neoplasm of head of pancreas
C25.1	Malignant neoplasm of body of pancreas
C25.2	Malignant neoplasm of tail of pancreas
C25.3	Malignant neoplasm of pancreatic duct
C25.4	Malignant neoplasm of endocrine pancreas
C25.7	Malignant neoplasm of other parts of pancreas
C25.8	Malignant neoplasm of overlapping sites of pancreas
C25.9	Malignant neoplasm of pancreas, unspecified
C34	Malignant neoplasm of bronchus and lung
C34.0	Malignant neoplasm of main bronchus
C34.00	Malignant neoplasm of unspecified main bronchus
C34.01	Malignant neoplasm of right main bronchus
C34.02	Malignant neoplasm of left main bronchus
C34.1	Malignant neoplasm of upper lobe, bronchus or lung
C34.10	Malignant neoplasm of upper lobe, unspecified bronchus or lung
C34.11	Malignant neoplasm of upper lobe, right bronchus or lung
C34.12	Malignant neoplasm of upper lobe, left bronchus or lung

Code	Description
C34.2	Malignant neoplasm of middle lobe, bronchus or lung
C34.3	Malignant neoplasm of lower lobe, bronchus or lung
C34.30	Malignant neoplasm of lower lobe, unspecified bronchus or lung
C34.31	Malignant neoplasm of lower lobe, right bronchus or lung
C34.32	Malignant neoplasm of lower lobe, left bronchus or lung
C34.8	Malignant neoplasm of overlapping sites of bronchus and lung
C34.80	Malignant neoplasm of overlapping sites of unspecified bronchus and lung
C34.81	Malignant neoplasm of overlapping sites of right bronchus and lung
C34.82	Malignant neoplasm of overlapping sites of left bronchus and lung
C34.9	Malignant neoplasm of unspecified part of bronchus or lung
C34.90	Malignant neoplasm of unspecified part of unspecified bronchus or lung
C34.91	Malignant neoplasm of unspecified part of right bronchus or lung
C34.92	Malignant neoplasm of unspecified part of left bronchus or lung
C67.0 - C67.9	Malignant neoplasm of the bladder
C64.1 - C66.9	Malignant neoplasm of the kidney
C68.0 - C68.9	Malignant neoplasm of other and unspecified urinary organs
C73.0	Malignant neoplasm of the thyroid gland
C74.00 - C75.9	Malignant Neoplasm of the endocrine glands
C76.0 - C76.8	Malignant neoplasm of other specified ill-defined sites and various regions
C45.7	Mesothelioma of other sites
C78.00 - C80.1	Metastatic disease other than lymph node metastases
77280	Verification simulation, if performed, is included in IMRT planning (77301)/ 3-D Conformal Planned
77290	Simulation; work of 77290 is included in IMRT planning (77301)/3Dconformal Planned
77295	IMRT, not planned/3D conformal planned
77300	IMRT, planned/3D conformal
77301	Simulation and planning – IMRT planned/ 3D conformal not planned
77334	Immobilization (when applicable) and 3-D planned fields and IMRT Planned
77371	Single fraction delivery
77372	Single fraction delivery
77373	Multifaction delivery

REVISION AND REVIEW HISTORY

No.	Description	Date(s)
1	Original Effective Date:	5/25/2022
2	Policy Review Dates:	5/252022, 5/31/2022, 8/30/2022, 8/2023
3	Policy Revision Dates:	5/25/2022, 5/31/2022, 8/30/2022
4	Department Owner:	Medical Affairs
5	NH Advisory Committee Approval Dates:	5/25/2022, 5/31/2022, 8/31/2022, 8/2023
6	Revision Changes:	5/31/2022 - Grammatical non-material changes 8/31/2022 - Prostate – Definitive – dose minimum changed from 35 Gy to 36 Gy