

## Medical Affairs Policy & Procedure

**Service:** Stereotactic Radiosurgery

(e.g. CyberKnife, Gamma Knife, Peacock, Trilogy, X-Knife)

<b>Revised</b>	11/18/11, 12/29/2011, 01/20/2012
<b>Reviewed</b>	11/16/07, 11/21/08, 12/28/09, 10/22/10, 11/18/11
<b>Developed</b>	
<b>Policy Committee Approval</b>	01/20/12

**Description:**

Stereotactic radiosurgery (SRS) is a form of radiation therapy that can deliver radiation more precisely and at higher doses, targeting a lesion from several different directions, while minimizing the amount of damage to the anatomical structures next to the lesion. When this technique is applied to non-CNS structures it is usually referred to as stereotactic body radiotherapy (SBRT) and may involve smaller doses of radiation.

**Indications of Coverage:**

SRS is considered medically necessary for the following conditions:

- A. Unresectable (for example, due to deep intracranial location, inability of the individual to tolerate surgical intervention, surgical intervention is contraindicated) intracranial aneurysms or intracranial arteriovenous malformations (AVMs) less than three centimeters in diameter
- B. Intracranial metastatic brain tumors  $\leq$  4 cm. Less than or equal to 4 lesions.
- C. Unresectable primary central nervous system (CNS) tumors involving the spine
- D. Metastatic disease of the lung or liver when the compromised function of the organ would be worsened with standard radiation therapy
- E. Trigeminal neuralgia that has been present for at least six months, when the use of at least two different medications (for example, anticonvulsant medications, carbamazepine, oxcarbazepine, baclofen, lamotrigine, and pimozide) is documented as ineffective or not tolerated, and the SRS has been recommended by a neurologist

SBRT is medically necessary for the following conditions:

- A. Treatment of node-negative peripheral tumors <5 cm in size in individuals with non-small cell lung cancer who are considered medically inoperable because they

- have significant cardiovascular risk, poor pulmonary functions and/or co-morbidities; SBRT should not be used for patient with NSCLC with tumors near the central airways due to excessive toxicity
- B. Treatment of hepatocellular carcinoma, not amenable to surgical excision as an alternative to ablation/embolization techniques or when these therapies have failed; there should be minimal or no extra-hepatic disease
  - C. Reimbursement for multiple units is appropriate if multiple lesions are treated in a single setting

**Limitations of Coverage:**

- A. Review contract and endorsements for exclusions and prior authorization or benefit requirements.
- B. If used for a condition/diagnosis other than is listed in the Indications of Coverage, deny as experimental or investigative.
- C. If used for a condition/diagnosis that is listed in the Indications of Coverage, but the criteria are not met, deny as not medically necessary.
- D. SRS is considered investigational for any of the following conditions as there is insufficient peer-reviewed scientific literature documenting the effectiveness of the procedure:
  - 1) Parkinson's disease
  - 2) Epilepsy

**Documentation Required:**

- Office notes
- Procedure report
- Imaging reports

**Rationale:**

SRS is commonly used for tumors of the brain, and due to the limited effects on surrounding tissue, has been shown to be effective for tumors that cannot be treated with conventional treatments, such as chemotherapy, embolization, standard radiation therapy, or surgical resection. The tissue surrounding tumors in other anatomical locations is less likely do be damaged with the use of SRS. SRS has been used in individuals with already decreased organ function since the use of SRS is likely to preserve organ function.

A dose escalation study conducted by the Radiation Therapy Oncology Group (RTOG) defined the maximally tolerated SRS dose in the treatment of cerebral metastasis as a function of tumor size [26]. The recommended marginal doses of SRS were 24, 18, and 15 Gy for lesions

=2 cm, 2 to 3 cm, and 3 to 4 cm in the largest diameter. SRS was not recommended for lesions >4 cm because adequate control could not be achieved without an unacceptable level of radiation toxicity to surrounding normal tissue.

SRS has also been used for the management of trigeminal neuralgia when other treatments have failed. Trigeminal neuralgia is a condition where there is severe pain of the face, thought to be the result of inflammation of one of the trigeminal nerves of the face.

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*Approved by the Medical Director*