Australian Government

Department of Health

Application Form

(New and Amended

Requests for Public Funding)

(Version 2.4)

This application form is to be completed for new and amended requests for public funding (including but not limited to the Medicare Benefits Schedule (MBS)). It describes the detailed information that the Australian Government Department of Health requires in order to determine whether a proposed medical service is suitable.

Please use this template, along with the associated Application Form Guidelines to prepare your application. Please complete all questions that are applicable to the proposed service, providing relevant information only. Applications not completed in full will not be accepted.

Should you require any further assistance, departmental staff are available through the Health Technology Assessment Team (HTA Team) on the contact numbers and email below to discuss the application form, or any other component of the Medical Services Advisory Committee process.

Phone: +61 2 6289 7550
Fax: +61 2 6289 5540
Email: hta@health.gov.au
Website: www.msac.gov.au

PART 1 – APPLICANT DETAILS

1. Applicant details (primary and alternative contacts)

Corporation / partnership details (where relevant): Insert corporation/partnership details here if relevant
Corporation name: REDACTED
ABN: REDACTED
Business trading name: REDACTED

Primary contact name: REDACTED

Primary contact numbers
Business: REDACTED
Mobile: REDACTED
Email: REDACTED

Alternative contact name: REDACTED

Alternative contact numbers
Business: REDACTED
Mobile: REDACTED
Email: REDACTED

2. (a) Are you a lobbyist acting on behalf of an Applicant?

REDACTED

(b) If yes, are you listed on the Register of Lobbyists?

REDACTED

PART 2 – INFORMATION ABOUT THE PROPOSED MEDICAL SERVICE

3. Application title

Low dose rate (LDR) brachytherapy for intermediate and high-risk prostate cancer

4. Provide a succinct description of the medical condition relevant to the proposed service (no more than 150 words – further information will be requested at Part F of the Application Form)

Cancer of the prostate gland that is classified as intermediate or high-risk. Intermediate risk prostate cancer is defined as having a Prostate Specific Antigen (PSA) measurement of 10-20 nanograms per millilitre of blood (ng/ml) and/or a Gleason score of 7 and/or a tumour classified as T2b-c. High-risk prostate cancer is classified as having a PSA of greater than 20 and/or a Gleason score of 8-10 and/or a tumour classified as T3 OR 2 or more intermediate risk features.

5. Provide a succinct description of the proposed medical service (no more than 150 words – further information will be requested at Part 6 of the Application Form)

LDR Brachytherapy is the insertion of tiny radioactive capsules or 'seeds' into the prostate gland. Generally, 80-120 seeds will be implanted. The radiation from the seeds targets the tumour and destroys the cancerous cells. The seeds are inserted via a hollow needle through the perineum. The procedure is guided by transrectal ultrasound.

6. (a) Is this a request for MBS funding?

☒ Yes
☐ No

(b) If yes, is the medical service(s) proposed to be covered under an existing MBS item number(s) or is a new MBS item(s) being sought altogether?

☒ Amendment to existing MBS item(s)
☐ New MBS item(s)

15538

PROSTATE, radioactive seed implantation of, radiation oncology component, using transrectal ultrasound guidance, for localised prostatic malignancy at clinical stages T1 (clinically inapparent tumour not palpable or visible by imaging) or T2 (tumour confined within prostate), with a Gleason score of less than or equal to 7 and a prostate specific antigen (PSA) of less than or equal to 10ng/ml at the time of diagnosis. The procedure must be performed at an approved site in association with a urologist

Fee: $935.60 **Benefit**: 75% = $701.70 85% = $855.40

If an amendment to an existing item(s) is being sought, please list the relevant MBS item number(s) that are to be amended to include the proposed medical service:

37220

PROSTATE, radioactive seed implantation of, urological component, using transrectal ultrasound guidance, for localised prostatic malignancy at clinical stages T1 (clinically inapparent tumour not palpable or visible by imaging) or T2 (tumour confined within prostate), with a Gleason score of less than or equal to 7 and a prostate specific antigen (PSA) of less than or equal to 10ng/ml at the time of diagnosis. The procedure must be performed by a urologist at an approved site in association with a radiation oncologist, and be associated with a service to which item 55603 applies (Anaes.)

Fee: $1,044.20 **Benefit:** 75% = $783.15

(c) If an amendment to an existing item(s) is being sought, what is the nature of the amendment(s)?

i. ☐ An amendment to the way the service is clinically delivered under the existing item(s)
ii. ☒ An amendment to the patient population under the existing item(s)
iii. ☐ An amendment to the schedule fee of the existing item(s)
iv. ☐ An amendment to the time and complexity of an existing item(s)
v. ☐ Access to an existing item(s) by a different health practitioner group
vi. ☐ Minor amendments to the item descriptor that does not affect how the service is delivered
vii. ☐ An amendment to an existing specific single consultation item
viii. ☐ An amendment to an existing global consultation item(s)
ix. ☐ Other (please describe below):

Insert description of 'other' amendment here

(d) If a new item(s) is being requested, what is the nature of the change to the MBS being sought?

i. ☐ A new item which also seeks to allow access to the MBS for a specific health practitioner group
ii. ☐ A new item that is proposing a way of clinically delivering a service that is new to the MBS (in terms of new technology and / or population)
iii. ☐ A new item for a specific single consultation item
iv. ☐ A new item for a global consultation item(s)

(e) Is the proposed service seeking public funding other than the MBS?

☐ Yes
☒ No

(f) If yes, please advise:

Insert description of other public funding mechanism here

7. What is the type of service:

☒ Therapeutic medical service
☐ Investigative medical service
☐ Single consultation medical service
☐ Global consultation medical service
☐ Allied health service
☐ Co-dependent technology
☐ Hybrid health technology

8. For investigative services, advise the specific purpose of performing the service *(which could be one or more of the following)*:

i. ☐ To be used as a screening tool in asymptomatic populations
ii. ☐ Assists in establishing a diagnosis in symptomatic patients
iii. ☐ Provides information about prognosis
iv. ☐ Identifies a patient as suitable for therapy by predicting a variation in the effect of the therapy
v. ☐ Monitors a patient over time to assess treatment response and guide subsequent treatment decisions

9. Does your service rely on another medical product to achieve or to enhance its intended effect?

☐ Pharmaceutical / Biological
☒ Prosthesis or device
☐ No

10. (a) If the proposed service has a pharmaceutical component to it, is it already covered under an existing Pharmaceutical Benefits Scheme (PBS) listing?

☐ Yes
☐ No

(b) If yes, please list the relevant PBS item code(s):

Not applicable

(c) If no, is an application (submission) in the process of being considered by the Pharmaceutical Benefits Advisory Committee (PBAC)?

☐ Yes (please provide PBAC submission item number below)
☐ No

Not applicable

(d) If you are seeking both MBS and PBS listing, what is the trade name and generic name of the pharmaceutical?

Trade name: Not applicable
Generic name: Not applicable

11. (a) If the proposed service is dependent on the use of a prosthesis, is it already included on the Prostheses List?

☒ Yes
☐ No

(b) If yes, please provide the following information (where relevant):

Billing code(s): RQ078
Trade name of prostheses: BXTAccelyon Prescription Loaded A-Strand with A-Seed AgAX100 1-125 Seeds
Clinical name of prostheses: Pre-loaded A-Strand I-125 seeds and spacers
Other device components delivered as part of the service: Not applicable

Billing code(s): RQ077
Trade name of prostheses: BXTAccelyon A-Seed AgX100 I-125 Seeds
Clinical name of prostheses: Pre-loaded A-Strand I-125 seeds
Other device components delivered as part of the service: Not applicable

Billing code(s): RQ079
Trade name of prosthesis: BXTAccelyon I-seed AgX100 I-125 seeds
Clinical name of prosthesis: Pre-loaded VSM20 cartridge I-125 seeds
Other device components delivered as part of the service: Nor applicable

Billing code(s): RQ076
Trade name of prosthesis: BXTAccelyon I-seed AgX100 I-125 seeds
Clinical name of prosthesis: Pre-loaded C20 Isoloader magazine I-125 seeds
Other device components delivered as part of the service: Nor applicable

(c) If no, is an application in the process of being considered by a Clinical Advisory Group or the Prostheses List Advisory Committee (PLAC)?

☐ Yes
☒ No

(d) Are there any other sponsor(s) and / or manufacturer(s) that have a similar prosthesis or device component in the Australian market place which this application is relevant to?

☒ Yes
☐ No

(e) If yes, please provide the name(s) of the sponsor(s) and / or manufacturer(s):

AlphaXRT Pty Ltd

Bard Australia Pty Ltd

Nucletron Pty Ltd

12. Please identify any single and / or multi-use consumables delivered as part of the service?

Single use consumables: Catheter, condom placed over the ultrasound probe, tape and ultrasound jelly, brachytherapy grid
Multi-use consumables: none

PART 3 – INFORMATION ABOUT REGULATORY REQUIREMENTS

13. (a) If the proposed medical service involves the use of a medical device, in-vitro diagnostic test, pharmaceutical product, radioactive tracer or any other type of therapeutic good, please provide the following details:

Cartridge Loaded I-Seed AgX100 I125 implants

Type of therapeutic good: Medical Device
Manufacturer's name: Theragenics Corporation
Sponsor's name: RQSolutions Medical Devices Distribution Support

VSM loaded I-Seed AgXI125 implants

Type of therapeutic good: Medical Device
Manufacturer's name: Theragenics Corporation
Sponsor's name: RQSolutions Medical Devices Distribution Support

TheraStrand RX with I-Seed AgX100 I125 implants

Type of therapeutic good: Medical Device
Manufacturer's name: Theragenics Corporation
Sponsor's name: Emergo Asia pacific Pty Ltd T/z Emergo Australia

(b) Is the medical device classified by the TGA as either a Class III or Active Implantable Medical Device (AIMD) against the TGA regulatory scheme for devices?

☐ Class III
☒ AIMD
☐ N/A

14. (a) Is the therapeutic good to be used in the service exempt from the regulatory requirements of the *Therapeutic Goods Act 1989*?

☐ Yes (If yes, please provide supporting documentation as an attachment to this application form)
☒ No

(b) If no, has it been listed or registered or included in the Australian Register of Therapeutic Goods (ARTG) by the Therapeutic Goods Administration (TGA)?

☐ Yes (if yes, please provide details below)
☒ No

ARTG listing, registration or inclusion number: 271520, 205023, 205063
TGA approved indication(s), if applicable:
TGA approved purpose(s), if applicable: Intended to treat localized, unresectable tumours with low to moderate radiosensitivity. Tumours may be recurrent or residual following external beam or excision of primary tumour.

15. If the therapeutic good has not been listed, registered or included in the ARTG, is the therapeutic good in the process of being considered for inclusion by the TGA?

☐ Yes (please provide details below)
☒ No

Date of submission to TGA: Not applicable
Estimated date by which TGA approval can be expected: Not applicable

TGA Application ID: Not applicable
TGA approved indication(s), if applicable: Not applicable
TGA approved purpose(s), if applicable: Not applicable

16. If the therapeutic good is not in the process of being considered for listing, registration or inclusion by the TGA, is an application to the TGA being prepared?

☐ Yes (please provide details below)
☒ No

Estimated date of submission to TGA: Not applicable
Proposed indication(s), if applicable: Not applicable
Proposed purpose(s), if applicable: Not applicable

PART 4 – SUMMARY OF EVIDENCE

17. **Provide an overview of all key journal articles or research published in the public domain related to the proposed service that is for your application (limiting these to the English language only).** ***Please do not attach full text articles, this is just intended to be a summary.***

	Type of study design*	Title of journal article or research project (including any trial identifier or study lead if relevant)	Short description of research (max 50 words)**	Website link to journal article or research (if available)	Date of publication***
1.	**Multi-Centre Randomised Trial**	**Morris WJ et al *'Androgen Suppression Combined with Elective Nodal and Dose Escalated Radiation Therapy (the ASCENDE-RT Trial): An Analysis of Survival Endpoints for a Randomized Trial Comparing a Low-Dose-Rate Brachytherapy Boost to a Dose-Escalated External Beam Boost for High- and Intermediate -risk Prostate Cancer'* Int J Radiation Oncol Biol Phys. Vol 98, No. 2 pp. 275-285, 2017**	**Comparison between a dose-escalated external beam radiotherapy boost and LDR Brachytherapy boost in intermediate to high risk prostate cancer. Primary endpoint was biochemical progression free survival. Secondary endpoints included overall survival, metastasis free survival and prostate cancer specific survival**	**http://www.redjournal.org/article/S0360-3016(16)33484-8/fulltext**	**June 1 2017**

	Type of study design*	Title of journal article or research project (including any trial identifier or study lead if relevant)	Short description of research (max 50 words)**	Website link to journal article or research (if available)	Date of publication***
2.	**Multi-Centre Randomised Trial**	**Rodda S et al *'ASCENDE-RT: An Analysis of Treatment-Related Morbidity for a Randomized Trial Comparing a Low-Dose-Rate Brachytherapy Boost with a Dose-Escalated External Beam Boost for High- and Intermediate-Risk Prostate Cancer'* Int J Radiation Oncol Biol Phys. Vol 98, No. 2 pp. 286-295, 2017**	**Comparison between a dose-escalated external beam radiotherapy boost and LDR Brachytherapy boost in intermediate to high risk prostate cancer. An analysis of genitourinary and gastrointestinal morbidity and erectile dysfunction.**	**http://www.redjournal.org/article/S0360-3016(17)30008-1/pdf**	**June 2017**
3.	**Multi-Centre Randomised Trial**	**Rodda S et al *'An Analysis of Health-Related Quality of Life for a Randomized Trial Comparing Low-Dose-Rate Brachytherapy Boost With Dose-Escalated External Beam Boost for High- and Intermediate-Risk Prostate Cancer'* In J Radiation Oncol Biol Phys, Vol. 98, No.3 581-589, 2017**	**Comparison between dose-escalated external beam radiotherapy boost and LDR Brachytherapy boost in intermediate to high risk prostate cancer. An analysis of health related QOL as measured by the SF36 v 2 questionnaire with additional scales for urinary, bowel and sexual function**	**http://www.redjournal.org/article/S0360-3016(17)30405-4/fulltext**	**July 1, 2017**

	Type of study design*	Title of journal article or research project (including any trial identifier or study lead if relevant)	Short description of research (max 50 words)**	Website link to journal article or research (if available)	Date of publication***
4.	**Population Database Analysis**	**Johnson SB et al *'Brachytherapy Boost Utilization and Survival in Unfavourable -risk Prostate Cancer'* EURURO -7442, 2017**	**Patients were identified from the National Cancer Data Base with unfavourable risk prostate cancer who were treated with EBRT followed by LDR Brachytherapy or DE-EBRT were identified and overall survival measured**	**http://www.europeanurology.com/article/S0302-2838(17)30515-8/pdf**	**June 2017**
5.	**Registry**	**Kittel JA et al *'Long-Term Efficacy and Toxicity of Low-Dose-Rate ^{125}I Prostate Brachytherapy as Monotherapy in Low-, Intermediate-, and High-Risk Prostate Cancer'* Int J Radiation Oncol Biol Phys, Vol. 92, no4, pp.884-893, 2015**	**Patients of variable risk profiles were treated with LDR Brachytherapy and followed prospectively in a registry. Biochemical relapse free survival, distant metastasis-free survival and prostate cancer specific mortality were calculated**	**http://www.redjournal.org/article/S0360-3016(15)00253-9/fulltext**	**July 15, 2015**

	Type of study design*	Title of journal article or research project (including any trial identifier or study lead if relevant)	Short description of research (max 50 words)**	Website link to journal article or research (if available)	Date of publication***
6.	**Population Database Analysis**	**Xiang M et al *'Significant association of brachytherapy boost with reduced prostate cancer-specific mortality in contemporary patients with localized, unfavourable-risk prostate cancer'* Brachytherapy 14 (2015) 773-780**	**Analysis of patients in Surveillance, Epidemiology and End Results (SEER) database diagnosed with intermediate- or high-risk prostate cancer treated with EBRT only or EBRT + BT.**	**https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4833213/**	**November 2015**

** Categorise study design, for example meta-analysis, randomised trials, non-randomised trial or observational study, study of diagnostic accuracy, etc.*

***Provide high level information including population numbers and whether patients are being recruited or in post-recruitment, including providing the trial registration number to allow for tracking purposes.*

**** If the publication is a follow-up to an initial publication, please advise.*

18. **Identify yet to be published research that may have results available in the near future that could be relevant in the consideration of your application by MSAC (limiting these to the English language only). *Please do not attach full text articles, this is just intended to be a summary.***

Not Applicable

** Categorise study design, for example meta-analysis, randomised trials, non-randomised trial or observational study, study of diagnostic accuracy, etc.*

***Provide high level information including population numbers and whether patients are being recruited or in post-recruitment.*

****Date of when results will be made available (to the best of your knowledge).*

PART 5 – CLINICAL ENDORSEMENT AND CONSUMER INFORMATION

19. **List all appropriate professional bodies / organisations representing the group(s) of health professionals who provide the service (please attach a statement of clinical relevance from each group nominated):**

    Urological Society of Australia and New Zealand

    Royal Australian and New Zealand College of Radiologists

    Australasian Brachytherapy Group

20. **List any professional bodies / organisations that may be impacted by this medical service (i.e. those who provide the comparator service):**

    Not applicable

21. **List the relevant consumer organisations relevant to the proposed medical service (please attach a letter of support for each consumer organisation nominated):**

    Prostate Cancer Foundation of Australia is the only group that was identified. They are a charitable organisation and are not representative of consumers

22. **List the relevant sponsor(s) and / or manufacturer(s) who produce similar products relevant to the proposed medical service:**

    AlphaXRT Pty Ltd

    Bard Australia Pty Ltd

    Nucletron Pty Ltd

23. **Nominate two experts who could be approached about the proposed medical service and the current clinical management of the service(s):**

    Name of expert 1: REDACTED

    Telephone number(s): REDACTED

    Email address: REDACTED

    Justification of expertise: REDACTED

    Name of expert 2: REDACTED

    Telephone number(s): REDACTED

    Email address: REDACTED

    Justification of expertise: REDACTED

PART 6 – POPULATION (AND PRIOR TESTS), INDICATION, COMPARATOR, OUTCOME (PICO)

PART 6a – INFORMATION ABOUT THE PROPOSED POPULATION

24. Define the medical condition, including providing information on the natural history of the condition and a high level summary of associated burden of disease in terms of both morbidity and mortality:

Cancer of the prostate gland is the most frequently diagnosed cancer among men in developed countries. In Australia it is estimated that between 185,000-200,000 men will be living with the disease in 2017[1]. The Australian Institute of Health and Welfare (AIHW) estimates that approximately 25,000 new cases will be diagnosed each year by 2020[2]. Prostate cancer is the fourth most common cause of death among males in Australia and is strongly age related. There is a 90% survival rate at 5 years for men diagnosed with prostate cancer and 10-year survival is calculated at 84%.

While the survival rate is high compared to other common cancers in men, the various interventions for the treatment of prostate cancer give rise to a variety of morbidities including stress urinary incontinence or leakage, erectile dysfunction, loss of libido or bowel dysfunction. The patterns of morbidity vary depending on the type of intervention.

Prostate cancer may be asymptomatic for long periods and initial symptoms may include urinary dysfunction, frequency and/or incontinence. Initial screening may be conducted by a Prostate Specific Antigen (PSA) test or a digital rectal examination (DRE) however a definitive diagnosis can only be confirmed by biopsy. Once a biopsy is completed the tumour can be categorised and staged.

Prostate cancer can be categorised by risk. This is a combination of tumour grade ('Gleason Score'), the PSA score and a tumour stage.

A Gleason score is the sum of two scores ranged 1-5. Grade 1 denotes cancer cells that are very similar to normal cells whereas as Grade 5 denotes cells that are very abnormal. The Gleason Score is the sum of the grade of the most predominant tumour cells and the secondary tumour grade. Gleason Scores range from 2-10, with higher scores indicating a more aggressive cancer.

This application is concerned with intermediate and high-risk prostate cancer and uses the National Comprehensive Cancer Network (NCCN) Prostate Cancer Risk Group definitions.

Intermediate Risk: PSA > 10.0 < 20.0 and/or Gleason = 7 and/or T2b-c

T2b is a tumour confined to more than one half of one lobe of the prostate gland but not both.

T2c is a tumour that is in both lobes but within the prostatic capsule

High Risk: PSA> 20.0 and/or Gleason 8-10 and/or T3a OR 2 or more intermediate risk features

T3a is a tumour that extends outside of the prostate but not into the seminal vessels.

25. Specify any characteristics of patients with the medical condition, or suspected of, who are proposed to be eligible for the proposed medical service, including any details of how a patient would be investigated, managed and referred within the Australian health care system in the lead up to being considered eligible for the service:[3]

As noted above the patients who would be considered eligible for LDR Brachytherapy are classified as having low risk, intermediate or high-risk prostate cancer. Prostate cancer incidence increases with age. The 2013 Australian Institute of Health and Welfare (AIHW) reports that risk is less than 0.1% before the age of 45 but

[1] Xue et al *Prostate cancer prevalence in New South Wales Australia: A population-based study'* Cancer Epidemiology 39 (2015) 29-36

[2] AIHW *'Prostate Cancer in Australia'* 2013. https://www.aihw.gov.au/reports/cancer/prostate-cancer-in-australia/contents/table-of-contents

increases to 27% before age 85. The diagnosis of new cases peaks in the 60-69 age group and declines thereafter. Therefore, men seeking treatment for prostate cancer will most commonly be in this age group.

Population screening for prostate cancer is controversial due to the risk of over diagnosis and over treatment. The European Association of Urology (EAU), European Society for Radiotherapy and Oncology (ESTRO) and the International Society of Geriatric Oncology (SIOG) Guidelines[4] recommend that PSA testing should be offered to men with an elevated risk of having prostate cancer. These include the following

- Men aged > 50 years
- Men aged > 45 years and a family history of Prostate Cancer
- African American men aged > 45 years
- Men with a PSA level > 1 ng/ml at age 40 years
- Men with a PSA level > 2 ng/ml at age 60 years

Men who have less than 15 years of life expectancy are unlikely to benefit from early detection.

Early screening and detection of prostate cancer in Australia is generally carried out by general practitioners. Early screening and detection is either by a PSA test or a digital rectal exam (DRE). A high PSA or an abnormal DRE is likely to prompt a biopsy. Some men may be offered a Free/Total PSA Ratio or a Prostate Health Index test, or a PCA3 test before proceeding to biopsy, particularly if the PSA is only mildly elevated. These tests are not currently included on the MBS.

A needle biopsy guided by ultrasound is the most common method of biopsy. If prostate cancer is identified the tumour will be staged and graded and the risk stratification assigned. Men will be referred to either a urologist or multidisciplinary team to manage treatment.

There are a variety of treatment modalities available to treat prostate cancer. These include Androgen Deprivation Therapy (ADT), Radical Prostatectomy (RP), External Beam Radiotherapy (EBRT), Low Dose Rate (LDR) Brachytherapy and High Dose Rate (HDR) Brachytherapy. Two or more of these modalities may be combined in higher risk disease.

26. Define and summarise the current clinical management pathway *before* patients would be eligible for the proposed medical service (supplement this summary with an easy to follow flowchart [as an attachment to the Application Form] depicting the current clinical management pathway up to this point):

Please see the attached document: 'Clinical Pathway Flowchart'

In Australia men are most likely to receive an initial screening for prostate cancer from a general practitioner (GP). This may occur because they are included in a higher risk group or they present with the symptoms noted in Question 24. As noted above some men may be offered other tests including Free/Total PSA, Prostate Health Index or a PCA3 if the PSA is only mildly elevated as this may assist the GP in determining whether a biopsy is necessary

A biopsy is the definitive diagnostic test for prostate cancer. Tissue samples are removed via an ultrasound guided needle and the cancer is staged and graded by a pathologist. It is possible that other tests may be conducted to rule out metastatic disease. These may include CT scans or whole-body bone scans. Risk category is assigned based on PSA level, Gleason Score and tumour stage and grade. This application concerns Intermediate and high-risk patients. LDR Brachytherapy for patients with a Gleason Score of ≤ 7 and a PSA of ≤ 10 is currently included on the MBS.

ADT is a standard treatment for high-risk prostate cancer[5] and will be offered to most men. ADT is delivered before beginning radiotherapy as it may assist in either shrinking the tumour or preventing the tumour from growing further.

Men may be offered RP with or without EBRT or EBRT. This decision may be very dependent upon individual preference and the patient's tolerance for the impact of the treatment related side-effects on their quality of

[4] Mottet et al *'EAU-ESTRO-SIOG Guidelines on Prostate Cancer. Part 1: Screening, Diagnosis, and Local Treatment with Curative Intent'* European Urology 71 (2017) 618-629

[5] https://www.andrologyaustralia.org/wp-content/uploads/Factsheet_ProstateCancerTreatment.pdf

life. Treatment decisions will also relate to the age and general health of the patient. As RP is a major surgical procedure with an operating time of 2 to 5 hours it may not be an appropriate choice for older men or men with comorbidities.

EBRT may be delivered in addition to RP or as the primary therapy. EBRT may be delivered via conventional radiotherapy, intensity-modulated radiation therapy (IMRT) or three-dimensional conformal radiotherapy (3D-CRT). EBRT may be given as a stand-alone therapy or an additional dose or 'boost' of radiation may be delivered by a dose escalation of EBRT (DE-EBRT), HDR brachytherapy or LDR brachytherapy. RT 6b – INFORMATION ABOUT THE INTERVENTION

27. Describe the key components and clinical steps involved in delivering the proposed medical service:

Pre-treatment

1. A patient will have a consultation with both a urologist and radiation oncologist
2. A volume study of the prostate and a urine flow study will be carried out to determine suitability for LDR Brachytherapy.
3. A radiation physicist will then plan the treatment allowing the seeds to be ordered.

Treatment

1. Patient is admitted as a day only or overnight patient at a hospital that has a radiation license.
2. The patient is placed under general anaesthetic and the seeds are inserted via a series of fine needles that contain the brachytherapy seeds

Post-Treatment

The patient will have a CT scan to ensure that the seeds are implanted correctly

28. Does the proposed medical service include a registered trademark component with characteristics that distinguishes it from other similar health components?

No

29. If the proposed medical service has a prosthesis or device component to it, does it involve a new approach towards managing a particular sub-group of the population with the specific medical condition?

LDR Brachytherapy has been included on the MBS for the treatment of lower risk profile prostate cancer since 2001. Since that time the LDR is recommended in combination with EBRT in intermediate and high-risk groups in several international clinical guideline documents [6],[7],[8]. This application is requesting an MBS item number for LDR Brachytherapy in intermediate and high-risk prostate cancer. This indication is new to the MBS.

30. If applicable, are there any limitations on the provision of the proposed medical service delivered to the patient (i.e. accessibility, dosage, quantity, duration or frequency):

Yes

Accessibility – there may be limitations in access to LDR Brachytherapy. This may be limited by the number of approved facilities and qualified specialists. It is also more common for LDR Brachytherapy to be offered in private hospitals rather than public hospitals.

Dosage – Generally between 50-100 LDR brachytherapy seeds are implanted

Frequency – It is anticipated that most patients will only receive LDR brachytherapy once in a lifetime.

31. If applicable, identify any healthcare resources or other medical services that would need to be delivered <u>at the same time</u> as the proposed medical service:

[6] Davis BJ, Taira AV, Nguyen PL, et al. ACR appropriateness criteria: Permanent source brachytherapy for prostate cancer. Brachytherapy. 2017;16(2):266-76.
[7] Mottet N, Bellmunt J, Bolla M, et al. EAU-ESTRO-SIOG Guidelines on Prostate Cancer. Part 1: Screening, Diagnosis, and Local Treatment with Curative Intent. Eur Urol. 2017;71(4):618-29.
[8] Chin J, Rumble RB, Kollmeier M, et al. Brachytherapy for Patients With Prostate Cancer: American Society of Clinical Oncology/Cancer Care Ontario Joint Guideline Update. J Clin Oncol. 2017;35(15):1737-43

Either before or during the procedure the following planning procedures will take place.

15539

BRACHYTHERAPY PLANNING, computerised radiation dosimetry for I125 seed implantation of localised prostate cancer, in association with item 15338

Fee: $627.30 **Benefit: 75% =** $470.50 85% = $547.10

15513

RADIATION SOURCE LOCALISATION using a simulator or x-ray machine or CT of a single area, where views in more than 1 plane are required, for brachytherapy treatment planning for I125 seed implantation of localised prostate cancer, in association with item 15338

Fee: $306.55 **Benefit:** 75% = $229.95 85% = $260.60

55603

PROSTATE, bladder base and urethra, ultrasound scan of, where performed:

(a) personally by a medical practitioner who undertook the assessment referred to in (c) using a transducer probe or probes that:

(i) have a nominal frequency of 7 to 7.5 megahertz or a nominal frequency range which includes frequencies of 7 to 7.5 megahertz; and

(ii) can obtain both axial and sagittal scans in 2 planes at right angles; and

(b) following a digital rectal examination of the prostate by that medical practitioner; and

(c) on a patient who has been assessed by a specialist in urology, radiation oncology or medical oncology or a consultant physician in medical oncology who has:

(i)examined the patient in the 60 days prior to the scan; and

(ii)recommended the scan for the management of the patient's current prostatic disease (R) (K)

Bulk bill incentive

Fee: $109.10 **Benefit:** 75% = $81.85 85% = $92.75

The delivery of the seeds is guided by transrectal ultrasound (TRUS). This is included on the MBS under the following item number

Patients will be admitted as a day only patient and may stay overnight.

32. If applicable, advise which health professionals will primarily deliver the proposed service:

Radiation Oncologist and a Urologist.

33. If applicable, advise whether the proposed medical service could be delegated or referred to another professional for delivery:

The service cannot be delegated.

34. If applicable, specify any proposed limitations on who might deliver the proposed medical service, or who might provide a referral for it:

This application is requesting to amend item numbers 37220 and 15338 that are listed in Question 6c. The item numbers specify that the procedure must be performed by a urologist in association with a radiation oncologist

35. If applicable, advise what type of training or qualifications would be required to perform the proposed service as well as any accreditation requirements to support service delivery:

Radiation Oncologists will have completed the training program of the Royal Australian and New Zealand College of Radiologists for Radiation Oncology or otherwise be qualified to practice the specialty in Australia. Urologists will have completed the Urology specialist training program administered by the Urological Society of Australia and New Zealand (USANZ) on behalf of the Royal College of Surgeons or else be otherwise qualified to practice as a Urology specialist in Australia.

36. (a) Indicate the proposed setting(s) in which the proposed medical service will be delivered (select all relevant settings):

- ☒ Inpatient private hospital
- ☒ Inpatient public hospital
- ☐ Outpatient clinic
- ☐ Emergency Department
- ☐ Consulting rooms
- ☒ Day surgery centre
- ☐ Residential aged care facility
- ☐ Patient's home
- ☐ Laboratory
- ☐ Other – please specify below

(b) Where the proposed medical service is provided in more than one setting, please describe the rationale related to each:

LDR Brachytherapy can be provided in both the public and private hospital sector. The requirement for an inpatient service is that the pre-treatment procedures and the service itself requires the administration of radio-active substances. The patient will require appropriate monitoring following the procedure and to ensure that patient and radiation requirements are met, the service is most reasonably delivered in an inpatient setting or a day surgery in an appropriate location. The facility will require a license to receive, handle, store and manage waste disposal. The need for overnight vs day-only service is primarily determined by the general anaesthetic requirements of the hospital and local regulations

37. Is the proposed medical service intended to be entirely rendered in Australia?

- ☒ Yes
- ☐ No – please specify below

The service is delivered in Australia, but the brachytherapy seeds must be ordered from an overseas manufacturer. This may take a number of weeks.

PART 6c – INFORMATION ABOUT THE COMPARATOR(S)

38. Nominate the appropriate comparator(s) for the proposed medical service, i.e. how is the proposed population currently managed in the absence of the proposed medical service being available in the Australian health care system (including identifying health care resources that are needed to be delivered at the same time as the comparator service):

As per the attached Clinical Pathway Flowchart, LDR Brachytherapy is intended to be a 'boost' for EBRT. A 'boost' or dose escalation for intermediate and high-risk prostate cancer is now provided by a dose escalation via EBRT (DE-EBRT) or HDR brachytherapy. These interventions are the comparator interventions for LDR Brachytherapy. EBRT, HDR brachytherapy and LDR brachytherapy may all be used

as monotherapy for low to intermediate risk patients. However clinical guidelines now recommend that intermediate to high-risk patients receive combination therapy of EBRT and brachytherapy.

DE-EBRT

DE-EBRT is an additional 'dose' of EBRT that follows a conventional course of EBRT. DE-EBRT can be delivered by 3D-CRT[9] or IMRT which is an advanced form of 3D-CRT and is designed to reduce toxicity to surrounding tissues. Radiation dose is typically delivered as an additional dose to a total of 78 Gy. In the ASCENDE-RT trial, DE-EBRT was delivered as an additional 32 Gy in 16 fractions for a total of 78 Gy[10]

3D-CRT and IMRT require computerised planning and dosimetry prior to delivery of DE-EBRT. DE-EBRT is delivered in a number of fractions over a series of visits. In the ASCENDE-RT trial, DE-EBRT was delivered as an additional 32Gy in 16 fractions for a total of 78 Gy

HDR Brachytherapy

HDR Brachytherapy involves the placement of hollow catheters into the prostate under general anaesthesia. Radiotherapy is delivered by a radioactive Iridium-192 source which is guided through the catheters over one to three sessions. Following completion of treatment, the catheters are then removed. HDR Brachytherapy will require an admission of 2-3 days. Patients must be isolated in a single room during the delivery of treatment for radiation safety purposes.

39. Does the medical service that has been nominated as the comparator have an existing MBS item number(s)?

☒ Yes (please provide all relevant MBS item numbers below)
☐ No

DE-EBRT

MBS Item	Descriptor	Fee	Benefit 75%
15555	**Simulation for intensity-modulated radiation therapy IMRT, with or without intravenous contrast medium**	**$710.55**	**$532.95**
15550	**Simulation for three dimensional conformal radiotherapy without intravenous contrast medium**	**$658.60**	**$493.95**
15559	**Dosimetry for three dimensional conformal radiotherapy of level 1 complexity**	**$644.40**	**$584.20**
15248 X 39	**RADIATION ONCOLOGY TREATMENT, using a dual photon energy linear accelerator with a minimum higher energy of at least 10MV photons, with electron facilities - each attendance at which treatment is given - 1 field - treatment delivered to primary site (prostate)**	**$59.65**	**$44.75**
15263	**RADIATION ONCOLOGY TREATMENT, using a dual photon energy linear accelerator with a minimum higher energy of at least 10MV photons, with electron facilities - each attendance at which treatment is given - 2 or more fields up to a**	**Fee for 15263 plus $37.95 for each**	**$37.95**

[9] Dearnaley DP et al '*Escalated-dose versus control-dose conformal radiotherapy for prostate cancer: long-term results from the MRC RT01 randomised controlled trial*' The Lancet vol 15 2014

[10] Morris WJ, Tyldesley S, Rodda S, et al*. Androgen Suppression Combined with Elective Nodal and Dose Escalated Radiation Therapy (the ASCENDE-RT Trial): An Analysis of Survival Endpoints for a Randomized Trial Comparing a Low-Dose-Rate Brachytherapy Boost to a Dose-Escalated External Beam Boost for High- and Intermediate-risk Prostate Cancer*. Int J Radiat Oncol Biol Phys.2017;98(2):275-85.

MBS Item	Descriptor	Fee	Benefit 75%
	maximum of 5 additional fields (rotational therapy being 3 fields) - treatment delivered to primary site (prostate)	**additional field**	
37217	**Prostate, implantation of radio-opaque fiducial markers into the prostate gland or prostate surgical bed**	**$138.30**	**$103.75**
45566	**TISSUE EXPANSION not being a service to which item 45539 or 45542 applies – insertion of tissue expansion unit and all attendances for subsequent expansion injections**	**$1,072.20**	**$803.40**

HDR Brachytherapy

37227 **X 2**	**PROSTATE, transperineal insertion of catheters into, for high dose rate brachytherapy using ultrasound guidance including any associated cystoscopy. The procedure must be performed at an approved site in association with a radiation oncologist, and be associated with a service to which item 15331 or 15332 applies.**	**$565.85**	**$424.40**
15532 **X 2**	**IMPLANTATION OF A SEALED RADIOACTIVE SOURCE (having a half-life of less than 115 days including iodine, gold, iridium or tantalum) to a site (including the tongue, mouth, salivary gland, axilla, subcutaneous sites), where the volume treated involves multiple planes but does not require surgical exposure and using automatic afterloading techniques**	**$745.80**	**$559.35**

40. Define and summarise the current clinical management pathways that patients may follow *after* they receive the medical service that has been nominated as the comparator (supplement this summary with an easy to follow flowchart [as an attachment to the Application Form] depicting the current clinical management pathway that patients may follow from the point of receiving the comparator onwards including health care resources):

Please see attached Clinical Pathway Flowchart 1 document.

The clinical pathway that a patient will follow after EBRT plus DE-EBRT or EBRT plus HDR brachytherapy will be the same. PSA is monitored post-treatment. Should a PSA nadir be reached and remain at that point, then the patient would continue to be monitored. Should biochemical failure occur, or the patient have a positive DRE then further intervention to control the disease is required. Biochemical failure is defined as 2ng/ml over the nadir PSA[11]

Patients who are considered appropriate candidates for local treatment of disease may receive one or more of the following imaging services to determine if the tumour has metastasised.

- PSA Double Timing (PSADT)
- Chest x-ray
- Bone scan
- Prostate MRI
- An abdominal/pelvic CT or MRI may be considered

[11] NCCN Clinical Practice Guidelines in Oncology (NCCN GuidelinesR). Prostate Cancer. Version 2.2017. https://www.nccn.org/

- TRUS/TP biopsy

Should the TRUS/TP biopsy be positive but there is no evidence of distant metastases than a man may be offered an RP with pelvic lymph node dissection (PLND) or additional brachytherapy. This may be either LDR or HDR brachytherapy. If the disease progresses than systemic therapy is implemented.

Should the TRUS/TP biopsy be negative and there is no evidence for metastatic disease, men may be offered ADT or opt to continue observation. Should the patient test positive for metastatic disease then systemic therapy should begin.

A patient who is not a candidate for local treatment due to age, comorbidities or other factors may be offered a bone scan. ADT may be offered if the bone scan is positive or the patient can be monitored without ADT until symptoms develop or PSA increases.

Should a patient progress to metastatic disease without biochemical failure then systemic therapy should be implemented.

41. (a) Will the proposed medical service be used in addition to, or instead of, the nominated comparator(s)?

It is anticipated that LDR Brachytherapy will be used as an alternative to DE-EBRT or HDR brachytherapy in conjunction with EBRT.

(b) If yes, please outline the extent of which the current service/comparator is expected to be substituted:

LDR Brachytherapy is the only radiotherapy modality for prostate cancer included on the MBS that has a specific risk classification indication. Therefore, it is not possible to identify how many intermediate to high risk patients are currently being treated by the comparator therapies. In addition, an DE-EBRT 'boost' cannot be distinguished from EBRT. Very low risk to high risk patients may all be treated with EBRT and HDR brachytherapy as a monotherapy or in combination. It is not anticipated that either HDR brachytherapy or DE-EBRT will be replaced entirely by LDR brachytherapy and is likely to be driven to a significant degree by a man's preference. Since current guidelines and clinical evidence support LDR brachytherapy for this indication it is likely that a reasonable proportion of patients will receive LDR brachytherapy should the service be included on the MBS.

42. Define and summarise how current clinical management pathways (from the point of service delivery onwards) are expected to change as a consequence of introducing the proposed medical service including variation in health care resources (Refer to Question 39 as baseline):

The introduction of LDR Brachytherapy is not anticipated to change the current clinical pathway following treatment. Regardless of which radiotherapy modality was received the patient will follow the clinical pathway outlined in Question 40.

PART 6d – INFORMATION ABOUT THE CLINICAL OUTCOME

43. Summarise the clinical claims for the proposed medical service against the appropriate comparator(s), in terms of consequences for health outcomes (comparative benefits and harms):

LDR Brachytherapy plus EBRT is superior to DE-EBRT plus EBRT in intermediate and high-risk prostate cancer. LDR Brachytherapy plus EBRT is at least as effective as HDR Brachytherapy plus EBRT in intermediate and high-risk prostate cancer

44. Please advise if the overall clinical claim is for:

☒ Superiority
☐ Non-inferiorityBelow, list the key health outcomes (major and minor – prioritising major key health outcomes first) that will need to be specifically measured in assessing the clinical claim of the proposed medical service versus the comparator:

Safety Outcomes:
Acute genitourinary toxicity
Late genitourinary toxicity
Acute gastrointestinal toxicity
Late genitourinary toxicity
Clinical Effectiveness Outcomes:
Biochemical progression free survival (b-PFS)
Overall survival (OS)
Metastasis-free survival
Prostate cancer-specific survival

PART 7 – INFORMATION ABOUT ESTIMATED UTILISATION

45. Estimate the prevalence and/or incidence of the proposed population:

It is estimated that 23780 new cases of prostate cancers will be diagnosed each year by 2018[12] . It is estimated that 35.9% will be intermediate risk cancers and 16.5% will be classified as high risk[13]. Therefore potentially 12,460 patients would be eligible.

46. Estimate the number of times the proposed medical service(s) would be delivered to a patient per year:

Once

47. How many years would the proposed medical service(s) be required for the patient?

The service is delivered only once to the patient. The exception to this is when a man has progressive disease. Brachytherapy (LDR or HDR) may occasionally be offered again if there is biochemical failure following radiotherapy modalities

48. Estimate the projected number of patients who will utilise the proposed medical service(s) for the first full year:

While it is likely that there will be 12460 eligible patients by 2019, a large proportion of the intermediate risk cases will be managed by active surveillance or RP. It is not possible to determine how many patients are managed by active surveillance. A proportion of high risk patients will be managed by RP with or without EBRT. There were approximately 4225 RPs performed in 2014-2015[14] , however it is not possible to determine how many of these procedures may have been performed to treat recurrent disease or how many were performed in low risk patients.

As LDR Brachytherapy has been available for lower risk disease (T1 or T2 tumour, PSA ≤ 10 ng/ml and Gleason Score ≤ 7), it may be more useful to estimate utilisation using current utilisation of LDR Brachytherapy.

[12] AIHW *'Prostate Cancer in Australia'* 2013. https://www.aihw.gov.au/reports/cancer/prostate-cancer-in-australia/contents/table-of-contents

[13] Zhang H et al *'Age and racial differences among PSA-detected (AJCC stage T1cN0M0) prostate cancer in the US: a population-based study of 70, 345 men.* Front. Onc. Dec 2013 Vol 3

[14] AHIW National Hospital Morbidity Database, procedures and healthcare interventions (ACHI 8th edition), Australia, 2013-2014 to 2014-2015

In 2016-2017 financial year item number 37720 (LDR Brachytherapy, urological component) was claimed 301 times. 47.6% of prostate cancers are estimated to be low risk and 52.4% are estimated to be intermediate or high risk. If it is assumed that a similar proportion of intermediate and high-risk cases would receive LDR brachytherapy as low risk patients, then the maximum number of LDR services would be 632.

Clinicians are of the opinion that initial uptake of LDR brachytherapy in intermediate and high-risk patients will be limited, at least initially, to patients who may otherwise have had HDR Brachytherapy. Assuming 52.4% of HDR brachytherapy are intermediate or high-risk patients (62 patients) and 50% of these will receive LDR brachytherapy instead of HDR brachytherapy then additional patients treated in the first year will be 31.

49. The projected number who will receive LDR brachytherapy with the proposed expanded indication in the first year is 332. Estimate the anticipated uptake of the proposed medical service over the next three years factoring in any constraints in the health system in meeting the needs of the proposed population (such as supply and demand factors) as well as provide commentary on risk of 'leakage' to populations not targeted by the service:

At present LDR Brachytherapy is only available in a limited number (25) of centres in Australia. Therefore, uptake will be limited by the available facilities. Uptake in the public sector is likely to be limited by the cost of the seeds. This is not the case in the private sector as the seeds are included on the Prostheses List and are covered by private health insurance

It is likely that as the results of the ASCENDE-RT trial are disseminated that patients who would otherwise have received a DE-EBRT treatment will be considered for LDR Brachytherapy

	Description	Source	2019	2021	2022
A	Australian male Population	ABS[15]	13,115,756	13, 358, 593	13.603,609
B	Prostate Cancer Incidence	Estimated from AIHW[16]	0.1967%	0.1997%	0.2027%
C	No of new prostate cancer patients	A*B	25,798	26,677	27,574
D	% Intermediate and High Risk		52.5%	52.5%	52.5%
E	Potential Eligibility	C*D	13,414	14,000	14,476
F	Additional cases from Year 1 due to population growth	Estimated from ABS and AIHW	34	36	37

As well as additional services from crossover from HDR Brachytherapy and population growth, it is likely that some patients who may otherwise had received RP may opt for EBRT with LDR brachytherapy boost. Clinicians working in this field were unable to estimate how many men may cross over from RP to EBRT plus LDR brachytherapy, but believed that growth would be incremental rather than rapid should LDR Brachytherapy become available for higher risk men. Following consultation, clinicians believed that treatment choice is highly personal and dependent on a man's tolerance for specific complications and side effects, and the advice received from the specialist with whom he had initial contact in the management of his prostate disease.

PART 8 – COST INFORMATION

[15] http://www.abs.gov.au/Population
[16] AIHW Cancer Series No 66: Cancer incidence projections Australia, 2011 to 2020

50. Indicate the likely cost of providing the proposed medical service. Where possible, please provide overall cost and breakdown:

This estimate of cost is based on the component clinical services outlined in Question 27. The costs are calculated from the perspective of the MBS. Hospital costs and PBS costs are not considered in this analysis.

Service	MBS item	Fee	Benefit	Frequency	Cost
Pre-treatment attendances					
Urologist	104	$85.55	$64.20	1	$64.20
Radiation Oncologist	104	$85.55	$64.20	1	$64.20
Flow Study	11900	$27.55	$20.70	1	$20.70
Volume Study	55603	$109.10	$81.85	1	$81.85
Dosimetry	15513	$306.55	$229.95	1	$229.95
Brachytherapy Planning	15539	$627.30	$470.50	1	$470.50
Treatment					
Seed implantation – radiation oncology component	15338	$935.60	$701.70	1	$701.70
Ultrasound	55603	$109.10	$81.85	1	$81.85
Seed implantation-urological component	37220	$1044.20	$783.15	1	$783.15
Initiation of anaesthesia	21973	$99.00	$74.25	1	$74.25
Anaesthesia: 1.26 to 1.30 hours	23063	$118.80	$89.10	1	$89.10
CT scan	56409	$250	$187.50	1	$187.50
Totals		$3798.3.20	$2848.95		$2848.95

51. Specify how long the proposed medical service typically takes to perform:

LDR Brachytherapy takes approximately 1 hour to perform. (1.5 hours have been included in the calculations in order to account for procedures that may take longer)

52. If public funding is sought through the MBS, please draft a proposed MBS item descriptor to define the population and medical service usage characteristics that would define eligibility for MBS funding.

Category 3 – Therapeutic Procedures
15338 Proposed item descriptor: PROSTATE, radioactive seed implantation of, radiation oncology component, using transrectal ultrasound guidance, for localised (non-metastatic) prostatic malignancy. The procedure must be performed at an approved site in association with a urologist Fee: $935.60
Category 3 – Therapeutic Procedures
37220 Proposed item descriptor: PROSTATE, radioactive seed implantation of, urology component, using transrectal ultrasound guidance, for localised (non-metastatic) prostatic malignancy. The procedure must be performed at an approved site in association with a radiation oncologist Fee: $1044.20

PART 9 – FEEDBACK

The Department is interested in your feedback.

53. How long did it take to complete the Application Form?

60 hours

54. (a) Was the Application Form clear and easy to complete?

At times – some questions are not clear. The guidelines are of little help as they either simply restate the question or seem to suggest providing information that is not asked in the question. If no, provide areas of concern:

(a) Are the associated Guidelines to the Application Form useful?

See above

☐ Yes
☐ No

(b) If no, what areas did you find not to be useful?

Insert feedback here

55. (a) Is there any information that the Department should consider in the future relating to the questions within the Application Form that is not contained in the Application Form?

☐ Yes
☐ No

(b) If yes, please advise:

Insert feedback here