Focal Treatments for Prostate Cancer

DISCLAIMER
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POLICY
Use of any focal therapy modality to treat patients with localized prostate cancer is investigational.

POLICY GUIDELINES
There is no specific CPT code for these treatments. It is likely they are reported with CPT code 55899 unlisted procedures, male genital system.

BENEFIT APPLICATION
BLUECARD/NATIONAL ACCOUNT ISSUES
State or federal mandates (e.g., Federal Employee Program) may dictate that certain U.S. Food and Drug Administration–approved devices, drugs, or biologics may not be considered investigational, and thus these devices may be assessed only by their medical necessity.

BACKGROUND

PROSTATE CANCER
Prostate cancer is the second most common cancer diagnosed among men in the United States. According to the National Cancer Institute (NCI), nearly 240,000 new cases were to be diagnosed in the United States in 2013 and would be associated with around 30,000 deaths. Autopsy studies in the pre prostate-specific antigen (PSA) screening era identified incidental cancerous foci in 30% of men 50 years of age, with incidence reaching 75% at age 80 years. However, NCI Surveillance Epidemiology and End Results data have shown age-adjusted cancer-specific mortality rates for men with prostate cancer declined from 40 per 100,000 in 1992 to 22 per 100,000 in 2010. This decline has been attributed to a combination of earlier detection via PSA screening and improved therapies.

Diagnosis
From a clinical standpoint, different types of localized prostate cancers may appear similar during initial diagnosis. However, the cancer often exhibits varying degrees of risk progression that may not be
captured by accepted clinical risk categories (e.g., D’Amico criteria) or prognostic tools based on clinical findings (e.g., PSA titers, Gleason grade, or tumor stage). In studies of conservative management, the risk of localized disease progression based on prostate cancer–specific survival rates at 10 years may range from 15% to 20% to perhaps 27% at 20-year follow-up. Among elderly men (≥70 years) with this type of low-risk disease, comorbidities typically supervene as a cause of death; these men will die from the comorbidities with prostate cancer present rather than from the cancer itself. Other very similar-appearing low-risk tumors may progress unexpectedly and rapidly, quickly disseminating and becoming incurable.

**Treatments**

The divergent behavior of localized prostate cancers creates uncertainty whether to treat immediately. A patient may choose definitive treatment upfront. Surgery (radical prostatectomy) or external-beam radiotherapy are frequently used to treat patients with localized prostate cancer. Complications most commonly reported with radical prostatectomy or external-beam radiotherapy and with the greatest variability are incontinence (0%-73%) and other genitourinary toxicities (irritative and obstructive symptoms); hematuria (typically ≤5%); gastrointestinal and bowel toxicity, including nausea and loose stools (25%-50%); proctopathy, including rectal pain and bleeding (10%-39%); and erectile dysfunction, including impotence (50%-90%).

American Urological Association guidelines have suggested patients with low- and intermediate-risk disease have the option of entering an “active surveillance” protocol, which takes into account patient age, patient preferences, and health conditions related to urinary, sexual, and bowel function. With this approach, patients forgo immediate therapy but continue regular monitoring until signs or symptoms of disease progression are evident—at which point curative treatment is instituted.

**Focal Treatments for Localized Prostate Cancer**

Given significant uncertainty in predicting the behavior of individual localized prostate cancers, and the substantial adverse events associated with definitive treatments, investigators have sought a therapeutic middle ground. The latter seeks to minimize morbidity associated with radical treatment in those who may not actually require surgery while reducing tumor burden to an extent that reduces the chances for rapid progression to incurability. This approach is termed focal treatment, in that it seeks to remove—using any of several ablative methods described next—cancerous lesions at high risk of progression, leaving behind uninvolved glandular parenchyma. The overall goal of any focal treatment is to minimize the risk of early tumor progression and preserve erectile, urinary, and rectal functions by reducing damage to the neurovascular bundles, external sphincter, bladder neck, and rectum. Although focal treatments are offered as an alternative middle approach to manage localized prostate cancer, several key issues must be considered in choosing it. They include patient selection, lesion selection, therapy monitoring, and modalities used to ablate lesions.

**Patient Selection**

A proportion of men with localized prostate cancer have been reported to have (or develop) serious misgivings and psychosocial problems in accepting active surveillance, sometimes leading to inappropriately discontinuing it. Thus, appropriate patient selection is imperative for physicians who must decide whether to recommend active surveillance or focal treatment for patients who refuse radical therapy or for whom it is not recommended due to the risk/benefit balance.

**Lesion Selection**

Proper lesion selection is a second key consideration in choosing a focal treatment for localized prostate cancer. Although prostate cancer is a multifocal disease, clinical evidence has shown that between 10%
and 40% of men who undergo radical prostatectomy for presumed multifocal disease actually have a unilaterally confined discrete lesion, which, when removed, would “cure” the patient. This view presumably has driven the use of regionally targeted focal treatment variants, such as hemiablation of half the gland containing the tumor, or subtotal prostate ablation via the “hockey stick” method. While these approaches can be curative, the more extensive the treatment, the more likely the functional adverse outcomes would approach those of radical treatments.

The concept that clinically indolent lesions comprise most of the tumor burden in organ-confined prostate cancer led to development of a lesion-targeted strategy, which is referred to as “focal therapy” in this evidence review. This involves treating only the largest and highest grade cancerous focus (referred to as the “index lesion”), which has been shown in pathologic studies to determine clinical progression of disease. This concept is supported by molecular genetics evidence that suggests a single index tumor focus is usually responsible for disease progression and metastasis. The index lesion approach leaves in place small foci less than 0.5 cm³ in volume, with a Gleason score less than 7, that are considered unlikely to progress over a 10- to 20-year period. This also leaves available subsequent definitive therapies as needed should disease progress.

Identification of prostate cancer lesions (disease localization) particularly the index lesion, is critical to the oncologic success of focal therapy; equally important to success is the ability to guide focal ablation energy to the tumor and assess treatment effectiveness. At present, no single modality reliably meets the requirements for all 3 activities (disease localization, focal ablation energy to the tumor, assessment of treatment effectiveness). Systematic transrectal ultrasound–guided biopsy alone has been investigated; however, it has been considered insufficient for patient selection or disease localization for focal therapy. A 5-mm transperineal prostate mapping (TPM) biopsy using a brachytherapy template has been the recommended standard by the European Association of Urology, according to its 2012 guidelines. TPM can provide 3-dimensional coordinates of cancerous lesions, and has 87% to 95% accuracy rates in detecting and ruling out clinically significant cancer of all sizes. However, TPM is resource-intensive, requires general anesthesia, and has been associated with adverse events (including urinary retention [6%], prostatitis [4%], and local events such as perineal hematoma, bruising, and pain [5%]). The risk of complications of general anesthesia and the cost of processing multiple biopsy specimens limits the practicality and widespread applicability of this approach. Multiparametric magnetic resonance imaging (mpMRI), typically including T1-, T2-, diffusion-weighted imaging, and dynamic contrast-enhanced imaging, has been recognized as a promising modality to risk-stratify prostate cancer and select patients and lesions for focal therapy. Evidence has shown mpMRI can detect high-grade, large prostate cancer foci with performance similar to TPM. For example, for the primary end point definition (lesion, ≥4 mm; Gleason score, ≥3+4), with TPM as the reference standard, sensitivity, negative predictive value, and negative likelihood ratios with mpMRI were 58% to 73%, 84% to 89%, and 0.3 to 0.5, respectively. Specificity, positive predictive value, and positive likelihood ratios were 71% to 84%, 49% to 63%, and 2.0 to 3.44, respectively. The negative predictive value of mpMRI appears sufficient to rule out clinically significant prostate cancer and may have clinical use in this setting. However, although mpMRI technology has the capability to detect and risk-stratify prostate cancer, several issues constrain its widespread use for these purposes (e.g., mpMRI requires highly specialized MRI-compatible equipment; biopsy within the MRI scanner is challenging; interpretation of prostate MRI images requires experienced uroradiologists) and it is still necessary to histologically confirm suspicious lesions using TPM.
Therapy Monitoring
Controversy exists about the proper end points for focal therapy of prostate cancer. The primary end point of focal ablation of clinically significant disease with negative biopsies evaluated at 12 months posttreatment is generally accepted according to a European consensus report. The clinical validity of MRI to analyze the presence of residual or recurrent cancer compared with histologic findings is offered as a secondary end point. However, MRI findings alone are not considered sufficient in follow-up. Finally, although investigators have indicated PSA levels should be monitored, PSA levels are not considered valid end points because the utility of PSA kinetics in tissue preservation treatments has not been established.

Modalities Used to Ablate Lesions
Five ablative methods for which clinical evidence is available are considered herein: focal laser ablation; high-intensity focused ultrasound; cryoablation; radiofrequency ablation; and photodynamic therapy. Each method requires placement of a needle probe into a tumor volume followed by delivery of some type of energy that destroys the tissue in a controlled manner. All methods except focal laser ablation currently rely on ultrasound guidance to the tumor focus of interest; focal laser ablation uses MRI to guide the probe. This evidence review does not cover focal brachytherapy (see evidence review 8.01.14).

Focal Laser Ablation
Focal laser ablation refers to the destruction of tissue using a focused beam of electromagnetic radiation emitted from a laser fiber introduced transperineal or transrectal into the cancer focus. Tissue is destroyed through thermal conversion of the focused electromagnetic energy into heat, causing coagulative necrosis. Other terms for focal laser ablation include photothermal therapy, laser interstitial therapy, and laser interstitial photoocoagulation.

High-Intensity Focused Ultrasound
High-intensity focused ultrasound focuses high-energy ultrasound waves on a single location, which increases the local tissue temperature to over 80°C. This causes a discrete locus of coagulative necrosis of approximately 3×3×10 mm. The surgeon uses a transrectal probe to plan, perform, and monitor treatment in a real-time sequence to ablate the entire gland or small discrete lesions.

Cryoablation
Cryoablation induces cell death through direct cellular toxicity from disruption of the cell membrane caused by ice-ball crystals and vascular compromise from thrombosis and ischemia secondary to freezing below -30°C. Using a TPM template, cryoablation is performed by transperineal insertion under transrectal ultrasound guidance of a varying number of cryoprobe needles into the tumor.

Radiofrequency Ablation
Radiofrequency ablation uses energy produced by a 50-watt generator at a frequency of 460 kHz. Energy is transmitted to the tumor focus through 15 needle electrodes inserted transperineally under ultrasound guidance. Radiofrequency ablation produces an increase in tissue temperature causing coagulative necrosis.

Photodynamic Therapy
Photodynamic therapy uses an intravenous photosensitizing agent, which distributes through prostate tissue, followed by light delivered transperineally by inserted needles. The light induces a photochemical reaction that produces reactive oxygen species that are highly toxic and causes functional and structural tissue damage (i.e., cell death). A major concern with photodynamic therapy is that real-time monitoring
of tissue effects is not possible, and the variable optical properties of prostate tissue complicate assessment of necrosis and treatment progress.

REGULATORY STATUS

Focal Laser Ablation
In 2010, the Visualase® Thermal Therapy System (Medtronic, Minneapolis, MN) and, in 2015, the TRANBERG\textsuperscript{CL} Laser fiber (Clinical Laserthermia Systems, Sweden) were cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process to necrotize or coagulate soft tissue through interstitial irradiation or thermal therapy under magnetic resonance imaging guidance for multiple indications including urology, at wavelengths from 800 to 1064 nm. FDA product code: LLZ, GEX, FRN.

High-Intensity Focused Ultrasound
In 2015, the Sonablate\textsuperscript{®} 450 (SonaCare Medical, Charlotte, NC) was approved by FDA through a de novo request and classified the device as class II under the generic name “high intensity ultrasound system for prostate tissue ablation”. This device was the first of its kind to be approved in the United States. A similar device, Ablatherm\textsuperscript{®} (EDAP TMS, France), was cleared for marketing by FDA through the 510(k) process shortly thereafter.

Cryoablation
Some cryoablation devices cleared for marketing by FDA through the 510(k) process for cryoablation of the prostate are: Visual-ICE\textsuperscript{®} (Galil Medical, St. Paul, MN), Ice Rod CX, CryoCare\textsuperscript{®} (Galil Medical), IceSphere (Galil Medical), and Cryocare\textsuperscript{®} Systems (Endocare\textsuperscript{®}; HealthTronics, Austin, TX). FDA product code: GEH.

Radiofrequency Ablation
Radiofrequency ablation devices have been cleared for marketing by FDA through the 510(k) process for general use for soft tissue cutting and coagulation and ablation by thermal coagulation. Under this general indication, radiofrequency ablation may be used to ablate tumors. FDA product code: GEI.

Photodynamic Therapy
FDA has granted approval to several photosensitizing drugs and light applicators. Photofrin\textsuperscript{®} (porfimer sodium) (Axcan Pharma) and psoralen are photosensitizer ultraviolet lamps used to treat cancer; they were cleared for marketing by FDA through the 510(k) process. FDA product code: FTC.

RATIONALE
This evidence review was created in April 2015 and has been updated regularly with searches of the MEDLINE database. The most recent literature update was performed through July 20, 2017.

Assessment of efficacy for therapeutic intervention involves a determination of whether the intervention improves health outcomes. The optimal study design for this purpose is a randomized controlled trial (RCT) that includes clinically relevant measures of health outcomes. Intermediate outcome measures, also known as surrogate outcome measures, may also be adequate if there is an established link between the intermediate outcome and true health outcomes. Nonrandomized comparative studies and uncontrolled studies can sometimes provide useful information on health outcomes, but are prone to biases such as non-comparability of treatment groups, placebo effect, and variable natural history of the condition.
No prospective, comparative studies were identified for any of the ablative technologies. The evidence comprises systematic reviews of non-comparative studies, case series, and other observational studies. This review only includes evidence on primary focal therapy for prostate cancer; it does not consider the recurrent or salvage setting.

FOCAL TREATMENTS OVERVIEW
A high-quality systematic review published by Valerio et al in 2014 compiled the bulk of the evidence available in the literature on the technologies included herein through 2012. This systematic review was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Only studies that reported actual focal therapy procedures were included. Specific categories of data to be collected were pre-specified. Study selection criteria were pre-specified, with dual review and data extraction, and senior author arbitration as needed. The quality of included studies was assessed using the Oxford Centre for Evidence-based Medicine level of evidence for therapy. This review and its summarized statistics serve as the initial evidence source for this evidence review. Additional prospective studies of a comparative nature are reviewed in subsequent sections below.

Twenty-five series were included that evaluated a number of methods used for focal therapy in the primary setting. The quality of evidence was low to medium, with no study yielding a level of evidence greater than 2b (individual cohort study). Twelve series used high-intensity focused ultrasound (n=226); 6 series (n=1400) used cryoablation (1 study included 1160 treated in the primary setting, 1400 total treated with cryoablation); 3 used focal laser ablation (n=16); 1 used radiofrequency ablation (n=14); and 1 used photodynamic therapy (n=6). In 2 series, focal treatments were mixed or included brachytherapy.

Patients in 12 series included had disease defined as low risk (n=1109 [56%]), intermediate risk (n=704 [36%]), and high risk (n=164 [8%]); risk categories were not available in 13 series. The median age of patients ranged from 56 to 73 years. The prostate-specific antigen (PSA) level of patients ranged from 3.8 to 24 ng/mL. Individual Gleason scores were available in 20 series, with 1503 men having Gleason scores less than 6; 521 with Gleason scores of 7; and 82 had Gleason scores higher than 8. The median follow-up for the series ranged from 0 to 10.6 years. The disease was localized as follows: transrectal ultrasound biopsy in 2 series; transrectal ultrasound biopsy with Doppler ultrasound in 2 series; transrectal ultrasound biopsy plus magnetic resonance imaging in 6 series; transperineal template-guided mapping biopsy and multiparametric magnetic resonance imaging in 4 series; preoperative assessment was not reported in 11 studies.

In all studies reporting such data in the Valerio systematic review, all known areas of cancer were treated; in no study was it explicitly stated that the index lesion was ablated and that other lesions were left untreated. Biochemical control based on PSA levels was reported in 5 series using the RTOG-ASTRO Phoenix Consensus Conference criteria. Other definitions used to define biochemical control were American Society for Radiation Oncology (ASTRO; 5 series), Stuttgart (1 series), and Phoenix plus PSA velocity greater than 0.75 ng/mL annually (1 series). Biochemical control rates ranged from 86% at 8-year follow-up (n=318) to 60% at 5-year follow-up (n=56). Because follow-up was too short, progression to metastatic disease was not reported for most studies in the Valerio review; in those reporting follow-up data, metastatic progression rates were very low (0%-0.3%). Although a cancer-specific survival rate of 100% was reported in all series, such rates must be considered in the context of the small numbers of patients in individual studies and the short follow-up (only 3 studies had follow-up >5 years).

Across all studies, median hospital length of stay was 1 day; other perioperative outcomes were poorly reported. Across studies, the most frequent complications associated with treatment of prostate
cancer—urinary retention, urinary stricture, and urinary tract infection—occurred in 0% to 17%, 0% to 5%, and 0% to 17%, respectively, of patients. Only 5 studies reported all 3 complications. Validated questionnaires were used in 9 series to report urinary functional outcomes; physician-reported rates were used in 5 studies. According to questionnaires, the pad-free continence rate varied between 95% and 100%, whereas the range of leak-free rates was 80% to 100%. Validated questionnaire data showed erectile functional rates in 54% to 100%, while physician-reported data showed erectile functional rates of 58% to 85%. Other adverse outcomes were poorly reported, particularly quality of life data, with only 3 studies reporting.

In 2015, Wolff et al reported on results of a systematic review of randomized controlled trials of radiotherapy vs other non-pharmacologic treatments, including high-intensity focused ultrasound and cryoablation for treatment of localized prostate cancer. The review followed Centre for Reviews and Dissemination and Cochrane guidelines for conduct and reporting. The selection criteria and outcomes of interest were pre-specified. The search included publications up to February 2014. Reviewers found 2 randomized controlled trials of cryotherapy vs radiotherapy, but both evaluated whole-gland instead of focal cryotherapy, and found no randomized controlled trials of high-intensity focused ultrasound vs radiotherapy.

**Section Summary: Focal Treatment Overview**

Systematic reviews have reported no published prospective, comparative evidence for focal ablation techniques vs current standard treatment of localized prostate cancer. The evidence consists of case series and non-comparative observational studies. Most studies were small with short follow-up. Data on clinical outcomes such as progression to metastatic disease were not reported for most studies included in the Valerio review. Perioperative outcomes and other adverse events were also poorly reported.

**Laser Ablation**

Additional case series and nonrandomized studies have assessed of focal laser ablation since the Valerio review. Studies were small (range, 8-25 men), single arm, lacked long-term follow-up (range, 3-6 months) and did not report clinical outcomes (e.g., progression-free survival, overall survival).

**Cryoablation**

The Cryo Online Data Registry is a database established and supported by a cryotherapy manufacturer. The data are maintained independently. Physicians submit standardized forms to the database and participation is voluntary. The registry contains case report forms of pretreatment and posttreatment information for patients undergoing whole-gland or partial-gland (focal) prostate cryoablation. Patients are stratified into low-, intermediate-, and high-risk groups. Ward and Jones have described characteristics of the focal cryotherapy registry patients in 2012. Biochemical success was defined using the ASTRO definitions. The analysis included 1160 patients treated with focal cryoablation and 5853 treated with whole-gland cryoablation between 1997 and 2007. Report of use of focal cryoablation increased dramatically between 1999 (46 reports) and 2005 (567 reports, p<0.01). The biochemical success at 36 months for focal cryotherapy was 75.7% and was similar to that of whole-gland cryoablation (75.5%); no significant differences between biochemical success for whole-gland and focal cryoablation were observed for low-, intermediate-, or high-risk groups (p value not given). Urinary continence was 98.4% in focal and 96.9% in whole-gland cryoablation.

A matched cohort study published in 2015 included 317 men who underwent focal cryoablation with 317 men who underwent whole-gland cryoablation. Patients were entered into the Cryo Online Data Registry between 2007 and 2013. The Median (standard definition) age at the time of the procedure
was 66 (7) years, and median follow-up was 58 months. All patients were preoperatively potent men who had low-risk disease according to the D'Amico risk criteria and were matched by age at surgery. Outcomes included biochemical recurrence-free survival (BRFS), defined using ASTRO and Phoenix criteria and assessed by Kaplan-Meier curves. Only patients with PSA nadir data were included in oncologic outcome analysis. Functional outcomes were assessed at 6, 12, and 24 months after the procedure for erectile function (defined as the ability to have intercourse with or without erectile aids), urinary continence, urinary retention, and rates of fistula formation. After surgery, 30% (n=95) and 17% (n=55) of the men who underwent whole-gland cryoablation and focal cryoablation, respectively, underwent biopsy, with positive biopsy rates of 12% and 14%, respectively. BRFS rates at 60 months using the Phoenix definition were 80% and 71% in the whole-gland and focal therapy cohorts, respectively, with a hazard ratio of 0.827 (p>0.1). Using the ASTRO definition, BRFS rates were 82% and 73%, respectively (p>0.1). Erectile function data at 24 months were available for 172 whole-gland and 160 focal therapy–treated men. Recovery of erectile function was achieved in 47% and 69% of patients in the whole-gland and focal therapy cohorts, respectively (p=0.001). Urinary function data at 24 months were available for 307 whole-gland and 313 focal therapy patients. Urinary continence rates were 99% and 100% for the whole-gland and focal therapy groups, respectively (p=0.02). Urinary retention rates at 6, 12, and 24 months were reported as 7%, 2%, and 0.6%, respectively, in the whole-gland treated patients vs 5%, 1%, and 0.9%, respectively, in the focal therapy cohort. One fistula was reported in each group.

In 2016, Lian et al reported on long-term results of a case series of 40 low- to intermediate-risk patients treated with primary focal cryoablation between 2006 and 2013 by a single urologist in China.\textsuperscript{50} Biochemical recurrence was defined using the Phoenix definition, and treatment failure was defined as at least 1 positive biopsy or biochemical recurrence. Mean follow-up was 63 months (range, 12-92 months). Two (5%) of 40 patients met the criteria for biochemical failure and 4 (10%) patients experienced treatment failure. Of the men who were potent before cryotherapy, 20 (77%) remained potent after treatment. Ninety-eight percent of the men were completely continent during follow-up.

**Section Summary: Cryoablation**

Data from the Cryo Online Data registry comparing focal with whole-gland cryoablation have suggested that BRFS is similar, although perhaps slightly lower in focal cryoablation compared with whole-gland cryoablation while erectile function preservation was higher.

**PHOTODYNAMIC THERAPY**

Preliminary results from a trial of TOOKAD, a soluble vascular-targeted photodynamic therapy (VTP), were presented in 2016 at the 31st Annual European Association of Urology Congress but have not yet been published. A total of 413 men with low-risk prostate cancer were randomized and followed for 2 years (206 in VTP plus active surveillance; 207 in active surveillance without VTP).\textsuperscript{61} It was reported that 28% of the patients in the VTP group and 58% of the control group experienced disease progression (hazard ratio, 0.34; 95% confidence interval, 0.24 to 0.46; p<0.001) and more patients in the VTP group (49%) and surveillance group (14%) had negative biopsies at 2 years.

Additional nonrandomized studies have assessed of photodynamic therapy since the Valerio review. A prospective, multicenter phase 2/3 trial by Tanjea et al (2016) treated 30 men using photodynamic therapy. Follow-up was limited to 6 months, and trialists did not report important clinical outcomes (e.g., progression-free survival, overall survival).\textsuperscript{62}
SUMMARY OF EVIDENCE
For individuals who have primary localized prostate cancer who receive focal therapy using laser ablation, high-intensity focused ultrasound, cryoablation, radiofrequency ablation, or photodynamic therapy, the evidence includes a high-quality systematic review, studies from a registry cohort, and numerous observational studies. Relevant outcomes are overall survival, disease-specific survival, symptoms, and change in disease status, functional outcomes, quality of life, and treatment-related morbidity. The evidence is highly heterogeneous and inconsistently reports clinical outcomes. No prospective, comparative evidence was found for focal ablation techniques vs current standard treatment of localized prostate cancer, including radical prostatectomy, external-beam radiotherapy, or active surveillance. Methods have not been standardized to determine which and how many identified cancerous lesions should be treated for best outcomes. No evidence supports which, if any, of the focal techniques leads to better functional outcomes. Although high disease-specific survival rates have been reported, the short follow-up periods and small sample sizes preclude conclusions on the effect of any of these techniques on overall survival rates. The adverse event rates associated with focal therapies appear to be superior to those associated with radical treatments (e.g., radical prostatectomy, external-beam radiotherapy); however, the evidence is limited in its quality, reporting, and scope. The evidence is insufficient to determine the effects of the technology on health outcomes.

SUPPLEMENTAL INFORMATION
PRACTICE GUIDELINES AND POSITION STATEMENTS
National Comprehensive Cancer Network
The National Comprehensive Cancer Network guidelines for prostate cancer (v.2.2017) recommend cryosurgery or high-intensity focused ultrasound (HIFU) as options for radiotherapy recurrence for non-metastatic disease; cryosurgery is not recommended for the initial treatment of localized prostate cancer. 63

National Institute for Health and Care Excellence
The National Institute for Health and Care Excellence (NICE) issued guidance on the use cryoablation for localized prostate cancer in 2012. 49 NICE concluded that current evidence on focal therapy using cryoablation for localized prostate cancer raised no major safety concerns. However, evidence on efficacy is limited in quantity, with concern that prostate cancer is commonly multifocal.

NICE also issued guidance on the use of focal therapy using HIFU for localized prostate cancer in 2012. 50 It concluded that current evidence on HIFU for localized prostate cancer raises no major safety concerns. However, evidence on efficacy was limited in quantity, with concern that prostate cancer is commonly multifocal.

In 2014, NICE issued guidance on diagnosis and management of prostate cancer. The recommendations stated that neither cryotherapy or HIFU should be offered to men with localized prostate cancer or locally advanced prostate cancer outside of controlled trials comparing their use with established interventions. 64

American Urological Association et al
The American Urological Association, along with the American Society for Radiation Oncology and the Society for Urologic Oncology, updated their joint guidelines on the management of clinically localized prostate cancer in 2017. 16 The guidelines included the following recommendation on focal treatments:
“Clinicians should inform low-risk prostate cancer patients who are considering focal therapy or high intensity focused ultrasound (HIFU) that these interventions are not standard care options because comparative outcome evidence is lacking. (Expert Opinion)"

“Clinicians should inform intermediate-risk prostate cancer patients who are considering focal therapy or HIFU that these interventions are not standard care options because comparative outcome evidence is lacking. (Expert Opinion)"

“Cryosurgery, focal therapy and HIFU treatments are not recommended for men with high-risk localized prostate cancer outside of a clinical trial. (Expert Opinion)”

National Cancer Institute
The National Cancer Institute (NCI) updated its information on prostate cancer treatments in 2016. NCI indicated that cryoablation and HIFU were new treatment options currently being studied in national trials. NCI offered no recommendation for or against these treatments.

U.S. PREVENTIVE SERVICES TASK FORCE RECOMMENDATIONS
The U.S. Preventive Services Task Force published recommendations for prostate cancer screening. However, there are no recommendations for focal treatment of prostate cancer.

MEDI CARE NATIONAL COVERAGE
There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

ONGOING AND UNPUBLISHED CLINICAL TRIALS
Some currently unpublished trials that might influence this policy are listed in Table 1.

Table 1. Summary of Key Trials

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<td>NCT02016040</td>
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<td>NCT01310894</td>
<td>A European Randomized Phase 3 Study to Assess the Efficacy and Safety of TOOKAD ® Soluble for Localized Prostate Cancer Compared to Active Surveillance</td>
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NCT: national clinical trial.

REFERENCES


25. Passoni NM, Polascik TJ. How to select the right patients for focal therapy of prostate cancer? *Curr Opin Urol.* May 2014;24(3):203-208. PMID 24625428


**CODES**

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**POLICY HISTORY**

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<td>New Policy – Add to Therapy</td>
<td>Policy created with literature review through March 3, 2015. Use of any focal therapy modality is considered investigational for treatment of prostate cancer</td>
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<td>09/08/16</td>
<td>Policy update</td>
<td>Policy updated with literature review through July 26, 2016; references 55-57 and 59-63 were added. Policy statement unchanged.</td>
</tr>
<tr>
<td>06/19/17</td>
<td>Coding update only</td>
<td>Added HCPCS C9747 to policy.</td>
</tr>
<tr>
<td>09/28/17</td>
<td>Replace policy</td>
<td>Blue Cross of Idaho adopted changes to policy as noted. Policy updated with literature review through July 20, 2017; reference 16 added. Policy statement unchanged.</td>
</tr>
</tbody>
</table>