



*National Imaging Associates, Inc.	
Clinical guideline PROSTATE CANCER	Original Date: March 2011
Radiation Oncology	Last Revised Date: May 2023
Guideline Number: NIA_CG_124	Implementation Date: January 2024

GENERAL INFORMATION

- *It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.*
- *Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*

MEDICALLY NECESSARY INDICATIONS FOR RADIATION THERAPY^{1,2}

EBRT/IMRT hypofractionation of 20-28 fractions are recommended to treat localized prostate cancer when pelvic nodes are not treated. Other treatment regimens require clinical documentation that supports medical necessity and will be reviewed on a case-by-case basis.

Very Low Recurrence Risk: (Primary Tumor Stage [T] is T1c, PSA <10 ng/ml, and Grade Group 1, PSA density <0.15ng/nl per g, < 3 biopsy cores positive with ≤ 50% cancer in each)

- Active surveillance (patients are encouraged to pursue active surveillance)
- External Beam Radiation
 - Clinicians should not electively radiate pelvic lymph nodes³⁻⁵
 - Highly conformal radiation therapy technique (3D-CRT/IMRT with IGRT). Hypofractionation 20-28 fractions
 - SBRT delivered at five fractions or less at 6.5 Gy per fraction or greater. Appropriate as a standalone radiation modality and not as a boost to other conventional methods of radiation treatment
- LDR (low dose-rate) or HDR (high dose-rate) Brachytherapy alone

Low Recurrence Risk: (Primary Tumor Stage [T] is T1-T2a, PSA <10 ng/ml, and Grade Group 1

- Active surveillance (patients are encouraged to pursue active surveillance)

- External Beam Radiation Therapy
 - Clinicians should not electively radiate pelvic lymph nodes³⁻⁵
 - Highly conformal radiation therapy technique (3D-CRT/IMRT with IGRT). Hypofractionation 20-28 fractions (with or without radiation to the seminal vesicles, regardless of patient age, comorbidity, anatomy, or urinary function²
 - SBRT delivered at five fractions or less at 6.5 Gy per fraction or greater. Appropriate as a standalone radiation modality and not as a boost to other conventional methods of radiation treatment.
- LDR (low dose-rate) or HDR (high dose-rate) Brachytherapy alone

Favorable Intermediate Recurrence Risk: Grade Group 1 with PSA 10-<20 ng/mL or clinical stage T2b-c and < 50%* biopsy cores positive OR Grade Group 2 with PSA <10 ng/mL and clinical stage T1-2a and < 50% biopsy cores positive

- Active surveillance (discussed with patient as treatment option)
- External Beam Radiation Therapy
 - Clinicians should not electively radiate pelvic lymph nodes³⁻⁵
 - Highly conformal radiation therapy technique (3D-CRT/IMRT with IGRT). Hypofractionation- 20-28 fractions (with or without radiation to the seminal vesicles, regardless of patient age, comorbidity, anatomy, or urinary function²
 - SBRT delivered at five fractions or less at 6.5 Gy per fraction or greater. Appropriate as a standalone radiation modality and **NOT** as a boost to other conventional methods of radiation treatment.
- LDR (low dose-rate) or HDR (high dose-rate) Brachytherapy alone

Unfavorable Intermediate Recurrence Risk: Grade Group 1 with PSA 10-<20 ng/mL and clinical stage T2b-c OR Grade Group 2 with PSA 10-<20 ng/mL and/or clinical stage T2b-c and/or ≥ 50%* biopsy cores positive OR Grade Group 3 with PSA < 20 ng/mL

- External Beam Radiation Therapy
 - Prophylactic nodal radiation can be considered if additional risk assessments suggest aggressive tumor behavior¹
 - Highly conformal radiation therapy technique (3D-CRT/IMRT with IGRT). Hypofractionation- 20-28 fractions (with or without radiation to the seminal vesicles, regardless of patient age, comorbidity, anatomy, or urinary function²
 - When treating the pelvic lymph nodes with radiation, clinicians should utilize intensity-modulated radiation therapy (IMRT) with doses between 45-52 Gy³⁻⁵
 - SBRT delivered at five fractions or less at 6.5 Gy per fraction or greater. Appropriate as a standalone radiation modality and NOT as a boost to other conventional methods of radiation treatment.
- Brachytherapy (LDR/HDR) boost combined with EBRT after 15-28 fractions

High Recurrence Risk: (Primary Tumor Stage [T] T3a OR PSA > 20 ng/ml OR Grade Group 4 or Grade Group 5

- External Beam Radiation Therapy
 - In patients with high-risk prostate cancer electing radiation therapy, clinicians may offer radiation to the pelvic lymph nodes³⁻⁵
 - When treating the pelvic lymph nodes with radiation, clinicians should utilize intensity-modulated radiation therapy (IMRT) with doses between 45-52 Gy³⁻⁵
 - Highly conformal radiation therapy technique (3D-CRT/IMRT with IGRT). Hypofractionation- 20-28 fractions (with or without radiation to the seminal vesicles, regardless of patient age, comorbidity, anatomy, or urinary function²
 - Up to 45 fractions are medically necessary when pelvic nodes are treated. Gross or PSMA-positive lymph nodes are boosted to 55.2 Gy in 23 fractions.
 - SBRT delivered at five fractions or less at 6.5 Gy per fraction or greater. Appropriate as a standalone radiation modality and NOT as a boost to other conventional methods of radiation treatment.
- Brachytherapy (LDR/HDR) boost combined with EBRT after 15-28 fractions.

Very High Recurrence Risk (Primary Tumor Stage [T] T3b-T4) OR Grade Group 4 or Grade Group 5 OR 2 or 3 high-risk features OR >4 cores with Grade Group 4 or 5

- External Beam Radiation Therapy
 - In patients with very high-risk prostate cancer electing radiation therapy, clinicians may offer radiation to the pelvic lymph nodes³⁻⁵
 - When treating the pelvic lymph nodes with radiation, clinicians should utilize intensity-modulated radiation therapy (IMRT) with doses between 45-52 Gy³⁻⁵
 - Highly conformal radiation therapy technique (3D-CRT/IMRT with IGRT). Hypofractionation- 20-28 fractions (with or without radiation to the seminal vesicles, regardless of patient age, comorbidity, anatomy, or urinary function²
 - Up to 45 fractions are medically necessary when pelvic nodes are treated. Gross or PSMA-positive lymph nodes are boosted to 55.2 Gy in 23 fractions
 - SBRT delivered at five fractions or less at 6.5 Gy per fraction or greater. Appropriate as a standalone radiation modality and NOT as a boost to other conventional methods of radiation treatment.
- Brachytherapy (LDR/HDR) boost combined with EBRT in 15-28 fractions

Adjuvant Post-Prostatectomy or Salvage Radiation Therapy

- External Beam Radiation Therapy
 - Highly conformal radiation therapy technique (3D-CRT/IMRT) Doses 64 – 72 Gy (up to 40 fractions) with IGRT
 - Brachytherapy (LDR or HDR)
- One of the following must be met:

- Detectable PSA or initially undetectable PSA, but with recent detectable and rising values on 2 or more measurements with no evidence of metastatic disease
- Positive margins
- Seminal vesicle invasion or extracapsular extension.
- Gleason 8-10
- Pathological T3 disease

TREATMENT OPTIONS (Will be reviewed on a case-by-case basis)

The radiation treatment options below will be reviewed on a case-by-case and may include deliberation on whether or not active surveillance and surgery have been considered prior to the decision to request radiation therapy:

- Brachytherapy alone (monotherapy) may be approved for Intermediate Recurrence Risk (Primary Tumor Stage [T] T2b-T2c or PSA 10-20 ng/ml or Gleason score 7) upon review. Brachytherapy alone is not considered appropriate if the patient has unfavorable or poor prognostic risk factors intermediate risk factors and is thus higher risk.
- EBRT/IMRT hypofractionation of 20-28 fractions are recommended to treat localized prostate cancer when pelvic nodes are not treated. Other treatment regimens require review and clinical documentation that supports medical necessity.

DOSAGE GUIDELINES

- Conventional Fractionation up to 45 fractions
- Moderate Hypofractionation (preferred, for all but low-volume M1, including N1):
 - 3 Gy x 20 fractions
 - 2.7 Gy x 26 fractions
 - 2.5 Gy x 28 fractions
- Ultra-Hypofractionation (for all but N1 and M1):
 - 9.5 Gy x 4 fractions
 - 7.25-8 Gy x 5 fractions
 - 6.1 Gy x 7 fractions
- **Low-volume metastatic disease (either non-regional lymph node-only disease OR <4 bone metastases and without visceral/other metastasis)¹**
 - Per STAMPEDE phase 3 randomized trial,⁶ 55 Gy in 20 fractions (i.e., 2.75 Gy x 20) or 6 Gy x 6 fractions can be used.
 - Number and location of lesions is defined by conventional imaging¹
 - At this time, metastases defined only by PET imaging should not be used to exclude a patient from treatment of the primary tumor¹
- **High-volume metastatic disease (Visceral met, 4 or more bone mets with at least one metastasis beyond the pelvis vertebral column):**
 - Based on HORRAD⁷ & STAMPEDE trials no RT to prostate would be medically necessary.

- **Palliative Radiation Therapy (e.g., pain, obstruction)**
 - 8 Gy x 1
 - 20 Gy in 5 fractions
 - 30 Gy in 10 fractions
 - 37.5 Gy in 15 fractions
 - Proton beam is not an approved treatment option for prostate cancer. Studies comparing proton beam therapy alone to 3-D conformal radiation or IMRT are limited. Overall, studies have not shown clinical outcomes to be superior to conventional radiation therapy.^{1,2,8-12}
-

BACKGROUND

Prostate cancer is diagnosed by biopsy and evaluated (staged) to determine extent of disease (local, regional, or distant metastatic). Both surgery and radiation therapy are used to treat prostate cancers that are organ-confined or extend into tissues adjacent to the prostate. Daily prostate localization can be accomplished with imaging modalities, e.g., ultrasound images, computed tomography (CT) images, or implanted fiducial markers, incorporated into an image guided radiation therapy (IGRT) system.

Patients with very low risk disease should be considered for active surveillance if their life expectancy is less than or equal to 20 years. Active surveillance is as well, recommended for patients with favorable intermediate-risk prostate cancer. Observation is the preferred action for men with low-risk prostate cancer with a life expectancy of less than 10 years. Patients with intermediate risk disease may be considered for short course (4-6 months) of neoadjuvant/concomitant/adjuvant ADT. Patients with high-risk disease may be considered for pelvic lymph node irradiation and 2-3 years of neoadjuvant/adjuvant ADT.

REFERENCES

1. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Prostate Cancer Version 1.2023. National Comprehensive Cancer Network (NCCN). Updated September 16, 2022. Accessed December 12, 2022. https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf
2. 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*. Nov-Dec 2018;8(6):354-360. doi:10.1016/j.prro.2018.08.002
3. Eastham JA, Auffenberg GB, Barocas DA et al. Clinically localized prostate cancer: AUA/ASTRO guideline part I: introduction, risk assessment, staging and risk-based management. *J Urol* 2022. <https://doi.org/10.1097/JU.0000000000002757>
4. Eastham JA, Auffenberg GB, Barocas DA et al. Clinically localized prostate cancer: AUA/ASTRO guideline part II: introduction, risk assessment, staging and risk-based management. <https://doi.org/10.1097/JU.0000000000002758>
5. Eastham JA, Auffenberg GB, Barocas DA et al. Clinically localized prostate cancer: AUA/ASTRO guideline part III: principles of radiation and future directions. *J Urol* 2022. <https://doi.org/10.1097/JU.0000000000002759>
6. Parker CC, James ND, Brawley CD, et al. Radiotherapy to the primary tumour for newly diagnosed, metastatic prostate cancer (STAMPEDE): a randomised controlled phase 3 trial. *Lancet*. Dec 1 2018;392(10162):2353-2366. doi:10.1016/s0140-6736(18)32486-3
7. Boevé LMS, Hulshof M, Vis AN, et al. Effect on Survival of Androgen Deprivation Therapy Alone Compared to Androgen Deprivation Therapy Combined with Concurrent Radiation Therapy to the Prostate in Patients with Primary Bone Metastatic Prostate Cancer in a Prospective Randomised Clinical Trial: Data from the HORRAD Trial. *Eur Urol*. Mar 2019;75(3):410-418. doi:10.1016/j.eururo.2018.09.008
8. Dutz A, Agolli L, Baumann M, et al. Early and late side effects, dosimetric parameters and quality of life after proton beam therapy and IMRT for prostate cancer: a matched-pair analysis. *Acta Oncol*. Jun 2019;58(6):916-925. doi:10.1080/0284186x.2019.1581373
9. Fang P, Mick R, Deville C, et al. A case-matched study of toxicity outcomes after proton therapy and intensity-modulated radiation therapy for prostate cancer. *Cancer*. Apr 1 2015;121(7):1118-27. doi:10.1002/cncr.29148
10. Santos PMG, Barsky AR, Hwang WT, et al. Comparative toxicity outcomes of proton-beam therapy versus intensity-modulated radiotherapy for prostate cancer in the postoperative setting. *Cancer*. Dec 1 2019;125(23):4278-4293. doi:10.1002/cncr.32457
11. American Society for Radiation Oncology. Astro Model Policies: Proton Beam Therapy. American Society for Radiation Oncology (ASTRO). Updated June 2017. Accessed December 12, 2022. https://www.astro.org/uploadedFiles/_MAIN_SITE/Daily_Practice/Reimbursement/Model_Policies/Content_Pieces/ASTROPBTModelPolicy.pdf
12. American Society for Radiation Oncology (ASTRO). Ten Things Physicians and Patients Should Question. Choosing Wisely Initiative ABIM Foundation. Updated July 28, 2022. Accessed December 12, 2022. <https://www.choosingwisely.org/societies/american-society-for-radiation-oncology/>

POLICY HISTORY

Date	Summary
May 2023	<ul style="list-style-type: none">• All the risk groups updated• Palliative Radiation Therapy moved down, with updated dosage guidelines• Deleted Additional Resources• Removed “physician review” language
January 2022	<ul style="list-style-type: none">• Changed “Radiation Therapy for Patients with Locally Advanced or Metastatic Prostate (T3b – T4, or any T and N1, disease)” to “Radiation Therapy for Patients with Locally Advanced or N1 Prostate (T3b – T4, or any T and N1, M0 disease)”• Added Palliative Radiotherapy<ul style="list-style-type: none">○ 30Gy/10FX or○ 37.5Gy/15FX• Added Dosage Guidelines section within Treatment Options Requiring Physician Review

Reviewed / Approved by NIA Clinical Guideline Committee

Disclaimer: *National Imaging Associates, Inc. (NIA) authorization policies do not constitute medical advice and are not intended to govern or otherwise influence the practice of medicine. These policies are not meant to supplant your normal procedures, evaluation, diagnosis, treatment and/or care plans for your patients. Your professional judgement must be exercised and followed in all respects with regard to the treatment and care of your patients. These policies apply to all Evolent Health LLC subsidiaries including, but not limited to, National Imaging Associates (“NIA”). The policies constitute only the reimbursement and coverage guidelines of NIA. Coverage for services varies for individual members in accordance with the terms and conditions of applicable Certificates of Coverage, Summary Plan Descriptions, or contracts with governing regulatory agencies. NIA reserves the right to review and update the guidelines at its sole discretion. Notice of such changes, if necessary, shall be provided in accordance with the terms and conditions of provider agreements and any applicable laws or regulations.*

