

## Prostate Cancer

**Note:** For Medicare members/enrollees, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Please refer to the CMS website at <http://www.cms.gov> for additional information.

**Note:** For Medicaid members/enrollees, circumstances when state Medicaid coverage provisions conflict with the coverage provisions within this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

### DISCUSSION

Early detection of prostate cancer has led to a decrease in prostate cancer mortality over the past few decades. Radiation is one of the treatment options that is considered in many cases of prostate cancer. The main types of radiation therapy used for prostate cancer are external beam radiation and brachytherapy. The methods for delivering prostate radiation therapy and using radiation therapy to treat prostate cancer are evidence-based as they have been established through clinical trials.<sup>1</sup>

#### External Beam Radiation Therapy

Radiation techniques using external beam radiation have advanced to allow higher doses of radiation to be administered safely. 3D conformal radiation therapy (3D-CRT) is a type of radiation treatment that shapes the radiation beams to match the shape of the tumor. Intensity-modulated radiation therapy (IMRT) is another type of radiation technique that can achieve tightly conformal dose distributions with the use of nonuniform radiation beams. Image-guided radiation therapy (IGRT) is the use of imaging during radiation therapy to improve the precision and accuracy of treatment delivery.<sup>2</sup>

Recently, shorter fractionation schedules (4 to 6 weeks) have been tested in randomized trials and their efficacy is similar to conventionally fractionated schedules (8 weeks). A recent ASTRO/ASCO/AUA evidence-based guideline regarding the use of hypo-fractionated radiation in patients with localized prostate cancer concluded that these regimens can be considered routine in this setting.<sup>3</sup>

#### Stereotactic Body Radiotherapy (SBRT)

SBRT is a technique that uses conformal high dose radiation in five or fewer treatment fractions. Several phase 3 studies are ongoing that compare SBRT to standard external beam radiation therapy. Preliminary results suggest equivalent outcomes between the two treatment approaches. SBRT can be considered an alternative to conventionally fractionated regimens for patients with localized prostate cancer.<sup>3</sup>

#### Brachytherapy

Brachytherapy involves placing radioactive seeds within the prostate. It can be used alone for patients with localized disease or as a boost for patients with unfavorable intermediate or high-risk disease.<sup>3</sup>

There are two methods for prostate brachytherapy, including low dose rate brachytherapy and high dose rate brachytherapy.<sup>3</sup>

#### Proton Therapy

Proton-based radiotherapy delivers less radiation dose to the surrounding normal tissue compared to photon radiotherapy. Current phase 3 studies comparing photon to proton radiotherapy for prostate cancer are ongoing and firm conclusions regarding differences in toxicities between the two modalities cannot be made based on the

evidence available. Therefore, proton therapy is considered not medically necessary in the treatment of prostate cancer.<sup>3</sup>

## DEFINITIONS

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- **Boost** - After radiation therapy, further additional treatment may be required (called a boost).
- **Brachytherapy (BT)** - Brachytherapy is a procedure that involves placing radioactive material inside your body. Brachytherapy is sometimes called internal radiation.
- **External beam radiation therapy (EBRT)** - External radiation (or external beam radiation) is the most common type of radiation therapy used for cancer treatment. A machine is used to aim high-energy rays (or beams) from outside the body into the tumor.
- **Fractions** - A way of dividing a total dose of radiation into separate doses to be administered over a period of time.
- **Gray (Gy)** - One of the two units used to measure the amount of radiation absorbed by an object or person, known as the absorbed dose. One gray (Gy) is the international system of units (SI) equivalent of 100 rads, which is equal to an absorbed dose of 1 Joule/kilogram.
- **Image-guided radiation therapy (IGRT)** - Image-guided radiation therapy (IGRT) is the use of imaging during radiation therapy to improve the precision and accuracy of treatment delivery. IGRT is used to treat tumors in areas of the body that move, such as the lungs. Radiation therapy machines are equipped with imaging technology to allow your doctor to image the tumor before and during treatment. By comparing these images to the reference images taken during simulation, the patient's position and/or the radiation beams may be adjusted to more precisely target the radiation dose to the tumor. To help align and target the radiation equipment, some IGRT procedures may use fiducial markers, ultrasound, MRI, X-ray images of bone structure, CT scan, 3D body surface mapping, electromagnetic transponders, or colored ink tattoos on the skin.
- **Intensity-modulated radiotherapy (IMRT)** - Intensity-modulated radiation therapy (IMRT) is an advanced mode of high-precision radiotherapy that uses computer-controlled linear accelerators to deliver precise radiation doses to a malignant tumor or specific areas within the tumor. IMRT allows for the radiation dose to conform more precisely to the three-dimensional shape of the tumor by controlling the intensity of the radiation beam in multiple small volumes. IMRT also allows higher radiation doses to be focused to regions within the tumor while minimizing the dose to surrounding normal critical structures.
- **National Comprehensive Cancer Network® (NCCN)** - An alliance of 32 leading cancer centers devoted to patient care, research, and education. The NCCN guidelines are utilized for Radiation Therapy and Medical Oncology standards. NCCN consensus clinical standards are periodically updated and NantHealth, Inc. reviews these and updates its policies within a timely manner.
- **Palliative Radiation Therapy** - Treatment given to help relieve the symptoms and reduce the suffering caused by cancer or other life-threatening diseases. Palliative therapy may help a person feel more comfortable, but it does not treat or cure the disease. Palliative therapy may be given with other treatments from the time of diagnosis until the end of life.
- **Stereotactic body radiation therapy (SBRT)** - Treatment outside the brain is called stereotactic body radiation therapy (SBRT). SBRT may be used for certain lung, spine, and liver tumors.
- **Three dimensional conformal radiation therapy (3D-CRT)** - A procedure that uses a computer to create a three dimensional picture of the tumor. This allows doctors to give the highest possible dose of radiation to the tumor, while sparing the normal tissue as much as possible.

## POLICY

The following table outlines the criteria that must be met for the number of fractions and dosing relative to prostate cancer radiation treatments. This dosing table represents evidence-based doses and fractions for the designated type of cancer treatment. Variations outside of the ranges may indicate a deviation from standard treatment.

Prostate Cancer - Localized Disease (Low, Intermediate, and High-Risk Disease)			
	Number of Fractions	Total Dose	Technique
Conventional Fractionation	37-45	70-81 Gy	3D or IMRT, IGRT
Hypofractionation	20-28	60-70 Gy	3D or IMRT, IGRT
Ultra-hypofractionation	5	30-40 Gy	SBRT
Low Dose Rate Brachytherapy as Monotherapy	1	145 Gy – Iodine 125 125 Gy – Palladium 103 115 Gy – Cesium 131	Brachytherapy
Low Dose Rate Brachytherapy with External Beam Radiation Therapy	1	110-115 Gy – Iodine 125 90-100 Gy – Palladium 103 85 Gy – Cesium 131	3D or IMRT, IGRT Brachytherapy
High Dose Rate Brachytherapy as Monotherapy	2-4	13.5 Gy × 2 implants 9.5 Gy BID × 2 implants	Brachytherapy
High Dose Rate Brachytherapy (Adjuvant)	1-2	15 Gy × 1 fraction 10.75 Gy × 2 fractions	Brachytherapy

Stage IV Disease			
	Number of Fractions	Total Dose	Technique
Low Volume Metastatic Disease	6 or 20	55 Gy in 20 fractions 36 Gy in 6 fractions	3D or IMRT, IGRT
Palliation	1-15	37.5 Gy in 15 fractions	3D, IGRT

## REFERENCES

1. Radiation therapy for prostate cancer. American Cancer Society. <https://www.cancer.org/cancer/prostate-cancer/treating/radiation-therapy.html>. Accessed April 22, 2022.
2. External beam radiation therapy for cancer. National Cancer Institute. <https://www.cancer.gov/about-cancer/treatment/types/radiation-therapy/external-beam>. Accessed April 22, 2022.
3. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Prostate Cancer (Version 4.2022). Available at [https://www.nccn.org/professionals/physician\\_gls/pdf/prostate.pdf](https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf). ©National Comprehensive Cancer Network, 2022.
4. Morgan SC, Hoffman K, Loblaw DA, et al. Hypofractionated Radiation Therapy for Localized Prostate Cancer: Executive Summary of an ASTRO, ASCO, and AUA Evidence-Based Guideline. *Pract Radiat Oncol*. 2018;8(6):354-360.
5. Basic information about prostate cancer. Centers for Disease Control and Prevention. [https://www.cdc.gov/cancer/prostate/basic\\_info/index.htm](https://www.cdc.gov/cancer/prostate/basic_info/index.htm). Accessed April 22, 2022.
6. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Prostate Cancer (Version 1.2021). Available at [https://www.nccn.org/professionals/physician\\_gls/pdf/prostate.pdf](https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf). ©National Comprehensive Cancer Network, 2022.

Please see all related radiation therapy treatment policies for additional information on the treatment modalities. (3D-CRT, BT, EBRT, IGRT, IMRT and SRS)

**CODING [ICD-10 AND HCPCS]\***

\*Procedure codes appearing in medical policy documents are only included as a general reference. This list may not be all-inclusive and is subject to updates. In addition, codes listed are not a guarantee of payment. CPT codes are available through the AMA.

Code	Description
C61	Malignant neoplasm prostate
G6015	Intensity-modulated treatment delivery, single or multiple fields/arcs, via narrow spatially and temporally modulated beams, binary, dynamic MLC, per treatment session
G6016	Compensator-based beam modulation treatment delivery of inverse planned treatment using three or more high-resolution (milled or cast) compensator, convergent beam modulated fields, per treatment session
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 5 sessions per course of treatment
Z92.3	Personal history of irradiation

**REVISION AND REVIEW HISTORY**

No.	Description	Metadata
1	Original Effective Date:	5/2022
2	Policy Review Dates:	4/25/2022, 4/26/2022, 5/2/2022, 5/4/2022, 5/5/2022, 6/2/2022, 7/20/2022
3	Policy Revision Dates:	4/25/2022, 4/26/2022, 5/2/2022, 5/4/2022, 5/5/2022, 6/2/2022, 7/20/2022
4	Department Owner:	Medical Affairs
5	NH Advisory Committee Approval Dates:	5/5/2022, 6/2/2022
6	Revision Changes:	