

**2020, Apr. 2020 Release CP:Procedures****Subset:** Proton Beam Radiotherapy (PBRT) (Pediatric) (1, 2, 3, 4, 5)**Requested Service:** Proton Beam Radiotherapy (PBRT) (Pediatric)**Age:** Age < 18

Patient:	Name:	DOB:	ID #:	GROUP #:
	Sex (circle): M / F	Height:	Weight:	
Provider/PCP:	Name:	Fax #:	Phone #:	
	NPI/ID #:	Signature:	Date:	
Servicing:	Vendor/Facility:	Phone #:		
	Diagnosis/ICD:	Service Date:	Authorization: / / to / /	

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ICD-10:

CPT®:

**INSTRUCTIONS:** Choose one of the following options and continue to the appropriate section

- 10. Atypical teratoid rhabdoid tumor by biopsy
- 20. Chondrosarcoma by biopsy
- 30. Chordoma by biopsy
- 40. Craniopharyngioma by biopsy
- 50. Ependymoma by MRI
- 60. Ewing sarcoma by biopsy
- 70. Glioblastoma by MRI
- 80. Glioma or astrocytoma by MRI
- 90. Hodgkin lymphoma by biopsy
- 100. Intracranial germ cell tumor by biopsy
- 110. Medulloblastoma by MRI
- 120. Neuroblastoma by biopsy
- 130. Osteosarcoma by biopsy
- 140. Retinoblastoma by ophthalmic examination
- 150. Rhabdomyosarcoma by biopsy
- 160. Soft tissue sarcoma by biopsy
- 170. Supratentorial primitive neuroectodermal tumor by MRI

- 10. Atypical teratoid rhabdoid tumor by biopsy

There are no questions for the requested service

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20. Chondrosarcoma by biopsy

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There are no questions for the requested service

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30. Chordoma by biopsy

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There are no questions for the requested service

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40. Craniopharyngioma by biopsy

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There are no questions for the requested service

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50. Ependymoma by MRI

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There are no questions for the requested service

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60. Ewing sarcoma by biopsy

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There are no questions for the requested service

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70. Glioblastoma by MRI

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There are no questions for the requested service

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80. Glioma or astrocytoma by MRI

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There are no questions for the requested service

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90. Hodgkin lymphoma by biopsy

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There are no questions for the requested service

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100. Intracranial germ cell tumor by biopsy

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There are no questions for the requested service

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110. Medulloblastoma by MRI

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There are no questions for the requested service

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120. Neuroblastoma by biopsy

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There are no questions for the requested service

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130. Osteosarcoma by biopsy

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There are no questions for the requested service

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140. Retinoblastoma by ophthalmic examination

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There are no questions for the requested service

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150. Rhabdomyosarcoma by biopsy

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There are no questions for the requested service

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160. Soft tissue sarcoma by biopsy

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There are no questions for the requested service

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170. Supratentorial primitive neuroectodermal tumor by MRI

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There are no questions for the requested service

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### Reference

**Ltd** - This requested service is designated as 'Limited Evidence' in this clinical scenario. Criteria cannot be met.

**2nd** - Secondary review required. Criteria cannot be met.

*Off-label* - Use of a drug for an indication not approved by the U.S. Food and Drug Administration (FDA).

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**Notes:****1:**

According to the American Society for Radiation Oncology, most pediatric central nervous system cancers are considered appropriate for treatment with proton beam radiotherapy (PBRT) (American Society of Radiation Oncology, ASTRO Model Policy Proton Beam Therapy. 2013). This recommendation is due to the demonstrated ability of PBRT to decrease the radiation exposure to normal surrounding tissue more effectively than any photon-based form of radiation. This characteristic is of significant benefit given the radiosensitive nature of central nervous system tissue in children and the well documented late effects of central nervous system tumor survivors treated with photon-based radiation (Indelicato et al., *Pediatr Blood Cancer* 2017, 64:). There is evidence of potential advantages with superior dose distribution and established negative effects of dose in normal tissues in children for PBRT; however, there is very limited randomized control data, as a trial comparing proton and photon in pediatric population would not be ethical, according to the American Society for Radiation Oncology subcommittee on emerging technology (Armoogum and Thorp, *Cancers (Basel)* 2015, 7: 706-22).

**2:**

These criteria include the following procedures:

- Charged Particle Radiation Therapy
- Charged Particle Radiotherapy
- Proton Beam Radiation Therapy
- Proton Radiation Therapy

**3:**

InterQual® Procedures criteria are derived from the systematic, continuous review and critical appraisal of the most current evidence-based literature and include input from our independent panel of clinical experts. To generate the most appropriate recommendations, a comprehensive literature review of the clinical evidence was conducted. Sources searched included PubMed, Agency for Healthcare Research and Quality (AHRQ) Comparative Effectiveness Reviews, the Cochrane Library, Choosing Wisely, Centers for Medicare & Medicaid Services (CMS) National Coverage Determinations, the National Institute of Health and Care Excellence (NICE), and the National Guideline Clearinghouse. Other medical literature databases, medical content providers, data sources, regulatory body websites, and specialty society resources may also have been used. Relevant studies were assessed for risk of bias following principles described in the Cochrane Handbook. The resulting evidence was assessed for consistency, directness, precision, effect size, and publication bias. Observational trials were also evaluated for the presence of a dose-response gradient and the likely effect of plausible confounders.

**4:**

I/O Setting: Outpatient

**5:**

Proton beam radiotherapy (PBRT) is a type of external beam radiation therapy that uses positively charged subatomic particles to create ionizing cellular damage, to destroy tumor cells. Proton beam radiotherapy (PBRT) is preferred to conventional radiotherapy as it deposits energy at precise depths to the last millimeter of its trajectory. This results in a sharp, localized peak in the dose, called the Braggs peak, which reduces scatter and the amount of radiation delivered to non-targeted, adjacent, healthy tissue (Widder et al., *Int J Radiat Oncol Biol Phys* 2016, 95: 30-6).

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**ICD-10-CM (circle all that apply):** C40.00, C40.01, C40.02, C40.10, C40.11, C40.12, C40.20, C40.21, C40.22, C40.30, C40.31, C40.32, C40.80, C40.81, C40.82, C40.90, C40.91, C40.92, C41.0, C41.1, C41.2, C41.3, C41.4, C41.9, C49.0, C49.10, C49.11, C49.12, C49.20, C49.21, C49.22, C49.3, C49.4, C49.5, C49.6, C49.8, C49.9, C69.20, C69.21, C69.22, C71.0, C71.1, C71.2, C71.3, C71.4, C71.5, C71.6, C71.7, C71.8, C71.9, C74.90, C74.91, C74.92, C81.00, C81.01, C81.02, C81.03, C81.04, C81.05, C81.06, C81.07, C81.08, C81.09, C81.10, C81.11, C81.12, C81.13, C81.14, C81.15, C81.16, C81.17, C81.18, C81.19, C81.20, C81.21, C81.22, C81.23, C81.24, C81.25, C81.26, C81.27, C81.28, C81.29, C81.30, C81.31, C81.32, C81.33, C81.34, C81.35, C81.36, C81.37, C81.38, C81.39, C81.40, C81.41, C81.42, C81.43, C81.44, C81.45, C81.46, C81.47, C81.48, C81.49, C81.70, C81.71, C81.72, C81.73, C81.74, C81.75, C81.76, C81.77, C81.78, C81.79, C81.90, C81.91, C81.92, C81.93, C81.94, C81.95, C81.96, C81.97, C81.98, C81.99, D35.3, D44.4, Other \_\_\_\_\_

**ICD-10-PCS (circle all that apply):** D0004ZZ, D0014ZZ, D0064ZZ, D7014ZZ, D7034ZZ, D7044ZZ, D7054ZZ, D7064ZZ, D7074ZZ, D7084ZZ, D8004ZZ, D9034ZZ, D90D4ZZ, D90F4ZZ, DP004ZZ, DP024ZZ, DP034ZZ, DP044ZZ, DP054ZZ, DP064ZZ, DP074ZZ, DP084ZZ, DP094ZZ, DP0B4ZZ, DP0C4ZZ, Other \_\_\_\_\_

**CPT® (circle all that apply):** 77520, 77522, 77523, 77525, Other \_\_\_\_\_