I. Policy: Proton Beam Radiation

II. Purpose/Objective:
To provide a policy of coverage regarding Proton Beam Radiation

III. Responsibility:
A. Medical Directors
B. Medical Management

IV. Required Definitions
1. Attachment – a supporting document that is developed and maintained by the policy writer or department requiring/authoring the policy.
2. Exhibit – a supporting document developed and maintained in a department other than the department requiring/authoring the policy.
3. Devised – the date the policy was implemented.
4. Revised – the date of every revision to the policy, including typographical and grammatical changes.
5. Reviewed – the date documenting the annual review if the policy has no revisions necessary.

V. Additional Definitions
Medical Necessity or Medically Necessary means Covered Services rendered by a Health Care Provider that the Plan determines are:

- appropriate for the symptoms and diagnosis or treatment of the Member’s condition, illness, disease or injury;
- provided for the diagnosis, and the direct care and treatment of the Member’s condition, illness disease or injury;
- in accordance with current standards of good medical treatment practiced by the general medical community.
- not primarily for the convenience of the Member, or the Member’s Health Care Provider; and
- the most appropriate source or level of service that can safely be provided to the Member. When applied to hospitalization, this further means that the Member requires acute care as an inpatient due to the nature of the services rendered or the Member’s condition, and the Member cannot receive safe or adequate care as an outpatient.

Medicaid Business Segment
Medical Necessity shall mean a service or benefit that is compensable under the Medical Assistance Program and if it meets any one of the following standards:

(i) The service or benefit will, or is reasonably expected to, prevent the onset of an illness, condition or disability.
(ii) The service or benefit will, or is reasonably expected to, reduce or ameliorate the physical, mental or development effects of an illness, condition, injury or disability.
(iii) The service or benefit will assist the Member to achieve or maintain maximum functional
capacity in performing daily activities, taking into account both the functional capacity of the Member and those functional capacities that are appropriate for members of the same age.

DESCRIPTION:
Proton beams are one of several types of subatomic particles that have been used the treatment of malignancies. Proton beams are particulate radiation therapy, which differs from photon and/or conventional electromagnetic radiation therapy because of its unique property of minimal dispersal as the beam passes through the tissue. This minimizes radiation exposure to the normal surrounding tissues. This therapy requires accurate localization of tumor and precise, reproducible positioning of the patient.

INDICATIONS: Requires Prior Authorization by a Plan Medical Director or Designee
Requests for proton beam radiation will be evaluated on a per-case basis for the following indications:

▪ Treatment of melanoma of the uveal tract (including iris, choroids and ciliary body); or
▪ Postoperative therapy in patients who have biopsy proven chordomas or chondrosarcomas in the skull base region or sphenoid spine; or
▪ Treatment of arteriovenous malformations (AVMs) of the brain adjacent to critical structures such as the optic nerve, brain stem or spinal cord not amenable to surgical excision or stereotactic radiation; or
▪ Pituitary Neoplasms; or
▪ Central nervous system lesions including but not limited to, primary or metastatic malignancies adjacent to critical structures such as the optic nerve, brain stem or spinal cord not amenable to surgical excision or stereotactic radiation

Proton beam radiation therapy may be evaluated for coverage on a per-case basis for a diagnosis that is not listed above when documentation is if avoidance of the surrounding normal tissue cannot be adequately achieved with standard radiation therapy techniques including intensity modulated radiation therapy (IMRT)* and stereotactic body radiation therapy (SBRT)**.

* Please refer to MP192 for a description of coverage regarding Intensity Modulated Radiation Therapy

**Please refer to MP084 for a description of coverage regarding Stereotactic Radiosurgery

Medicaid Business Segment

Request for coverage will be considered on a per case basis through the program exception process.

Medicare Business Segment

Coverage is in accordance with the local Medicare carrier’s coverage mandate on proton beam radiation therapy.

Indications for the Medicare Business Segment:

▪ Benign or malignant central nervous system tumors to include but not limited to primary and variant forms of astrocytoma, glioblastoma, medulloblastoma, acoustic neuroma, craniopharyngioma, benign and atypical meningiomas, and pineal gland tumors.
▪ Intraocular melanomas
▪ Pituitary neoplasms
▪ Benign or malignant conditions of the base of the skull or axial skeleton including but not limited to chordomas and chondrosarcomas
▪ Malignant lesions of the head and neck
▪ Lung Cancer, especially NSCLC
▪ Unresectable retroperitoneal sarcoma and extremity sarcoma
▪ Solid tumors in children up to age 18
▪ Prostate Cancer when the following criteria are met:
  o Physician documentation of patient selection criteria (stage and other factors);
  o Documentation and verification that the patient was informed of the range of therapy choices, including risks and benefits; and
  o Documentation of the specific reasons why Proton Beam was the treatment of choice for the specific patient.

In addition, Proton Beam Therapy is indicated for the Medicare Business Segment when:
The Dose Volume Histogram (DVH) illustrates at least three (3) critical structures or organs protected by the use of Proton Beam Therapy.

- The dose to control or treat the tumor cannot be delivered without exceeding the tolerance of the normal tissue.
- There is documented clinical rationale that doses generally thought to be above the level otherwise attainable with other radiation methods might improve control rate;
- There is documented clinical rationale that higher levels of precision associated with Proton Beam Therapy compared to other radiation treatments are clinically necessary.

EXCLUSIONS:
Charged-particle irradiation with proton beams using standard treatment doses is NOT considered medically necessary in patients with clinically localized prostate or rectal cancer. The Geisinger Technology Assessment Committee evaluated this technology and concluded that there is insufficient evidence in the peer-reviewed published medical literature to establish the superiority of this treatment on clinical outcomes when compared to other approaches including intensity modulated radiation therapy (IMRT) or conformal radiation therapy.

Note: A complete description of the process by which a given technology or service is evaluated and determined to be experimental, investigational or unproven is outlined in MP 15 - Experimental Investigational or Unproven Services or Treatment.

CODING ASSOCIATED WITH:
The following codes are included below for informational purposes and may not be all inclusive. Inclusion of a procedure or device code(s) does not constitute or imply coverage nor does it imply or guarantee provider reimbursement. Coverage is determined by the member specific benefit plan document and any applicable laws regarding coverage of specific services. Please note that per Medicare coverage rules, only specific CPT/HCPCS Codes may be covered for the Medicare Business Segment. Please consult the CMS website at [www.cms.gov](http://www.cms.gov) or the local Medicare Administrative Carrier (MAC) for more information on Medicare coverage and coding requirements.

- 77520  Proton treatment delivery; simple, without compensation
- 77522  Proton treatment delivery; simple with compensation
- 77523  Proton treatment delivery; intermediate
- 77525  Proton treatment delivery; complex
- 77399  Medical radiation physics, dosimetry and treatment devices, and special services
- 77299  Therapeutic radiology clinical treatment planning
- 77499  Therapeutic radiology treatment management
- S8030  Scleral application of Tantalum ring(s) for localization of lesions for proton beam therapy
- 170.2  Malignant neoplasm vertebrae
- 190.0-190.9 Malignant neoplasm of eye
- 191.5  Malignant neoplasm of the ventricles
- 192.2  Malignant neoplasm of the spinal cord
- 194.0-194.4 Malignant neoplasm of adrenal gland, parathyroid gland, pituitary gland and craniopharyngeal duct, pineal gland
- 747.81 Anomalies of cerebrovascular system


LINE OF BUSINESS:
Eligibility and contract specific benefits, limitations and/or exclusions will apply. Coverage statements found in the line of business specific benefit document will supersede this policy. For Medicare, applicable LCD’s and NCD’s will supersede this policy. For PA Medicaid Business segment, this policy applies as written.

REFERENCES:


National Comprehensive Cancer Network (NCCN) Uveal Melanoma Version 1.2018


This policy will be revised as necessary and reviewed no less than annually.

Devised: 1/15/09

Revised: 2/11 (indications), 2/12 (indications), 2/14, 2/16 (indications); 1/19 (indications)

Reviewed: 2/10, 2/13, 2/15, 2/17, 1/18, 1/20