Remit/appraisal objective
To appraise the clinical and cost effectiveness of sipuleucel-T within its licensed indication for the treatment of asymptomatic or minimally symptomatic metastatic castration-resistant prostate cancer¹.

Background
Prostate cancer is a disease in which tumours develop in the prostate, a gland in the male reproductive system. Its cause is thought to be multi-factorial, involving both environmental and genetic factors. The incidence of prostate cancer increases with age and is higher in men of African-Caribbean family origin. In England, there were approximately 35,000 people newly diagnosed with prostate cancer in 2010 and over 9000 deaths from prostate cancer in 2011.

Around 55–65% of people with prostate cancer develop metastatic disease (that is, the cancer spreads to other parts of the body). Metastatic prostate cancer initially responds to hormonal therapy in over 90% of people but eventually become resistant to it. This clinical condition is described as hormone-relapsed prostate cancer (but the terms ‘castrate-resistant prostate cancer’, ‘androgen-independent prostate cancer’ and ‘hormone-refractory prostate cancer’ are also used).

NICE clinical guideline 175 ‘Prostate cancer’ and NICE technology appraisal guidance 101 recommend docetaxel as a treatment option for men with metastatic hormone-refractory disease who have a Karnofsky performance-status score of 60% or more. Other treatment options may include abiraterone, which has a marketing authorisation for the treatment of metastatic castration resistant prostate cancer in adult men who are asymptomatic or mildly symptomatic after failure of androgen deprivation therapy in whom chemotherapy is not yet clinically indicated.

¹ The remit for this appraisal was formally referred to NICE in December 2012. In January 2013, NICE and the Department of Health agreed that, following feedback received from stakeholders during scoping and appraisal consultations, the term ‘castration resistant prostate cancer’ should be replaced with ‘hormone relapsed prostate cancer’ (HRPC). This will be implemented for all prospective appraisals from January 2013 onwards.
The technology
Sipuleucel-T (Provenge, Dendreon) is an autologous cellular immunotherapy that stimulates the natural ability of the patient’s own immune cells to identify and attack prostate cancer cells. Peripheral blood mononuclear cells are isolated from the patient’s blood and cultured ex vivo (that is, outside the patient’s body) to create the active component of sipuleucel-T. When given to the patient, sipuleucel-T activates T cells, which in turn target the tumour. Sipuleucel-T is administered intravenously.

Sipuleucel-T has a UK marketing authorisation for the treatment of asymptomatic or minimally symptomatic metastatic (non-visceral) castrate resistant prostate cancer in male adults in whom chemotherapy is not yet clinically indicated.

<table>
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<tr>
<th>Intervention</th>
<th>Sipuleucel-T immunotherapy</th>
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<tbody>
<tr>
<td>Population</td>
<td>Adults with asymptomatic or minimally symptomatic metastatic (non-visceral) hormone-relapsed prostate cancer in whom chemotherapy is not yet clinically indicated</td>
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<tr>
<td>Comparators</td>
<td>• Abiraterone</td>
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<td></td>
<td>• Best supportive care</td>
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<td>Outcomes</td>
<td>The outcome measures to be considered include:</td>
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<td>• overall survival</td>
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<td>• progression-free survival</td>
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<td>• response rate</td>
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<td>• prostate-specific antigen (PSA) response</td>
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<td></td>
<td>• time to symptom development</td>
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<td>• time to initiation of chemotherapy</td>
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<td>• adverse effects of treatment</td>
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<td>• health-related quality of life.</td>
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| Economic analysis | The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year.  
The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared.  
Costs will be considered from an NHS and Personal Social Services perspective.  
The availability of any patient access scheme for the intervention and comparator technologies should be taken into account. |
| Other considerations | Guidance will only be issued in accordance with the marketing authorisation. |
| Related NICE recommendations | Related Technology Appraisals:  
Technology Appraisal in preparation, ‘Abiraterone acetate for the treatment of metastatic hormone relapsed prostate cancer not previously treated with chemotherapy Earliest anticipated date of publication TBC.  
Related Guidelines:  
Cancer Service Guidance Urological Cancer, September 2002, Improving outcomes in urogenital cancers’. Anticipated review date TBC.  
Related Pathway:  
Appendix B

Questions for consultation

Have all relevant comparators for sipuleucel-T been included in the scope? Which treatments are considered to be established clinical practice in the NHS for people with asymptomatic or minimally symptomatic hormone-relapsed prostate cancer in whom chemotherapy is not yet clinically indicated?

- Is docetaxel a valid comparator for sipuleucel-T for this appraisal?

- How should best supportive care be defined? Is it a relevant comparator for this appraisal?

Are there any subgroups of people in whom sipuleucel-T is expected to be more clinically effective and cost effective or other groups that should be examined separately?

Where do you consider sipuleucel-T will fit into the existing NICE pathway, ‘Prostate cancer’?

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others. Please let us know if you think that the proposed remit and scope may need changing in order to meet these aims. In particular, please tell us if the proposed remit and scope:

- could exclude from full consideration any people protected by the equality legislation who fall within the patient population for which sipuleucel-T is licensed;

- could lead to recommendations that have a different impact on people protected by the equality legislation than on the wider population, e.g. by making it more difficult in practice for a specific group to access the technology;

- could have any adverse impact on people with a particular disability or disabilities.

Please tell us what evidence should be obtained to enable the Committee to identify and consider such impacts.

Do you consider sipuleucel-T to be innovative in its potential to make a significant and substantial impact on health-related benefits and how it might improve the way that current need is met (is this a ‘step-change’ in the management of the condition)?

Do you consider that the use of sipuleucel-T can result in any potential significant and substantial health-related benefits that are unlikely to be included in the QALY calculation?
Please identify the nature of the data which you understand to be available to enable the Appraisal Committee to take account of these benefits.

NICE intends to appraise this technology through its Single Technology Appraisal (STA) Process. We welcome comments on the appropriateness of appraising this topic through this process. (Information on the Institute’s Technology Appraisal processes is available at [http://www.nice.org.uk/aboutnice/howwework/devnicetech/technologyappraisalprocessguides/technology_appraisal_process_guides.jsp](http://www.nice.org.uk/aboutnice/howwework/devnicetech/technologyappraisalprocessguides/technology_appraisal_process_guides.jsp))