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Stereotactic Radiosurgery and Proton Beam Therapy

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Overview

Stereotactic radiosurgery (SRS) is a highly precise form of radiation therapy initially used to treat tumors and other abnormalities of the brain (intracranial). When used to treat other parts of the body (extracranial), the procedure is referred to as **stereotactic body radiotherapy (SBRT)**.

Fractionated stereotactic radiotherapy is the term utilized when multiple SRS treatments are administered (typically 2–5).

Despite its name, SRS is a non-surgical procedure that delivers precisely targeted radiation at much higher doses than traditional radiation therapy while sparing healthy adjacent tissue.

SRS and SBRT technologies

1. Three-dimensional (3D) imaging and localization techniques that determine the exact coordinates of the target within the body.
2. Systems to immobilize and carefully position the patient.
3. Highly focused gamma-ray or x-ray beams that converge on a tumor or abnormality.
4. Image-guided radiation therapy (IGRT), which uses medical imaging to confirm the location of a tumor immediately before, and in some cases during the delivery of radiation to further improve the precision and accuracy of the treatment.

Radiation modalities for SRS and SBRT:

1. Gamma Knife — for intracranial indications; consists of multiple beams of highly focused gamma rays converging in three dimensions.
2. The treatment involves four phases: placement of a head frame, imaging of the tumor location, computerized dose planning and radiation delivery.
3. Linear accelerator (LINAC) — for either intracranial or extracranial indications; consists of high-energy x-ray photons or electrons that are delivered to the brain or to outside the brain (extracranially) as with SBRT.

The LINAC involves the same four phases of the Gamma Knife, but unlike the Gamma Knife, which remains motionless during the procedure, part of the LINAC, a gantry, rotates around the patient delivering radiation beams from different angles. (Note: The CyberKnife, a LINAC technology, utilizes a robotic arm that moves around the patient under image-guidance)

Compared to the Gamma Knife, the LINAC can use a larger x-ray beam, which enables it to treat larger tumors more uniformly. It can also be used for single-session or fractionated radiotherapy using a relocatable frame, an advantage for large tumors or particularly critical locations.

4. Proton beam therapy (PBT) — uses a special machine called a cyclotron or a synchrotron to generate and accelerate protons (atoms that carry a positive charge).

   The protons leave the machine and are steered by magnets toward the tumor; releasing most of their energy when they hit the tumor (delivering no exit dose beyond the tumor boundary, unlike photons). The result is that the radiation dose may conform to the tumor better with less damage occurring to healthy tissue; thus, potentially enabling the administration of larger doses while minimizing unwanted side effects.

   PBT may be considered reasonable in instances where sparing the surrounding normal tissue cannot be adequately achieved with photon-based radiotherapy and is of added clinical benefit to the member. Examples include:

   i. The target volume is in close proximity to ≥ 1 more critical structure and a steep dose gradient outside the target must be achieved to avoid exceeding the tolerance dose to the critical structure(s)
   ii. A decrease in the amount of dose inhomogeneity in a large treatment volume is required to avoid an excessive dose "hotspot" within the treated volume to lessen the risk of excessive early or late normal tissue toxicity
   iii. A photon-based technique would increase the probability of clinically meaningful normal tissue toxicity by exceeding an integral dose-based metric associated with toxicity
   iv. The same (or an immediately adjacent area) has been previously irradiated and the dose distribution within must be sculpted to avoid exceeding the cumulative tolerance dose of nearby normal tissue

Guideline

Note: For Medicare members see Local Coverage Determination (LCD): Stereotactic Radiation Therapy: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy (SBRT)

Commercial and Medicaid members

I. Single or multiple-session (fractionated) SRS/SRBT, utilizing any FDA-approved Gamma Knife or LINAC technology, is considered medically necessary for any of the following conditions:

A. Nonmalignant cranial/spinal/central nervous system (CNS) tumors/lesions

1. Arteriovenous (AV)/cavernous malformations
2. Acoustic neuroma
3. Craniopharyngioma
4. Glomus tumor
5. Hemangioblastoma
6. Meningioma
7. Pineocytoma
8. Pituitary adenoma
9. Schwannomas
10. Spinal tumors — inoperable primary with compression or intractable pain

B. Malignant primary tumors/lesions

1. Prostate cancer:
    i. Low-, intermediate-, and high-risk prostate cancer
    ii. Negative bone scan within the last 6 months, where applicable

2. CNS (includes spinal tumors); initial or recurrence treatment (see Limitations/Exclusions for gliomas)
   Note: Boost treatment may be considered on a case-by-case basis for larger cranial or spinal lesions (such as sarcomas, chondrosarcomas, chordomas and nasopharyngeal or paranasal sinus malignancies) that have been treated initially with external beam radiation therapy or surgery.
3. Uveal melanoma
4. Non-small cell lung cancer (NSCLC) — medically inoperable Stage I or node-negative Stage IIA
5. Malignant primary tumors of the adrenal gland, kidney, liver and pancreas
   Note regarding pancreatic cancer: Stereotactic body radiation therapy (using up to 5 radiation treatment fractions) will be considered on a case-by-case basis for Commercial and Medicaid members, as consistent with eviCore, for:
    i. Pre-operative (neoadjuvant resectable or borderline resectable) cases following a minimum of 2 cycles of chemotherapy and restaging in which there is no evidence of tumor progression
    ii. Definitive treatment for medically inoperable or locally advanced cases following a minimum of 2 cycles of chemotherapy and restaging in which there is no evidence of tumor progression, and the disease volume can be entirely encompassed in the radiation treatment volume.
    iii. Postoperative (adjuvant) cases in which there is residual gross disease or positive microscopic margins that can be entirely encompassed in the radiation treatment volume

C. Malignant metastatic tumors/lesions

1. Brain
    i. Initial treatment is medically necessary when the following conditions are met:
        - Lesion no > 5 cm
        - Karnofsky Performance Status (KPS) > 70
        - Primary histology is not germ cell, small cell, or lymphoma
        - Systemic disease is under control or good options for systemic treatment are available
        - All lesions can be treated in a single treatment plan in a single fraction (for SRS) or up to 5 fractions (for fractionated SRS)

          Note that all lesions present on imaging must be targeted as a single episode of care. If this cannot be accomplished in a maximum of 5 fractions, each fraction must be billed as 3D conformational or intensity modulated radiation therapy (IMRT), depending on the planning, as the definition of SRS is not met.
    ii. In a member who has received prior SRS, retreatment with SRS is medically necessary when the following conditions are met:
        - 1–5 new lesions (no > 5 cm) are present with evidence of controlled systemic disease
        - KPS score > 70
        - Primary histology is not germ cell, small cell, or lymphoma
        - Member has not been treated with > 2 episodes of radiosurgery in past 9 months
        - All lesions can be treated in a single treatment plan with a single fraction (for SRS) or up to 5 fractions (for fractionated SRS). Note that all lesions present on imaging must be targeted as a single episode of care. If this cannot be accomplished in a maximum of 5 fractions, each fraction must be billed as 3D conformational or IMRT, depending on the planning, as the definition of SRS is not met
    iii. In a member who has received prior whole-body radiation therapy (WBRT), SRS may be medically necessary if the member's KPS is > 70, systemic disease is under control, and life expectancy is > 6 months
    iv. Post-operative SRS is considered not medically necessary

2. Member with NSCLC (who will undergo curative treatment of primary tumor) and presents with 1–3 metastases in the synchronous setting
3. Spinal tumors — recurrent metastatic for members who have undergone prior surgery and conventional radiation therapy
4. Member with colorectal cancer (who will undergo curative treatment of primary tumor) and presents with 1–3 metastases in the lung or liver in the synchronous setting and for whom surgical resection is not possible
5. Member presenting with 1–3 adrenal gland, lung, liver or bone metastases in the metachronous setting when all the following criteria are met:
    i. Histology is NSCLC, colon, breast, sarcoma, renal cell or melanoma
    ii. Disease free interval of > 1 year from the initial diagnosis
    iii. Primary tumor received curative therapy and is controlled
    iv. No prior evidence of metastatic disease (cranial or extracranial)

D. Tumors of any type arising in areas of overlap with previously irradiated regions (where there is likely to be obvious clinical benefit)

E. SRS is medically necessary for any of the following diseases that are refractory to medical treatment and/or invasive neurosurgical treatment

1. Epilepsy
2. Parkinson's disease
3. Essential tremor
4. Familial tremor classifications with major systemic disease
5. Trigeminal neuralgia

Authorization for this class of diseases will only be granted once all standard treatments have proven to be ineffective. Substantiating documentation must accompany request. Discussion with a Medical Director may also be required.

Limitations/Exclusions

Stereotactic radiosurgery is regarded as investigational and not medically necessary for the following indications:

1. Gliomas (case by case consideration for inoperable malignant gliomas that have received prior radiation treatment)
2. Chronic pain syndromes
3. Extracranial lesions/tumors (other than those depicted above)
4. SBRT for palliation is not considered medically necessary
5. Psychoneurosis

II. Proton beam therapy (PBT)

Note: For Medicare members see NGS LCD: Proton Beam Therapy

Commercial and Medicaid members

PBT is considered medically necessary for the curative treatment of any of the following:

1. Chondrosarcomas and chordomas of the skull base; localized and in postoperative setting
2. Primary CNS cancer (excluding IDH wild-type glioblastoma multiforme)
3. Nonmetastatic primary tumors requiring craniospinal irradiation (e.g., medulloblastoma)
4. Primary ocular tumors including uveal Melanomas when preferential compared to brachytherapy
5. Nasopharynx, nasal cavity, paranasal sinuses or other accessory sinuses cancer
6. Hepatocellular cancer (HCC) or intrahepatic cholangiocarcinoma
7. Stage IIA seminoma
8. Malignancies requiring Craniospinal Irradiation (CSI)
9. Individuals with cancer syndromes such as NF-1, Li-Fraumeni, Ataxia Telangiectasia (with deleterious ATM mutations), Hereditary Retinoblastoma, Lynch syndrome, or Hereditary Breast or Ovarian Cancer (with BRCA1/2 mutations)
10. Primary malignant or benign bone tumors
11. Unresected T3, T4, or node positive head and neck cancers
12. Esophageal cancer
13. Thymomas and Thymic Carcinoma
14. Mediastinal lymphomas
15. Thoracic sarcomas
16. Primary malignant pleural mesothelioma
17. Retroperitoneal Sarcoma
18. Individuals with a single kidney or transplanted pelvic kidney with treatment of an adjacent target volume
19. Liver metastases being treated with curative intent (i.e., oligometastases)
20. Leptomeningeal disease
21. Multiple myeloma

Benign or malignant tumors or hematologic malignancies in children aged 19 years and younger treated with curative intent PBT for the following indications will be reviewed on a case-by-case basis:

1. Breast Cancer
2. Extrahepatic cholangiocarcinoma
3. Hodgkin’s Lymphoma
4. Non-Hodgkin's Lymphoma
5. Lung Cancer
6. Pancreatic cancer
7. Prostate cancer
8. Cutaneous tumors with cranial nerve invasion to the base of skull, cavernous sinus and/or brainstem
9. Head and neck cancers requiring ipsilateral radiation treatment (e.g., oral cavity, salivary gland)
10. Mucosal melanoma
11. Adrenal cancers
12. Colon, anal or rectal cancers
13. Bladder cancer
14. Cervical, endometrial or ovarian cancers
15. Skin cancer
16. Palliative treatment

Limitations/Exclusions

Proton beam therapy is not considered medically necessary for indications other than those listed above due to insufficient evidence of therapeutic value. Case-by-case consideration will be given for special situations (see diagnostic coding).

Revision History

10/10/2025	Reduced age threshold for case-by-case review from 21 to 19 years and younger for members with benign or malignant tumors, or hematologic malignancies, when proton beam therapy is intended for curative treatment
5/17/2024	Expanded covered indications for proton beam therapy to include additional cancerous/noncancerous tumor types, modified case-by-case list, and added clarifications for improved readability
7/14/2023	Added pediatric malignancies and maxillary sinus or paranasal/ethmoid sinus tumors as covered for proton beam therapy Removed notes pertaining to Medicare and added re-direct links to National Government Services [NGS] Local Coverage Determinations
5/7/2021	Amended non-small cell lung cancer (NSCLC) language for SBRT; stage II changed to stage IIA Amended proton beam case-by-case language: ▪ For NSCLC, amended to read “stage II–IIIB” (previously stage IIIB) ▪ For prostate cancer, amended to read “intact and unoperated” (previously “unoperated”)
4/12/19	Added Commercial and Medicaid coverage of PBT for malignancies requiring craniospinal irradiation (CSI). Added Commercial and Medicaid PBT coverage consideration language for unresectable HCC and intrahepatic cholangiocarcinoma. Added PBT case-by-case review language for Commercial and Medicaid members specific to: Locally advanced breast cancer when treating the internal mammary nodes, primary CNS cancer, esophageal cancer, head and neck cancer (excluding T1-T2N0M0 laryngeal cancer), remaining cases of unresectable HCC and intrahepatic cholangiocarcinoma, Hodgkin’s lymphoma, non-Hodgkin's lymphoma, stage IIIB non-small cell lung cancer, pancreatic cancer, prostate cancer (unoperated), retroperitoneal sarcoma, thymomas and thymic carcinoma.
10/12/18	Added covered indications for malignant primary tumors of the adrenal gland, kidney, liver and pancreas. Added covered indication for Medicare members (only) presenting with 1–3 kidney or pancreas metastases in the metachronous setting.
1/12/17	Brain metastasis criteria modified for SRS to include Karnofsky scoring, specify lesion size/characteristics and communicate utilization parameters. Neurologic diseases added as covered indications.
12/1/16	Prostate cancer criteria modified for SRBT to include high-risk members.
9/9/2016	For proton beam therapy, separated criteria per line of business. Added Stage IIA seminoma indication for Commercial and Medicaid members; added Group 1 and Group 2 indications for Medicare members. For stereotactic radiosurgery, specific to Medicare members, clarified that prior surgery or conventional radiation therapy is not required in certain instances.
3/11/2016	Added case-by-case language for boost treatment of larger cranial or spinal lesions within the section pertaining to malignant primary tumors/lesions.

Applicable Procedure Codes

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)

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, including image guidance, entire course not to exceed 5 fractions
77432	Stereotactic radiation treatment management of cranial lesion(s) (complete course of treatment consisting of one session)
77435	Stereotactic body radiation therapy, treatment management, per treatment course, to one or more lesions, including image guidance, entire course not to exceed 5 fractions
77520	Proton treatment delivery; simple, without compensation
77522	Proton treatment delivery; simple, with compensation
77523	Proton treatment delivery; intermediate
77525	Proton treatment delivery; complex
G0339	Image guided robotic linear accelerator-based 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 sessions per course of treatment
S8030	Scleral application of tantalum ring(s) for localization of lesions for proton beam therapy

Applicable ICD-10 Diagnosis Codes

Proton Beam	
C00.0	Malignant neoplasm of external upper lip
C00.1	Malignant neoplasm of external lower lip
C00.2	Malignant neoplasm of external lip, unspecified
C00.3	Malignant neoplasm of upper lip, inner aspect
C00.4	Malignant neoplasm of lower lip, inner aspect
C00.5	Malignant neoplasm of lip, unspecified, inner aspect
C00.6	Malignant neoplasm of commissure of lip, unspecified
C00.8	Malignant neoplasm of overlapping sites of lip
C00.9	Malignant neoplasm of lip, unspecified
C01	Malignant neoplasm of base of tongue
C02.0	Malignant neoplasm of dorsal surface of tongue
C02.1	Malignant neoplasm of border of tongue
C02.2	Malignant neoplasm of ventral surface of tongue
C02.3	Malignant neoplasm of anterior two-thirds of tongue, part unspecified
C02.4	Malignant neoplasm of lingual tonsil
C02.8	Malignant neoplasm of overlapping sites of tongue
C02.9	Malignant neoplasm of tongue, unspecified
C03.0	Malignant neoplasm of upper gum

Proton Beam	
C03.1	Malignant neoplasm of lower gum
C03.9	Malignant neoplasm of gum, unspecified
C04.0	Malignant neoplasm of anterior floor of mouth
C04.1	Malignant neoplasm of lateral floor of mouth
C04.8	Malignant neoplasm of overlapping sites of floor of mouth
C04.9	Malignant neoplasm of floor of mouth, unspecified
C05.0	Malignant neoplasm of hard palate
C05.1	Malignant neoplasm of soft palate
C05.2	Malignant neoplasm of uvula
C05.8	Malignant neoplasm of overlapping sites of palate
C05.9	Malignant neoplasm of palate, unspecified
C06.0	Malignant neoplasm of cheek mucosa
C06.1	Malignant neoplasm of vestibule of mouth
C06.2	Malignant neoplasm of retromolar area
C06.80	Malignant neoplasm of overlapping sites of unspecified parts of mouth
C06.89	Malignant neoplasm of overlapping sites of other parts of mouth
C06.9	Malignant neoplasm of mouth, unspecified
C07	Malignant neoplasm of parotid gland
C08.0	Malignant neoplasm of submandibular gland
C08.1	Malignant neoplasm of sublingual gland
C08.9	Malignant neoplasm of major salivary gland, unspecified
C09.0	Malignant neoplasm of tonsillar fossa
C09.1	Malignant neoplasm of tonsillar pillar (anterior) (posterior)
C09.8	Malignant neoplasm of overlapping sites of tonsil
C09.9	Malignant neoplasm of tonsil, unspecified
C10.0	Malignant neoplasm of vallecula
C10.1	Malignant neoplasm of anterior surface of epiglottis
C10.2	Malignant neoplasm of lateral wall of oropharynx
C10.3	Malignant neoplasm of posterior wall of oropharynx
C10.4	Malignant neoplasm of branchial cleft
C10.8	Malignant neoplasm of overlapping sites of oropharynx
C10.9	Malignant neoplasm of oropharynx, unspecified
C11.0	Malignant neoplasm of superior wall of nasopharynx
C11.1	Malignant neoplasm of posterior wall of nasopharynx
C11.2	Malignant neoplasm of lateral wall of nasopharynx
C11.3	Malignant neoplasm of anterior wall of nasopharynx
C11.8	Malignant neoplasm of overlapping sites of nasopharynx
C11.9	Malignant neoplasm of nasopharynx, unspecified
C12	Malignant neoplasm of pyriform sinus
C13.0	Malignant neoplasm of postcricoid region
C13.1	Malignant neoplasm of aryepiglottic fold, hypopharyngeal aspect
C13.2	Malignant neoplasm of posterior wall of hypopharynx
C13.8	Malignant neoplasm of overlapping sites of hypopharynx
C13.9	Malignant neoplasm of hypopharynx, unspecified

Proton Beam	
C14.0	Malignant neoplasm of pharynx, unspecified
C14.2	Malignant neoplasm of Waldeyer's ring
C14.8	Malignant neoplasm of overlapping sites of lip, oral cavity and pharynx
C22.0	Liver cell carcinoma
C22.2	Hepatoblastoma
C22.3	Angiosarcoma of liver
C22.4	Other sarcomas of liver
C22.7	Other specified carcinomas of liver
C22.8	Malignant neoplasm of liver, primary, unspecified as to type
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
C30.0	Malignant neoplasm of nasal cavity
C30.1	Malignant neoplasm of middle ear
C31.0	Malignant neoplasm of maxillary sinus
C31.1	Malignant neoplasm of ethmoidal sinus
C31.2	Malignant neoplasm of frontal sinus
C31.3	Malignant neoplasm of sphenoid sinus
C31.8	Malignant neoplasm of overlapping sites of accessory sinuses
C31.9	Malignant neoplasm of accessory sinus, unspecified
C32.0	Malignant neoplasm of glottis
C32.1	Malignant neoplasm of supraglottis
C32.2	Malignant neoplasm of subglottis
C32.3	Malignant neoplasm of laryngeal cartilage
C32.8	Malignant neoplasm of overlapping sites of larynx
C32.9	Malignant neoplasm of larynx, unspecified
C40.00	Malignant neoplasm of larynx, unspecified
C40.01	Malignant neoplasm of scapula and long bones of right upper limb
C40.02	Malignant neoplasm of scapula and long bones of left upper limb
C40.10	Malignant neoplasm of short bones of unspecified upper limb
C40.11	Malignant neoplasm of short bones of right upper limb
C40.12	Malignant neoplasm of short bones of left upper limb
C40.20	Malignant neoplasm of long bones of unspecified lower limb
C40.21	Malignant neoplasm of long bones of right lower limb
C40.22	Malignant neoplasm of long bones of left lower limb
C40.30	Malignant neoplasm of short bones of unspecified lower limb
C40.31	Malignant neoplasm of short bones of right lower limb
C40.32	Malignant neoplasm of short bones of left lower limb
C40.80	Malignant neoplasm of overlapping sites of bone and articular cartilage of unspecified limb

Proton Beam	
C40.81	Malignant neoplasm of overlapping sites of bone and articular cartilage of right limb
C40.82	Malignant neoplasm of overlapping sites of bone and articular cartilage of left limb
C41.0	Malignant neoplasm of bones of skull and face
C41.1	Malignant neoplasm of mandible
C41.2	Malignant neoplasm of vertebral column
C41.3	Malignant neoplasm of ribs, sternum and clavicle
C41.4	Malignant neoplasm of pelvic bones, sacrum and coccyx
C41.9	Malignant neoplasm of bone and articular cartilage, unspecified
C45.1	Mesothelioma of peritoneum
C45.7	Mesothelioma of other sites
C47.0	Malignant neoplasm of peripheral nerves of head, face and neck
C48.0	Malignant neoplasm of retroperitoneum
C48.8	Malignant neoplasm of overlapping sites of retroperitoneum and peritoneum
C49.0	Malignant neoplasm of connective and soft tissue of head, face and neck
C64.1	Malignant neoplasm of right kidney, except renal pelvis
C64.2	Malignant neoplasm of left kidney, except renal pelvis
C64.9	Malignant neoplasm of unspecified kidney, except renal pelvis
C69.00	Malignant neoplasm of unspecified conjunctiva
C69.01	Malignant neoplasm of right conjunctiva
C69.02	Malignant neoplasm of left conjunctiva
C69.10	Malignant neoplasm of unspecified cornea
C69.11	Malignant neoplasm of right cornea
C69.12	Malignant neoplasm of left cornea
C69.20	Malignant neoplasm of unspecified retina
C69.21	Malignant neoplasm of right retina
C69.22	Malignant neoplasm of left retina
C69.30	Malignant neoplasm of unspecified choroid
C69.31	Malignant neoplasm of right choroid
C69.32	Malignant neoplasm of left choroid
C69.40	Malignant neoplasm of unspecified ciliary body
C69.41	Malignant neoplasm of right ciliary body
C69.42	Malignant neoplasm of left ciliary body
C69.50	Malignant neoplasm of unspecified lacrimal gland and duct
C69.51	Malignant neoplasm of right lacrimal gland and duct
C69.52	Malignant neoplasm of left lacrimal gland and duct
C69.60	Malignant neoplasm of unspecified orbit
C69.61	Malignant neoplasm of right orbit
C69.62	Malignant neoplasm of left orbit
C69.80	Malignant neoplasm of overlapping sites of unspecified eye and adnexa
C69.81	Malignant neoplasm of overlapping sites of right eye and adnexa
C69.82	Malignant neoplasm of overlapping sites of left eye and adnexa
C69.90	Malignant neoplasm of unspecified site of unspecified eye
C69.91	Malignant neoplasm of unspecified site of right eye
C69.92	Malignant neoplasm of unspecified site of left eye

Proton Beam	
C70.0	Malignant neoplasm of cerebral meninges
C70.1	Malignant neoplasm of spinal meninges
C70.9	Malignant neoplasm of meninges, unspecified
C71.0	Malignant neoplasm of cerebrum, except lobes and ventricles
C71.1	Malignant neoplasm of frontal lobe
C71.2	Malignant neoplasm of temporal lobe
C71.3	Malignant neoplasm of parietal lobe
C71.4	Malignant neoplasm of occipital lobe
C71.5	Malignant neoplasm of cerebral ventricle
C71.6	Malignant neoplasm of cerebellum
C71.7	Malignant neoplasm of brain stem
C71.8	Malignant neoplasm of overlapping sites of brain
C71.9	Malignant neoplasm of brain, unspecified
C72.0	Malignant neoplasm of spinal cord
C72.1	Malignant neoplasm of cauda equina
C72.20	Malignant neoplasm of unspecified olfactory nerve
C72.21	Malignant neoplasm of right olfactory nerve
C72.22	Malignant neoplasm of left olfactory nerve
C72.30	Malignant neoplasm of unspecified optic nerve
C72.31	Malignant neoplasm of right optic nerve
C71.32	Malignant neoplasm of left optic nerve
C72.40	Malignant neoplasm of unspecified acoustic nerve
C72.41	Malignant neoplasm of right acoustic nerve
C72.42	Malignant neoplasm of left acoustic nerve
C72.50	Malignant neoplasm of unspecified cranial nerve
C72.59	Malignant neoplasm of other cranial nerves
C72.9	Malignant neoplasm of central nervous system, unspecified
C75.0	Malignant neoplasm of parathyroid gland
C75.1	Malignant neoplasm of pituitary gland
C75.2	Malignant neoplasm of craniopharyngeal duct
C75.3	Malignant neoplasm of pineal gland
C75.5	Malignant neoplasm of aortic body and other paraganglia
C7A.8	Other malignant neuroendocrine tumors
C76.0	Malignant neoplasm of head, face and neck
C76.1	Malignant neoplasm of thorax
C76.2	Malignant neoplasm of abdomen
C76.3	Malignant neoplasm of pelvis
C76.40	Malignant neoplasm of unspecified upper limb
C76.41	Malignant neoplasm of right upper limb
C76.42	Malignant neoplasm of left upper limb
C76.50	Malignant neoplasm of unspecified lower limb
C76.51	Malignant neoplasm of right lower limb
C76.52	Malignant neoplasm of left lower limb
C76.8	Malignant neoplasm of other specified ill-defined sites

Proton Beam	
C78.7	Secondary malignant neoplasm of liver and intrahepatic bile duct
C79.31	Secondary malignant neoplasm of brain
D32.0	Benign neoplasm of cerebral meninges
D32.1	Benign neoplasm of spinal meninges
D32.9	Benign neoplasm of meninges, unspecified
D33.0	Benign neoplasm of brain, supratentorial
D33.1	Benign neoplasm of brain, infratentorial
D33.2	Benign neoplasm of brain, unspecified
D33.3	Benign neoplasm of cranial nerves
D33.4	Benign neoplasm of spinal cord
D33.7	Benign neoplasm of other specified parts of central nervous system
D33.9	Benign neoplasm of central nervous system, unspecified
D35.2	Benign neoplasm of pituitary gland
D35.3	Benign neoplasm of craniopharyngeal duct
D35.4	Benign neoplasm of pineal gland
D35.6	Benign neoplasm of aortic body and other paraganglia
D42.0	Neoplasm of uncertain behavior of cerebral meninges
D42.1	Neoplasm of uncertain behavior of spinal meninges
D42.9	Neoplasm of uncertain behavior of meninges, unspecified
D43.0	Neoplasm of uncertain behavior of brain, supratentorial
D43.1	Neoplasm of uncertain behavior of brain, infratentorial
D43.2	Neoplasm of uncertain behavior of brain, unspecified
D43.4	Neoplasm of uncertain behavior of spinal cord
D44.10	Neoplasm of uncertain behavior of unspecified adrenal gland
D44.11	Neoplasm of uncertain behavior of right adrenal gland
D44.12	Neoplasm of uncertain behavior of left adrenal gland
D44.3	Neoplasm of uncertain behavior of pituitary gland
D44.4	Neoplasm of uncertain behavior of craniopharyngeal duct
D44.5	Neoplasm of uncertain behavior of pineal gland
D44.6	Neoplasm of uncertain behavior of carotid body
D44.7	Neoplasm of uncertain behavior of aortic body and other paraganglia
D49.6	Neoplasm of unspecified behavior of brain
D49.7	Neoplasm of unspecified behavior of endocrine glands and other parts of nervous system
G95.20	Unspecified cord compression
G95.29	Other cord compression
G95.9	Disease of spinal cord, unspecified
Q28.2	Arteriovenous malformation of cerebral vessels
Q28.3	Other malformations of cerebral vessels
Z92.3	Personal history of irradiation

Gamma Knife, LINAC	
C33	Malignant neoplasm of trachea
C34.00	Malignant neoplasm of unspecified main bronchus

Gamma Knife, LINAC	
C34.01	Malignant neoplasm of right main bronchus
C34.02	Malignant neoplasm of left main bronchus
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
C34.2	Malignant neoplasm of middle 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
C34.80	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
C34.90	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
C40.80	Malignant neoplasm of overlapping sites of bone and articular cartilage of unspecified limb
C40.81	Malignant neoplasm of overlapping sites of bone and articular cartilage of right limb
C40.82	Malignant neoplasm of overlapping sites of bone and articular cartilage of left limb
C40.90	Malignant neoplasm of unspecified bones and articular cartilage of unspecified limb
C40.91	Malignant neoplasm of unspecified bones and articular cartilage of right limb
C40.92	Malignant neoplasm of unspecified bones and articular cartilage of left limb
C41.0	Malignant neoplasm of bones of skull and face
C41.9	Malignant neoplasm of bone and articular cartilage, unspecified
C61	Malignant neoplasm of prostate
C64.1	Malignant neoplasm of right kidney, except renal pelvis
C64.2	Malignant neoplasm of left kidney, except renal pelvis
C64.9	Malignant neoplasm of unspecified kidney, except renal pelvis
C69.40	Malignant neoplasm of unspecified ciliary body
C69.41	Malignant neoplasm of right ciliary body
C69.42	Malignant neoplasm of left ciliary body
C70.0	Malignant neoplasm of cerebral meninges
C70.1	Malignant neoplasm of spinal meninges
C70.9	Malignant neoplasm of meninges, unspecified
C71.0	Malignant neoplasm of cerebrum, except lobes and ventricles
C71.1	Malignant neoplasm of frontal lobe
C71.2	Malignant neoplasm of temporal lobe
C71.3	Malignant neoplasm of parietal lobe
C71.4	Malignant neoplasm of occipital lobe
C71.5	Malignant neoplasm of cerebral ventricle
C71.6	Malignant neoplasm of cerebellum
C71.7	Malignant neoplasm of brain stem
C71.8	Malignant neoplasm of overlapping sites of brain
C71.9	Malignant neoplasm of brain, unspecified
C72.0	Malignant neoplasm of spinal cord

Gamma Knife, LINAC	
C72.1	Malignant neoplasm of cauda equina
C72.20	Malignant neoplasm of unspecified olfactory nerve
C72.21	Malignant neoplasm of right olfactory nerve
C72.22	Malignant neoplasm of left olfactory nerve
C72.30	Malignant neoplasm of unspecified optic nerve
C72.31	Malignant neoplasm of right optic nerve
C72.32	Malignant neoplasm of left optic nerve
C72.40	Malignant neoplasm of unspecified acoustic nerve
C72.41	Malignant neoplasm of right acoustic nerve
C72.42	Malignant neoplasm of left acoustic nerve
C72.50	Malignant neoplasm of unspecified cranial nerve
C72.59	Malignant neoplasm of other cranial nerves
C72.9	Malignant neoplasm of central nervous system, unspecified
C74.00	Malignant neoplasm of cortex of unspecified adrenal gland
C74.01	Malignant neoplasm of cortex of right adrenal gland
C74.02	Malignant neoplasm of cortex of left adrenal gland
C74.10	Malignant neoplasm of medulla of unspecified adrenal gland
C74.11	Malignant neoplasm of medulla of right adrenal gland
C74.12	Malignant neoplasm of medulla of left adrenal gland
C74.90	Malignant neoplasm of unspecified part of unspecified adrenal gland
C74.91	Malignant neoplasm of unspecified part of right adrenal gland
C74.92	Malignant neoplasm of unspecified part of left adrenal gland
C75.1	Malignant neoplasm of pituitary gland
C75.2	Malignant neoplasm of craniopharyngeal duct
C75.3	Malignant neoplasm of pineal gland
C75.5	Malignant neoplasm of aortic body and other paraganglia
C79.31	Secondary malignant neoplasm of brain
C79.32	Secondary malignant neoplasm of cerebral meninges
C79.40	Secondary malignant neoplasm of unspecified part of nervous system
C79.49	Secondary malignant neoplasm of other parts of nervous system
D02.20	Carcinoma in situ of unspecified bronchus and lung
D02.21	Carcinoma in situ of right bronchus and lung
D02.22	Carcinoma in situ of left bronchus and lung
D16.4	Benign neoplasm of bones of skull and face
D18.02	Hemangioma of intracranial structures
D32.0	Benign neoplasm of cerebral meninges
D32.1	Benign neoplasm of spinal meninges
D32.9	Benign neoplasm of meninges, unspecified
D33.0	Benign neoplasm of brain, supratentorial
D33.1	Benign neoplasm of brain, infratentorial
D33.2	Benign neoplasm of brain, unspecified
D33.3	Benign neoplasm of cranial nerves
D33.7	Benign neoplasm of other specified parts of central nervous system
D33.9	Benign neoplasm of central nervous system, unspecified

Gamma Knife, LINAC	
D35.2	Benign neoplasm of pituitary gland
D35.3	Benign neoplasm of craniopharyngeal duct
D35.4	Benign neoplasm of pineal gland
D42.0	Neoplasm of uncertain behavior of cerebral meninges
D42.1	Neoplasm of uncertain behavior of spinal meninges
D42.9	Neoplasm of uncertain behavior of meninges, unspecified
D43.0	Neoplasm of uncertain behavior of brain, supratentorial
D43.1	Neoplasm of uncertain behavior of brain, infratentorial
D43.2	Neoplasm of uncertain behavior of brain, unspecified
D43.4	Neoplasm of uncertain behavior of spinal cord
D49.6	Neoplasm of unspecified behavior of brain
D49.7	Neoplasm of unspecified behavior of endocrine glands and other parts of nervous system
G50.0	Trigeminal neuralgia
Q28.0	Arteriovenous malformation of precerebral vessels
Q28.2	Arteriovenous malformation of cerebral vessels
Q28.3	Other malformations of cerebral vessels
Z92.3	Personal history of irradiation

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