# OHCA Guideline

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| **Medical Procedure Class:** | Proton Beam Therapy |
| Initial Implementation Date: | March 1, 2015 |
| Last Review Date: | 2015 |
| Effective Date: | March 15, 2020 |
| Next Review/Revision Date: | 2023 |

* This document is not a contract, and these guidelines do not reflect or represent every conceived situation. Although all items contained in these guidelines may be met, this does not reflect, or imply, any responsibility of this agency or department to change the plan provision to include the stated service as an eligible benefit.

☐ New Criteria ☑ Revision of Existing Criteria

## Summary

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| **Purpose:** | To provide guidelines to assure medical necessity and consistency in the prior authorization process. |

## Definitions

**Intensity Modulated Radiation (Photon) Therapy (IMRT):** A type of 3-dimensional radiation therapy that uses computer-generated images to show the size and shape of the tumor. Using photons, thin beams of radiation of different intensities are aimed at the tumor from many angles. This type of radiation therapy reduces collateral damage to healthy tissue near the tumor.

**Proton Beam Radiation Therapy (PBT):** A type of radiation therapy that uses streams of protons (tiny particles with a positive charge) to kill tumor cells. This type of treatment can reduce the amount of radiation damage to healthy tissue near a tumor.

## Description

Proton Beam Therapy uses a beam of special particles (protons) that carry a positive charge. The goal is to deliver a higher target dose with a lower normal tissue exposure than is possible with conventional photon radiation, thereby improving local control of tumors and reducing acute and late complications. The use of PBT can be advantageous in pediatric cancers due a potential reduction in toxic and late effects (lower total radiation dosage, fewer side effects, and decrease risk for secondary malignancies.) There is no significant difference in the biological effects of protons versus photons; however, protons can deliver a dose of radiation in a more confined way to the tumor tissue. After entering the body, protons release most of their energy within the tumor region and, unlike photons, deliver only a minimal dose beyond the tumor boundaries. The greatest energy release with conventional radiation (photons) is at the surface of the tissue and decreases exponentially the farther it travels. In contrast, the energy of proton beam is released at the end of its path, a region called the Bragg peak. Since the energy release of the proton beam is confined to the narrow Bragg peak, collateral damage to the surrounding tissue is reduced while an increased dose of radiation can be delivered to the tumor. PBT may be useful when the target is in close proximity to one or more critical structures and sparing the surrounding normal tissue cannot be adequately achieved with photon-based radiation therapy.

## CPT Codes Covered Requiring Prior Authorization (PA)

**77520** (Proton Beam Delivery, *simple, without compensation*) A single treatment area utilizing a single non-tangential/oblique port and custom blocking, *without compensation*

**77522** (*simple, with compensation*) A single treatment area utilizing a single non-tangential/oblique port and custom blocking, *with compensation*

**77523** (*intermediate, with compensation*) One or more treatment areas, utilizing two or more ports **or** one or more tangential/oblique ports, with custom blocks and compensators

**77525** (*complex, with compensation*) One or more treatment areas utilizing two or more ports per treatment area with matching or patching fields and/or multiple isocenters, with custom blocks and compensators

## Approval Criteria

**INDICATIONS**

A. The referral for proton beam radiotherapy should come from the radiation oncologist; AND

B. The patient's record must demonstrate why Proton Beam Radiotherapy is considered the treatment of choice for the individual patient. The record must address the lower risk to normal tissue, the lower risk of disease recurrence, and the advantages of the treatment over IMRT or 3- dimensional conformal radiation; AND

C. The intent of treatment must be curative (not palliative care); AND

D. The presence of an Institutional Review Board (IRB) or Tumor Board review when appropriate and documented patient (parent or guardian) informed consent; AND

E. The patient has a diagnosis of one or more of the following:

1. Ocular tumors - including intraocular melanomas and ocular adnexal tumors such as tumors of the lacrimal gland;
2. Malignant or benign conditions of the base of the skull;
3. Esophageal Cancers;
4. Malignant or benign central nervous system tumors;
5. Malignant or benign tumors of the spine or around the spinal cord where the radiation tolerance of the spinal cord may be comprised or previous radiation has occurred;
6. Hepatocellular carcinoma and cholangiocarcinoma (HCC) that is unresectable;
7. Malignant lesions of the head and neck - including but not limited to nasopharyngeal, oropharyngeal, paranasal sinus and nasal cavity cancers as well as benign head and neck tumors with long anticipated survivorship.
8. Unresectable retroperitoneal sarcoma;

F. Malignant or benign tumors that do not meet the above criteria may be submitted to OHCA medical director for review.

## Discontinuation Criteria

The intent of PBT treatment must be curative with a long-term expected benefit or greater than 2 years life expectancy. If/when an adequate dose cannot be given to the whole Gross Tumor Volume (GTV) the aim of therapy shifts from radical to palliative. In the case of patients with a limited expected survival time, late effects of radiotherapy are of secondary

importance removing the advantage of PBT. Palliative radiotherapy rarely improves survival rates and PBT is no longer appropriate at this time.

## References


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