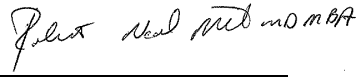


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Approved: **Robert Neal Mills, MD**

Date: 07/28/11

**Description:**

Stereotactic radiosurgery (SRS) is a procedure in which no incision is made but rather three-dimensional images are utilized to direct precisely focused radiation to obliterate abnormal tissues. Because it is so precise, SRS allows a higher dose of radiation to be given to the target tissue with minimal exposure to surrounding healthy tissue. SRS also has advantages over open surgery in that it is not as invasive and can address lesions that are difficult to access as well as multiple lesions. The major disadvantages to SRS are that it is generally used for smaller lesions and it results in slow tumor shrinkage over weeks or months rather than relieving mass effect immediately.

Fractionated or staged SRS is also known as stereotactic radiotherapy (SRT). This is a process in which the total dose of stereotactic radiation is divided into several smaller doses given on separate days. The difference between SRS and SRT is that in SRS, radiation is delivered at a high intensity in one treatment generally to a smaller area; while in SRT, radiation is administered in several treatments at lower intensities to larger areas. The main advantage to fractionated radiotherapy is that it allows higher doses of radiation to be delivered to the tumor due to the increased tolerance of the surrounding normal tissues to these smaller fractionated doses. Fractionated SRS outside of the head is also known as stereotactic body radiation therapy (SBRT).

There are three forms of stereotactic radiosurgery represented by three different technological instruments. Each instrument operates differently and has a different source of radiation. The three are:

**Cobalt-60 based:** These machines use gamma rays from radioactive cobalt-60 sources that focus on the tumor using 201 multiple small beams. They provide extremely accurate targeting and precise treatment of brain tumors. They are dedicated to treating benign or malignant intracranial lesions, lesions near or involving the base of the skull, and functional disorders of the brain in a one-day treatment. The cobalt-60 based SRS machine is also known as the Gamma Knife. The Gamma Knife does not move during treatment and the patient is immobilized with a head frame, thus providing a high degree of precision within the brain. These machines are ideal for smaller tumors and for treating functional disorders of the brain.

**Linear accelerated based:** These machines use a single beam of x-rays, rotated to produce multiple intersecting beams. Linear accelerator machines can be used to deliver fractionated treatment over several sessions and are able to use a larger x-ray beam, which enables them to treat larger tumors. Linear accelerator based machines are not dedicated to just treatments within the brain. They can be used for treatment throughout the body as well as the head and neck. The machines are made by several manufacturers and have brand names such as X-Knife, SynergyS, Trilogy, Novalis, and CyberKnife.

**Particle beam (proton, neutron or helium-ion):** Particle beam units are in limited use in the United States. These machines can be used to treat larger and more irregularly shaped lesions. Particle beams have a physical advantage over gamma and x-rays when it comes to sparing normal tissue in that they deposit most of their radiation energy at the Bragg peak. The Bragg peak is the region of greatest radiation dose deposition. The energy can be precisely controlled to cause the Bragg peak to fall within the tumor or target tissue. In addition to brain tumors, particle beams also treat body cancers in a fractionated manner.

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**Criteria:**

- I. ODS will cover single treatment or fractionated stereotactic radiosurgery on a case-by-case basis. The following indications may be considered medically necessary for treatment with a Cobalt-60 or linear accelerated based machine:
  - A. Arteriovenous malformation (AVM)
  - B. Acoustic neuroma
  - C. Glioma
  - D. Hemangioblastoma
  - E. Hypothalamic hamartoma
  - F. Pituitary adenoma
  - G. Meningiomas (non-resectable, residual, or recurrent)
  - H. Solitary or multiple brain metastases in patients having good performance status and no active systemic disease
  - I. Primary malignancies of the CNS, including but not limited to high-grade gliomas (initial treatment or treatment of recurrence)
  - J. Trigeminal neuralgia refractory to medical management or in cases where the patient is unable to tolerate the side effects of medications
  - K. Inoperable spinal tumors with compression or intractable pain
  - L. Disabling tremor in patients with Parkinson's disease who are not candidates for alternative procedures
  - M. Severe essential tremor that is unresponsive to traditional medical therapy
  - N. Stereotactic body radiation therapy (SBRT) using a gamma knife or linear accelerator machine for the treatment of localized malignant conditions within the body where highly precise application of high-dose radiotherapy is required, may be considered medically necessary. These cases will be reviewed on a case-by-case basis by the ODS Medical Director.
  
- II. Treatment with a particle beam (proton or helium ion) will be reviewed on a case-by-case basis by the ODS Medical Director and may be considered medically necessary for the following indications:
  - A. Primary therapy for melanoma of the uveal tract (iris, choroids, or ciliary body) that is not amenable to surgical excision of other conventional forms of treatment
  - B. Inoperable intracranial arteriovenous malformations
  - C. Chordomas or chondrosarcomas arising at the base of the skull or along the axial skeleton without distant metastases
  - D. Pituitary tumors
  - E. Meningiomas
  - F. Other central nervous system tumors located near vital structures of the brain in which conventional treatments may cause significant risk
  
- III. Stereotactic radiosurgery or stereotactic radiotherapy is considered investigational for any of the following:
  - A. Any other indication not listed above
  - B. Treatment of functional disorders other than trigeminal neuralgia, such as epilepsy, chronic pain, and headaches
  - C. Neuro-psychological conditions
  - D. Treatment with neutron beam radiation therapy

**Information to be Submitted with Pre-Authorization Request:**

- History and physical from treating physician
- Diagnostic study reports
- Treatment history (i.e. radiation, chemotherapy, surgery, etc)

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- Treatment plan

### CPT/HCPC Codes and Billing Information

Codes may not be all inclusive

Codes	Description
61796	Stereotactic radiosurgery (particle beam, gamma ray, or linear accelerator); 1 simple cranial lesion
61797	Stereotactic radiosurgery (particle beam, gamma ray, or linear accelerator); each additional cranial lesion, simple (List separately in addition to code for primary procedure)
61798	Stereotactic radiosurgery (particle beam, gamma ray, or linear accelerator); 1 complex cranial lesion
61799	Stereotactic radiosurgery (particle beam, gamma ray, or linear accelerator); each additional cranial lesion, complex (List separately in addition to code for primary procedure)
61800	Application of stereotactic head frame for stereotactic radiosurgery ( List separately in addition to code for primary procedure)
63620	Stereotactic radiosurgery (particle beam, gamma ray, or linear accelerator); 1 spinal lesion
63621	Stereotactic radiosurgery (particle beam, gamma ray, or linear accelerator); each additional spinal lesion (List separately in addition to code for primary procedure)
77371	Radiation treatment delivery, stereotactic radiosurgery (SRS), complete course of treatment of cranial lesion(s) consisting of 1 session; multi-source Cobalt 60 based
77372	Radiation treatment delivery, stereotactic radiosurgery (SRS), complete course of treatment of cranial lesion(s) consisting of 1 session; linear accelerator based
77373	Stereotactic body radiation therapy, treatment delivery, per fraction to 1 or more lesions,
77432	Stereotactic radiation treatment management of cerebral lesion(s) (complete course of
77435	Stereotactic body radiation therapy, treatment management, per treatment course, to one
G0173	Linear accelerator based stereotactic radiosurgery, complete course of therapy In one
G0251	Linear accelerator based stereotactic radiosurgery, delivery including collimator changes
G0339	Image guided robotic linear accelerator base stereotactic radiosurgery, complete course of
G0340	Image guided robotic linear accelerator based stereotactic radiosurgery, delivery including

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