EFFECTIVE DATE: 09/01/2009
POLICY LAST UPDATED: 09/02/2014

OVERVIEW

This policy documents the coverage guidelines for Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy. Stereotactic radiosurgery (SRS) is a method of delivering high doses of precisely targeted ionizing radiation to intracranial lesions. SRS, when used extracranially, is called stereotactic body radiation therapy (SBRT). The technique differs from conventional radiotherapy, which involves exposing large areas of tissue to relatively broad fields of radiation over a longer duration of sessions. SRS and SBRT entail delivering highly focused convergent beams sparing adjacent structures. It may offer a non-invasive alternative to invasive surgery, particularly for patients unable to undergo surgery or for lesions that are difficult to access surgically or are adjacent to vital organs.

PRIOR AUTHORIZATION

Prior authorization is required for Stereotactic body radiation therapy (SBRT) for BlueCHiP for Medicare and recommended for Commercial products.

Prior authorization is not required for the covered stereotactic radiosurgery (SRS) for BlueCHiP for Medicare and for Commercial products.

POLICY STATEMENT

BlueCHiP for Medicare and Commercial

Stereotactic radiosurgery (SRS) is covered.

Stereotactic body radiation therapy (SBRT) is covered for any of the conditions listed in the medical criteria below.

SBRT is considered not medically necessary for all other indications not listed in the medical criteria as there is insufficient clinical evidence to support its efficacy.

MEDICAL CRITERIA

BlueCHiP for Medicare:
Stereotactic body radiation therapy (SBRT) is considered medically necessary for the following indications:

- Retroperitoneal metastases;
- Hepatic and Pancreatic tumors;
- Pulmonary tumors;
- Mediastinal tumors;
- Prostate neoplasm;
- Spinal tumors;
- Intracranial lesions

Medicare policy is developed separately from BCBSRI policy. Medicare policy incorporates consideration of governmental regulations from CMS (Centers for Medicare and Medicaid Services), such as national coverage determinations or local coverage determinations. In addition to benefit

differences, CMS may reach different conclusions regarding the scientific evidence than does BCBSRI. Medicare and BCBSRI policies may differ. However, BlueCHiP for Medicare members must be offered, at least, the same services as Medicare offers.

Commercial Products:
Stereotactic body radiation therapy (SBRT) is considered medically necessary for any the following indications:

- Patients with stage T1 or T2a non-small cell lung cancer (not larger than 5 cm) showing no nodal or distant disease and who are not candidates for surgical resection;
- Spinal or vertebral body tumors (metastatic or primary) in patients who have received prior radiation therapy.
- Intracranial lesions

BACKGROUND

Stereotactic radiosurgery (SRS) is a method of delivering high doses of precisely targeted ionizing radiation to intracranial lesions. SRS, when used extracranially, is called stereotactic body radiation therapy (SBRT). The technique differs from conventional radiotherapy, which involves exposing large areas of tissue to relatively broad fields of radiation over a longer duration of sessions. SRS and SBRT entail delivering highly focused convergent beams sparing adjacent structures. It may offer a non-invasive alternative to invasive surgery, particularly for patients unable to undergo surgery or for lesions that are difficult to access surgically or are adjacent to vital organs.

Traditional external-beam radiation therapy may involve daily treatments for a duration of 6 weeks or longer. The emerging trend in recent years has been toward shorter, more "hypofractionated" courses, such as with SRS and SBRT. Both SRS and SBRT may be completed with one session (single-fraction) or less may require additional sessions (typically no more than 5) over a course of days, referred to as fractionated stereotactic radiotherapy. Fractionation has been made possible by the ability to duplicate the treatment plan from one session to the next. Fractionation of stereotactic radiotherapy aims to optimize the therapeutic ratio; that is the ratio between tumor control and late effects on normal tissues. The main advantage of fractionation is that it allows higher total doses to be delivered to the tumor because of increased tolerance of the surrounding healthy tissues to each individual, fractionated dose. In addition, some lesions such as large arteriovenous malformations may require more than one procedure to complete the obliteration process.

The main methods of this technology include gamma-ray radiosurgery (Gamma Knife®), most frequently used for intracranial lesions, and linear-accelerator radiosurgery or LINAC (e.g., CyberKnife®). The radiosurgical procedure using SRS or SBRT is preceded by a process of localizing the target with 3-dimensional imaging such as computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography/computed tomography (PET/CT).

Applications of SRS and SBRT

SRS

The most common applications of SRS include treatment of intracranial malignancies, including primary and metastatic tumors, and benign intracranial tumors such as meningiomas, pituitary adenomas, and acoustic neuromas. SRS has been used for trigeminal neuralgia that is resistant to other therapies. It is also an established treatment for arteriovenous malformations (AVMs). More recently, SRS has been investigated as a treatment of functional disorders, which are defined as conditions having no detectable organic cause. Examples of functional disorders include chronic pain.

Acoustic neuromas are benign tumors originating on the eighth cranial nerve, and they can be seen in association with neurofibromatosis. Although these tumors are benign, they are associated with significant morbidity and even death if their growth compresses vital structures. Treatment options include complete surgical excision using microsurgical techniques, but radiosurgery has also been used extensively, either as a primary treatment or as a treatment of recurrence after incomplete surgical resection. Acoustic neuromas were one of the first indications for SRS, dating back to 1969.

Pituitary adenomas are benign tumors with symptoms that are related to hormone production (i.e., functioning adenomas) or to neurologic symptoms due to their impingement on surrounding neural structures. Treatment options for pituitary adenomas include surgical excision, conventional radiation therapy, or SRS. Surgical excision is typically offered to patients with functioning adenomas, since complete removal of the adenoma leads to more rapid control of autonomous hormone production. The effects of SRS on hormone production are delayed or incomplete. In patients with nonfunctioning adenomas, the treatment goal is to control growth; complete removal of the adenoma is not necessary. Conventional radiation therapy has been used in this setting with an approximate 90% success rate with few complications.

Craniopharyngiomas are benign, however, because of proximity to the optic pathways, pituitary gland, and hypothalamus, may cause severe and permanent damage to such critical structures and can even be life-threatening. Total surgical resection is often difficult.

Because of the rarity of glomus jugulare tumors, a variety of treatment paradigms are currently used. There is no consensus regarding the optimal management to control tumor burden while minimizing treatment-related morbidity.

Arteriovenous malformations consist of a tangled network of vessels in which blood passes from arteries to veins without intervening capillaries. They range in size from small, barely detectable lesions to huge lesions that can occupy an entire hemisphere. SRS incites an inflammatory response in the vessels, which results in ongoing fibrosis with eventual complete obliteration of the lesion over a course of months to years. This latency period is variable, depending on the size of the AVM and the dose distribution of the radiosurgery. During this latency period, there is an ongoing but declining risk of hemorrhage. In contrast, surgical excision provides an immediate effect on the risk of hemorrhage. Total surgical extirpation of the lesion, if possible, is the desired form of therapy to avoid future hemorrhage. However, a small subset of AVMs because of their size or location cannot be excised without serious neurologic sequelae. SRS is an important alternative in these patients.

Trigeminal neuralgia is a disorder of the fifth cranial (i.e., trigeminal) nerve that causes episodes of intense, stabbing pain in the face. Although trigeminal neuralgia is initially treated medically, in a substantial number of cases, drug treatment is either ineffective or the adverse effects become intolerable. Neurosurgical options include microvascular decompression, balloon compression, and rhizotomy. SRS has been investigated as an alternative to these neurosurgical treatments.

Seizure disorders are initially treated medically. Surgical treatment is only considered in those rare instances when the seizures have proven refractory to all attempts at aggressive medical management, when the seizures are so frequent and severe as to significantly diminish quality of life, and when the seizure focus can be localized to a focal lesion in a region of the brain that is amenable to resection. SRS has been investigated as an alternative to neurosurgical resection. For chronic pain that is refractory to a variety of medical and psychological treatments, there are a variety of surgical alternatives. Neurodestructive procedures include cordotomy, myelotomy, dorsal root entry zone (DREZ) lesions, and stereotactic radiofrequency thalamotomy. SRS targeting the thalamus has been considered an investigative alternative to these neurodestructive procedures.

Intracranial metastases have been considered ideal targets for radiosurgery due to their small spherical size and noninfiltrative borders. Brain metastases are a frequent occurrence, seen in 25–30% of all patients with cancer, particularly in those with lung, breast, or colon cancer or melanoma. Whole-brain radiation treatment (WBRT) is considered the standard of care in the treatment of brain metastases, and the addition of SRS to WBRT has been shown to improve survival and local tumor control in selected patients. Stereotactic radiosurgery (SRS) offers the additional ability to treat tumors with relative sparing of normal brain tissue in a single fraction. The idea of deferring WBRT in order to avoid its effects on normal tissues and using SRS alone continues to generate significant discussion and interest. Several trials have been conducted to address this issue.

The treatment of primary brain tumors such as gliomas is more challenging, due to their generally larger size and infiltrative borders.

SBRT

Studies are being conducted to evaluate SBRT for a number of extracranial sites. This approach is being studied to better target lesions (sparing surrounding normal structures) and to shorten the length of time needed to complete the treatments.

Surgical resection is the preferred treatment of hepatocellular carcinoma, although at the time of diagnosis less than 20% of patients are amenable to definitive surgical management due to advanced local disease or comorbidities. These patients may be candidates for local ablative therapies, including radiofrequency ablation and chemoembolization. Radiation may be considered as an alternative to local ablative/embolization therapies or if these therapies fail.

Radiation may be a part of the treatment plan for pancreatic cancer, resectable or unresectable disease, and may be used in the adjuvant or neoadjuvant setting.

Localized renal cell carcinoma is conventionally treated surgically; local ablative methods may also be an option. Preoperative and adjuvant external radiation have not improved survival. However, because renal cell cancer brain metastases, although radioresistant to conventional external radiation, have been responsive to radiosurgery, there is interest in the possibility of treating primary kidney cancer with SBRT.

Metastases from non-small cell lung cancer (NSCLC) to the adrenal gland are common, and systemic treatment is the most frequent therapeutic option. Nevertheless, in patients suffering from an isolated adrenal metastasis, a survival benefit could be achieved after surgical resection.

Oligometastases are defined as isolated sites of metastasis, with the entire burden of disease being recognized as a finite number of discrete lesions that can be potentially cured with local therapies. In general, the indications for SBRT for oligometastases are the same as for metastasectomy. Recently proposed specific criteria for the use of SBRT in patients with oligometastases include: a controlled primary, favorable histology, limited metastatic disease, metachronous appearance of metastases, young age and good performance status.

The management of metastatic solid tumors has historically focused on systemic treatment with palliative intent. However, surgical treatment of oligometastatic disease is now common practice in some clinical settings. Although cure may be possible in some patients with oligometastatic disease, the aim of SBRT in this setting is mainly to achieve local control and delay progression, which also may postpone the need for further treatment.

Stereotactic radiosurgery is an established safe and effective treatment modality for many benign and malignant intracranial tumors/conditions. Improved outcomes using stereotactic body radiation therapy have

also been demonstrated in patients with early-stage non-small cell lung cancer who are not considered to be candidates for resection. The literature and input from clinical vetting support its use in spinal tumors that have been previously irradiated and in radioresistant metastases to the spine.

COVERAGE

Benefits may vary between groups/contracts. Please refer to the appropriate Evidence of Coverage or Subscriber Agreement for the applicable radiation therapy benefits/coverage.

CODING

BlueCHiP for Medicare and Commercial

Single Fraction: **Cranial** SRS-Stereotactic Radiosurgery authorization not required.			
61796	**61797**	**61798**	**61799**
61800	**77371**	**77372**	**77432**
Two to Five (2-5) Fractions: **Cranial** SBRT-Stereotactic body radiation therapy Preauthorization is required for BlueCHiP for Medicare and recommended for Commercial products.			
77435			
One to Five (1-5) Fractions: **Spinal** SBRT Stereotactic body therapy Preauthorization is required for BlueCHiP for Medicare and recommended for Commercial products			
32701	**63620**	**63621**	**77373**
77435			
The following related codes are covered when performed in conjunction with a covered indication.			
77263	**77295**	**77300**	**77301**
77315	**77332**	**77334**	**77370**
The following HCPCS codes are covered but **not separately reimbursed** as providers should file with the appropriate CPT code:			
G0339	**G0340**		

RELATED POLICIES

None

PUBLISHED

Provider Update	Nov 2013
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Provider Update	Nov 2007

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