

## Evidence Based Guideline

# Prostate Cancer Treatment with Brachytherapy

**File Name:** prostate\_cancer\_treatment\_with\_brachytherapy  
**Guideline Number:** EBG.RAD5150  
**Origination:** 12/1997  
**Last CAP Review:** 9/2009  
**Next CAP Review:** 9/2011  
**Last Review:** 9/2009

### Description of Procedure or Service

---

Prostate cancer is the most common cancer seen in men and is the second most common cause of cancer deaths in men. The prostate gland is a part of the male reproductive system. It is located below the bladder and in front of the rectum and surrounds the urethra, the tube-like structure that carries urine from the bladder out through the penis.

Brachytherapy is a procedure in which a radioactive source is used to treat localized prostate cancer. With brachytherapy, the radiation penetrates only short distances; this procedure is intended to deliver tumoricidal radioactivity directly to the tumor and improve local control, while sparing surrounding normal tissue. Local tumor control has been reported to be associated with lower distant metastasis rates and improved patient survival. Seeds can be permanently or temporarily implanted. Permanent (low-dose rate, LDR) brachytherapy is generally used for those with low-risk disease; temporary (high-dose rate, HDR) brachytherapy is typically reserved for intermediate- or high-risk patients.

Perhaps the most familiar brachytherapy technique is the use of radioactive seeds permanently implanted into prostate tissue. These seeds contain isotopes that slowly emit radiation of relatively low energy. Studies of permanent brachytherapy have generally utilized either iodine-125 or palladium-103. Use of iodine-125 requires more seeds, and there is thus less dosimetric dependence on any single seed. In contrast, temporary prostate brachytherapy involves use of higher energy radioisotopes such as iridium-192. These isotopes deliver radiation at higher dose rates, which may be more effective in destroying rapidly dividing cancer cells. In this technique, needle catheters are placed into the prostate gland using transrectal ultrasound guidance. Once the needles are placed, a dosimetric plan is developed and the radioactive source inserted into each needle using an afterloading device. The radioactive source is left in the needle for a predetermined time, typically ranging from 8 to 12 minutes (called the “dwell” time). The radiation usually is delivered once or twice daily over a course of several days. The dwell time can be altered at various positions along the needle’s length to control dose distribution to the target volume and critical surrounding structures, such as the rectum or urethra. This strategy contrasts with permanent seed implantation in which dosimetry is calculated prior to needle placement and which cannot be altered after seed implantation. The treatment typically consists of 4,000 to 5,000 cGy delivered with external beam radiation therapy (EBRT) to the prostate and periprostatic tissues, while the high-dose rate brachytherapy (HDR BT) is used as the method of dose escalation to the prostate gland. The total boost doses are variable. In addition, studies are also being conducted using high-dose rate brachytherapy as the sole treatment modality (monotherapy) in those with prostate cancer.

It is an accepted premise that increasing doses of radiation therapy are associated with improved biochemical control (i.e., stable levels of prostate-specific antigen [PSA]), and thus there has been keen interest in exploring different techniques of dose escalation while simultaneously limiting both early and late toxicities in surrounding tissues. In patients with locally advanced disease, it is hypothesized that local failure may be related to the large volume of tumor and radioresistant cell clones, both of which might respond to higher

## Policy: Prostate Cancer Treatment with Brachytherapy

radiation doses. High-dose rate prostate brachytherapy has been primarily investigated as an adjunct to external-beam radiotherapy (EBRT) as a technique of dose escalation. Other techniques for dose escalation include EBRT using intensity-modulated radiation therapy (IMRT) for treatment planning and delivery, proton beam radiotherapy (which may also use IMRT), or EBRT combined with brachytherapy using interstitial seeds.

**\*\*\*Note: This Evidence Based Guideline is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

### Evidence Based Guideline for Brachytherapy for Prostate Cancer

---

- ◆ Brachytherapy using permanent transperineal implantation of radioactive seeds (low-dose rate brachytherapy) may be appropriate in the treatment of localized prostate cancer when used as monotherapy or in conjunction with external beam radiation therapy (EBRT).
- ◆ High-Dose Rate Temporary Brachytherapy may be appropriate in the treatment of localized prostate cancer when used as monotherapy or in conjunction with external beam radiation therapy (EBRT).

### Medical Evidence regarding Brachytherapy for Prostate Cancer indicates it is not recommended in the following situations:

---

- When the above criteria are not met.
- High-Dose Rate Temporary Brachytherapy is not recommended in the treatment of Prostate Cancer when used as salvage therapy.

### Benefits Application

---

Please refer to certificate for availability of benefit. This guideline relates only to the services or supplies described herein. Benefits may vary according to benefit design; therefore certificate language should be reviewed before applying the terms of the policy.

### Billing/Coding/Physician Documentation Information

---

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at [www.bcbsnc.com](http://www.bcbsnc.com). They are listed in the Category Search on the Medical Policy search page.

*Applicable codes: 55860, 55862, 55865, 55875, 76872, 76873, 76965, 77326, 77327, 77328, 77776, 77777, 77778, 77781, 77782, 77783, 77784, 77790, Q3001*

### Scientific Background and Reference Sources

---

**From Policy Entitled: Radioactive Seed Implantation for Prostate Cancer:**

BCBSA Technology Evaluation Criteria - 6/95

## **Policy: Prostate Cancer Treatment with Brachytherapy**

The Management of Localized Prostate Cancer, A Patient's Guide; The American Urological Association, Prostate Cancer Clinical Guidelines Panel, 1995.

BCBSA Medical Policy Reference Manual, issue date 12/1/95

Stokes SH, Real JD, Adams PW, Clements JC, Wuertzer S, Kan W. Transperineal ultrasound-guided radioactive seed implantation for organ-confined carcinoma of the prostate. *Int J Radiat Oncol Biol Phys*. 1997 Jan 15;37(2):337-41.

Consultant Review - 10/97

MEDLINE Search 1997.

Medical Policy Advisory Group - 12/99

Stone NN, Stock RG. Prostate brachytherapy: treatment strategies. *J Urol*. 1999 Aug;162(2):421-6.

Ragde H, Korb L. Brachytherapy for clinically localized prostate cancer. *Semin Surg Oncol*. 2000 Jan-Feb; 18(1):45/51.

Senior Medical Director Review - 2/2000

Medical Policy Advisory Group approved- 4/20/2000

Specialty Matched Consultant Advisory Panel - 6/2001

### **From Policy Entitled Prostate Cancer, High Dose Rate Temporary Brachytherapy:**

BCBSA Medical Policy Reference Manual; 4/30/00; 8.01.33

Specialty Matched Consultant Advisory Panel - 5/2001

### **New Policy Developed Entitled: Prostate Cancer Treatment with Brachytherapy:**

ECRI Windows on Medical Technology, May 1999

ECRI TARGET Fact Sheet, May 25, 1999

Specialty Matched Consultant Advisory Panel 11/2001

BCBSA Medical Policy Reference Manual, Policy 8.01.14; 12/18/02

BCBSA Medical Policy Reference Manual, Policy 8.01.33; 12/18/02

Specialty Matched Consultant Advisory Panel 5/2003

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.33, 7/15/04.

Specialty Matched Consultant Advisory Panel - 5/24/05

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.14, 5/14/09.

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.33, 6/27/05.

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.33, 7/20/06.

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.33, 8/2/07.

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.33, 5/14/09.

Specialty Matched Consultant Advisory Panel - 9/8/09.

## **Policy Implementation/Update Information**

---

### **From Policy Entitled: Radioactive Seed Implantation for Prostate Cancer:**

12/95 Reviewed: Investigational

## **Policy: Prostate Cancer Treatment with Brachytherapy**

- 12/97 Reviewed: Added additional information in Description section. Added indications eligible for coverage in Policy section; Therapy for localized (stages A/T1 or B/T2) prostate cancer with implantable radioactive seeds, without use of external beam radiation is considered equivalent to standard therapy and is eligible for coverage. Archived Policy 55859.SUR.
- 7/99 Reformatted, Description of Procedure or Service changed, Medical Term Definitions added.
- 12/99 Medical Policy Advisory Group
- 2/00 Removed language concerning external beam radiation. Code 55658 changed to 55859.
- 4/00 Added Medical Policy Advisory Group reference to Scientific Background and Reference Sources section of the policy.
- 4/01 System changes.
- 6/01 Format change. Specialty Matched Consultant Advisory Panel recommended to change statement under Policy Guidelines to say, "This procedure is performed by a urologist and radiation oncologist." No other changes recommended.

### **From Policy Entitled Prostate Cancer, High Dose Rate Temporary Brachytherapy:**

- 5/01 Original policy issued. Specialty Matched Consultant Advisory Panel approved.

### **New Policy Developed Entitled: Prostate Cancer Treatment with Brachytherapy:**

- 9/01 Combined Radioactive Seed Implantation for Prostate Cancer and Prostate Cancer, High Dose Rate Temporary Brachytherapy to form new policy entitled Prostate Cancer Treatment with Brachytherapy.
- 11/01 Specialty Matched Consultant Advisory Panel review of Prostate Cancer, High Dose Rate Temporary Brachytherapy. No changes. Format changes.
- 11/03 Specialty Matched Consultant Advisory Panel review (5/23/03). No changes to criteria. Benefits Application and Billing/Coding sections revised. Added codes G0256, G0261 and Q3001 to Billing/Coding section.
- 6/2/05 Specialty Matched Consultant Advisory Panel review 5/24/05. No changes to criteria. Description section reformatted. Header for "When Radioactive Seed Implantation is covered and when not covered" corrected to "When Brachytherapy for Prostate Cancer is covered and when not covered". Under "When covered", added "Treatment of..." to the beginning of the sentence. Deleted HCPCS codes G0256 and G0261 removed from Billing/Coding section and added CPT codes 77781, 77782, 77783, and 77784. Key words and medical terms added. Policy status changed to "Active policy, no longer scheduled for routine literature review."
- 1/17/07 CPT code 55875 effective January 1, 2007 added to Billing/Coding section. Removed deleted CPT code 55859. (pmo)
- 01/05/09 CPT codes 77785, 77786 and 77787 effective January 1, 2009 added to Billing/Coding section. Removed deleted CPT codes 77781, 77782, 77783 and 77784. (pmo)
- 12/7/09 Medical Policy changed to Evidence Based Guideline. Description section revised. Either brachytherapy using permanent transperineal implantation of radioactive seeds (low-dose rate brachytherapy) or high-dose rate temporary brachytherapy may be appropriate in the treatment of localized prostate cancer when used as monotherapy or in conjunction with external beam radiation therapy. High-dose rate temporary brachytherapy is not recommended in the treatment of prostate cancer when used as salvage therapy. Reference sources added. (pmo)

## **Policy: Prostate Cancer Treatment with Brachytherapy**

---

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.