02-77371-01

Original Effective Date: 09/15/08

Reviewed: 07/25/24

Revised: 08/15/24

Subject: Stereotactic Radiosurgery (Intracranial)

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DESCRIPTION:

Stereotactic radiosurgery (SRS) is a method of delivering high doses of ionizing radiation to small intracranial targets. The technique differs from conventional radiotherapy, which involves exposing large areas of intracranial tissue to relatively broad fields of radiation over a number of sessions. SRS delivers highly focused convergent beams sparing adjacent structures. SRS may offer a non-invasive alternative to invasive surgery, particularly for individuals that are unable to undergo surgery or for lesions that are difficult to access surgically or for lesions that are adjacent to vital organs.

Several methods of this technology exist: gamma-ray radiosurgery (Gamma Knife®), linear-accelerator radiosurgery (LINAC), proton-beam radiosurgery, helium-ion radiosurgery, and neutron-beam radiosurgery. The latter 3 energy sources are collectively referred to as charged particles.

The Gamma Knife and linear accelerator systems are similar in concept; both use multiple photon radiation arcs that intersect at a stereotactically determined target, thus permitting higher doses of radiation delivery with sparing of surrounding normal tissues. The differences between them relate to how the energy is produced (i.e., through decaying cobalt or from x-rays) and the number of energy sources used (i.e., multiple energy sources in the gamma knife versus one in the linear accelerator system). Charged particles beams are fundamentally different in that they take advantage of the Bragg peak (i.e., the deposition of energy at a specific depth with minimal scatter). Typically, 3 to 5 fixed beams are used, similar to the beam arrangement in conventional radiotherapy.

The most common applications of SRS include treatment of intracranial malignancies, including primary and metastatic tumors, arteriovenous malformations (AVMs), acoustic neuromas (vestibular schwannomas), and other benign intracranial tumors such as meningiomas or pituitary adenomas.

Summary and Analysis of Evidence: Stereotactic radiosurgery (SRS) for intracranial conditions (e.g., arteriovenous malformations, trigeminal neuralgia, epilepsy), intracranial lesions/tumors (e.g., brain metastases, intracranial malignancy, craniopharyngioma, meningiomas), glomus jugulare tumors, pituitary adenomas and uveal melanoma is a treatment option, the evidence includes randomized, nonrandomized, prospective and retrospective studies (Aoyama 2006; Chang 2009; Seung 2013; Wei 2022; Quigg 2014; Shi 2019; Lee 2014; Sheehan 2013; Guo 2008; Régis 2016; Reynolda 2017; Eibl-Lindner 2016; Phalak 2023).

POSITION STATEMENT:

Note: For Stereotactic Body Radiotherapy, refer to Stereotactic Body Radiotherapy, 02-77371-02.

- Acoustic neuromas
- Arteriovenous malformations of the brain
- Brain metastases (solitary or multiple) in members having good performance status and no active systemic disease (extracranial disease that is stable or in remission)
- Craniopharyngiomas
- Glomus jugulare tumors
- Malignant neoplastic intracranial lesion(s) (e.g., gliomas, astrocytomas)
- Mesial temporal lobe epilepsy refractory to medical management when standard alternative surgery is not an option
- Non-resectable, residual, or recurrent meningiomas
- Pediatric members (below age 18), intracranial malignancy
- Pituitary adenomas
- Trigeminal neuralgia refractory to medical management
- Uveal melanoma.

Stereotactic radiosurgery (SRS) to treat a previously irradiated field **meets the definition of medical necessity** for the following indications:

- Central nervous system (CNS) lymphoma
- Central nervous system tumor (medulloblastoma, supratentorial primitive neuroectodermal tumors (PNET), ependymoma)
- Glioma (high grade, low grade)
- Meningioma
- Metastatic brain lesion
- Pediatric members (below age 18), intracranial malignancy
- Pituitary adenoma
- Trigeminal neuralgia
- Uveal melanoma.

BILLING/CODING INFORMATION:

Codes may not be all inclusive.

CPT Coding:

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 headframe for stereotactic radiosurgery (List separately in addition to code for primary procedure)
77301	Intensity modulated radiotherapy plan, including dose-volume histograms for target and critical structure partial tolerance specifications (Note: when specified as treatment planning for SRS.)
77338	Multi-leaf collimator (MLC) device(s) for intensity modulated radiation therapy (IMRT), design and construction per IMRT plan (Note: when specified as devices for SRS.)
77371	Radiation treatment delivery, stereotactic radiosurgery (SRS), complete course of treatment of cerebral lesion(s) consisting of 1 session; multi-source Cobalt 60 based
77372	Radiation treatment delivery, stereotactic radiosurgery (SRS), complete course of treatment of cerebral lesion(s) consisting of 1 session; linear accelerator based
77432	Stereotactic radiation treatment management of cerebral lesion(s) (complete course of treatment consisting of one session)

HCPCS Coding:

G0339	Image guided robotic linear accelerator base stereotactic radiosurgery, complete course of therapy in one session, or first session of fractionated treatment.
G0340	Image guided robotic linear accelerator based stereotactic radiosurgery, delivery including collimator changes and custom plugging, fractionated treatment, all lesions, per session, second through fifth sessions, maximum five session per course of treatment.

LOINC Codes:

The following information may be required documentation to support medical necessity: physician history and physical, physician progress notes, plan of treatment and reason for stereotactic radiosurgery.

Documentation Table	LOINC Codes	LOINC Time Frame Modifier Code	LOINC Time Frame Modifier Codes Narrative
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Attending physician progress note	18741-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Plan of treatment	18776-5	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

REIMBURSEMENT INFORMATION:

Refer to section entitled **POSITION STATEMENT**.

PROGRAM EXCEPTIONS:

Federal Employee Program (FEP): Follow FEP guidelines.

State Account Organization (SAO): Follow SAO guidelines.

Medicare Advantage products: No National Coverage Determination (NCD) and/or Local Coverage Determination (LCD) were found at the time of the last guideline reviewed date.

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at Coverage Protocol Exemption Request

DEFINITIONS:

Acoustic neuromas: a benign tumor that develops on the nerve that connects the ear to the brain.

Arteriovenous malformations (AVM): AVMs are defects in the vascular system. An AVM is a snarled tangle of arteries and veins that are connected to each other with no capillaries. An AVM interferes with the blood circulation in an organ and can happen anywhere, but they are more common in the brain or spinal cord.

Benign: not cancerous. Benign tumors may grow larger but do not spread to other parts of the body. Also called nonmalignant.

Craniopharyngiomas: a rare, benign (not cancer) brain tumor that usually forms near the pituitary gland and the hypothalamus. Craniopharyngiomas are slow-growing and do not spread to other parts of the brain or to other parts of the body. However, they may grow and press on nearby parts of the brain, including the pituitary gland, hypothalamus, optic chiasm, optic nerves, and fluid-filled spaces in the

brain. This may cause problems with growth, vision, and making certain hormones. Craniopharyngiomas usually occur in children and young adults.

Glioma: a tumor of the brain that originates in a glial (supportive cell) in the brain or spinal cord.

Glomus jugulare tumor: a tumor of a part of the temporal bone in the skull. This tumor can affect the ear, upper neck, base of the skull, and the surrounding blood vessels and nerves.

Irradiated: treated with radiation.

Linear accelerator: a sophisticated machine used for a type of radiation therapy that delivers external beam radiotherapy.

Malignant: Cancerous. Malignant tumors can invade and destroy nearby tissue and spread to other parts of the body.

Meningioma: a tumor that arises from the meninges (the membranes that surround the brain and spinal cord).

Metastatic: having to do with metastasis, which is the spread of cancer from the primary site (place where it started) to other places in the body.

Pituitary adenoma: benign tumor of the pituitary gland (the master gland that controls other hormone producing glands of the body and influences numerous body functions including growth).

Refractory: resistant to treatment or cure.

Residual disease: cancer cells that remain after attempts to remove the cancer have been made.

Trigeminal neuralgia: nerve disorder that stimulates the fifth cranial nerve in the face, causing episodic intense, stabbing, electric shock-like pain where the branches of the nerve are distributed to the lips, eyes, nose, scalp, forehead, upper and lower jaws; also known as tic douloureux.

Tumor: a new growth of tissue in which the multiplication of cells is uncontrolled and progressive; also called neoplasm (benign or malignant).

RELATED GUIDELINES:

Stereotactic Body Radiotherapy, 02-77371-02

OTHER:

Other names used to report Robotic-assisted stereotactic surgery or radiosurgery:

Note: The use of specific product names is illustrative only. It is not intended to be a recommendation of one product over another, and is not intended to represent a complete listing of all products available.

CyberKnife® Image-Guided Radiosurgery System
Frameless NeuroMate™ Stereotactic System
Linear accelerator stereotactic radiosurgery (LINAC SRS)
Mehrkoordinaten Manipulator (MKM) system

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COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 07/25/24.

GUIDELINE UPDATE INFORMATION:

09/15/08	Review and revision of guideline consisting of updated references: Changed MCG name from Stereotactic Radiosurgery to Stereotactic Body Radiotherapy to Stereotactic Radiosurgery (Intracranial) Changed MCG # from 02-61000-25 to 02-77371-01. Removed information about stereotactic body radiotherapy and created new MCG 02-77371-02 Stereotactic Body Radiotherapy.
01/01/09	Annual HCPCS coding update: added codes 61796, 61797, 61798 and 61799. Deleted code 61793.

11/15/09	Annual review. Maintain position statements. Add program exception for Medicare. Updated references.
11/15/10	Annual review: position statements maintained, added ICD-1 codes, reformatted Medicare Advantage program exceptions, added ICD-10 web link for Medicare, and updated references.
10/01/11	Revision; formatting changes.
11/15/11	Annual review; maintain position statements. Updated references.
11/15/12	Annual review; added craniopharyngiomas (237.0), glomus jugulare tumors (237.3) and stereotactic radiosurgery performed with fractionation, revised experimental or investigational statement, added 77435 and updated references.
01/01/13	Coding clarification.
05/15/14	Scheduled review; position statement maintained. Updated description section, deleted diagnosis code 742.9 (and ICD-10 Q04.9 and Q07.9), updated Medicare Advantage products program exceptions, definitions, references and decision tree.
05/15/15	Scheduled review. Updated description and references. Revised indication solitary or multiple brain metastases; add primary and metastatic. Revised wording: stereotactic radiosurgery performed for all other indications; delete “the lack of”, replace with “insufficient”.
05/01/16	Revision; added/revised indications: bone metastases, central nervous system cancers (intracranial, spinal, ocular and neurologic), other neurologic conditions (trigeminal neuralgia), other tumor types (including sarcomas, pediatrics and other malignancies, and sarcoma); deleted 77435; added 77280, 72285, 77290, 77295, 77338, 77402, 77407 and 77412; added ICD-10 codes. Updated program exception; updated references.
08/15/16	Updated program exceptions.
11/15/16	Revision; revised position statement. Updated references.
01/01/17	Annual HCPCS code update. Revised 77402, 77407 and 77412 code descriptor.
04/15/17	Code udate; deleted G0173 and G0251.
10/15/17	Revision; revised position statement. Added Hodgkin and Non-Hodgkin lymphoma, thyoma and thymic carcinoma. Revised other malignancies. Updated references.
02/15/18	Revision; updated position statement, ICD-10 diagnoses codes and definitions.
12/15/20	Revision; removed meningioma section and added meningioma to other benign brain tumors section.
03/15/21	Review/revision. Deleted bone metastases and other tumor types (sarcoma, thymoma and thymic carcinoma). Central nervous system cancers: Revised gliomas (high and low grade) criteria. Deleted Karnofsky Performance Scale. Metastatic brain lesions: Revised criteria. Deleted Karnofsky Performance Scale. Added meningioma and criteria. Updated CPT and ICD-10 codes. Updated references.
02/15/22	Updated program exceptions.
05/15/23	Review: revised position statement. Updated coding and references.
08/21/23	Update to Program Exceptions section.
08/15/24	Review; no change to position statement. Updated references.