Cost-utility analysis of adding abiraterone acetate plus prednisone/prednisolone to long-term hormone therapy in newly diagnosed advanced prostate cancer: lifetime decision model in England based on STAMPEDE trial data

Caroline S Clarke*, Rachael M Hunter, Andrea Gabrio, Christopher D Brawley, Fiona C Ingleby, David Dearnaley, David Matheson, Gerhardt Attard, Hannah L Rush, Rob J Jones, William Cross, Chris Parker, J Martin Russell, Robin Millman, Silke Gillessen, Zafar Malik, Jason F Lester, James Wylie, Noel W Clarke, Mahesh KB Parmar, Matthew R Sydes, and Nicholas D James, on behalf of the STAMPEDE investigators

* Corresponding author: caroline.clarke@ucl.ac.uk, Research Department of Primary Care and Population Health, University College London, London, UK.

CHEERS checklist—Items to include when reporting economic evaluations of health interventions

Section/item	Item No	Recommendation	Reported on page No / line No
Title and abstract			
Title	1	Identify the study as an economic evaluation or use more specific terms such as "cost-effectiveness analysis", and describe the interventions compared.	Page 1
Abstract	2	Provide a structured summary of objectives, perspective, setting, methods (including study design and inputs), results (including base case and uncertainty analyses), and conclusions.	Page 3
Introduction			
Background and objectives	3	Provide an explicit statement of the broader context for the study.	Page 5 (section 1)
		Present the study question and its relevance for health policy or practice decisions.	Page 5 (section 1)
Methods			
Target population and subgroups	4	Describe characteristics of the base case population and subgroups analysed, including why they were chosen.	Page 6 (section 2.1)
Setting and location	5	State relevant aspects of the system(s) in which the decision(s) need(s) to be made.	Page 5 (section 1)

Section/item	Item No	Recommendation	Reported on page No / line No
Study perspective	6	Describe the perspective of the study and relate this to the costs being evaluated.	Page 9, section 2.3.3
Comparators	7	Describe the interventions or strategies being compared and state why they were chosen.	Page 6, section 2.1
Time horizon	8	State the time horizon(s) over which costs and consequences are being evaluated and say why appropriate.	Page 5, section 1 Page 9, section 2.4.1
Discount rate	9	Report the choice of discount rate(s) used for costs and outcomes and say why appropriate.	Page 10, sections 2.4.2 and 2.4.3
Choice of health outcomes	10	Describe what outcomes were used as the measure(s) of benefit in the evaluation and their relevance for the type of analysis performed.	Page 6, section 2.1 Page 8, section 2.3.2
Measurement of effectiveness	11a	*Single study-based estimates:* Describe fully the design features of the single effectiveness study and why the single study was a sufficient source of clinical effectiveness data.	Page 8, section 2.3.2 Page 13, section 3.2.3
	11b	*Synthesis-based estimates*: Describe fully the methods used for identification of included studies and synthesis of clinical effectiveness data.	n/a
Measurement and valuation of preference based outcomes	12	If applicable, describe the population and methods used to elicit preferences for outcomes.	n/a
Estimating resources and costs	13a	*Single study-based economic evaluation:* Describe approaches used to estimate resource use associated with the alternative interventions. Describe primary or secondary research methods for valuing each resource item in terms of its unit cost. Describe any adjustments made to approximate to opportunity costs.	Page 9, section 2.3.3
	13b	*Model-based economic evaluation:* Describe approaches and data sources used to estimate resource use associated with model health states. Describe primary or secondary research methods for valuing each resource item in terms of its unit cost. Describe any adjustments made to approximate to opportunity costs.	Page 10, section 2.4.3

Section/item	Item No	Recommendation	Reported on page No / line No
Currency, price date, and conversion	14	Report the dates of the estimated resource quantities and unit costs. Describe methods for adjusting estimated unit costs to the year of reported costs if necessary. Describe methods for converting costs into a common currency base and the exchange rate.	Page 9, section 2.3.3
Choice of model	15	Describe and give reasons for the specific type of decision-analytical model used. Providing a figure to show model structure is strongly recommended.	Page 7, Figure 1
Assumptions	16	Describe all structural or other assumptions underpinning the decision-analytical model.	Page 9-10, section 2.4
Analytical methods	17	Describe all analytical methods supporting the evaluation. This could include methods for dealing with skewed, missing, or censored data; extrapolation methods; methods for pooling data; approaches to validate or make adjustments (such as half cycle corrections) to a model; and methods for handling population heterogeneity and uncertainty.	Pages 9-10, sections 2.2.2 and 2.2.3
Results			
Study parameters	18	Report the values, ranges, references, and, if used, probability distributions for all parameters. Report reasons or sources for distributions used to represent uncertainty where appropriate. Providing a table to show the input values is strongly recommended.	Page 14, section 3.3; Supplementary materials as referenced in that section
Incremental costs and outcomes	19	For each intervention, report mean values for the main categories of estimated costs and outcomes of interest, as well as mean differences between the comparator groups. If applicable, report incremental cost-effectiveness ratios.	Page 11, section 3.1 Page 14, section 3.3.1
Characterising uncertainty	20a	*Single study-based economic evaluation:* Describe the effects of sampling uncertainty for the estimated incremental cost and incremental effectiveness parameters, together with the impact of methodological assumptions (such as discount rate, study perspective).	Pages 12-14, section 3.2; Supplementary materials as referenced in that section
	20b	*Model-based economic evaluation:* Describe the effects on the results of uncertainty for all input	Page 11, section 3.1 Page 16, section 3.3.2

Section/item	Item No	Recommendation	Reported on page No / line No
		parameters, and uncertainty related to the structure of the model and assumptions.	Page 17, section 3.3.3 Supplementary materials as referenced in that section
Characterising heterogeneity	21	If applicable, report differences in costs, outcomes, or cost-effectiveness that can be explained by variations between subgroups of patients with different baseline characteristics or other observed variability in effects that are not reducible by more information.	All results are reported by subgroup
Discussion			
Study findings, limitations, generalisability, and current knowledge	22	Summarise key study findings and describe how they support the conclusions reached. Discuss limitations and the generalisability of the findings and how the findings fit with current knowledge.	Page 17, section 4
Other			
Source of funding	23	Describe how the study was funded and the role of the funder in the identification, design, conduct, and reporting of the analysis. Describe other non-monetary sources of support.	Page 20, end of paper, just before References
Conflicts of interest	24	Describe any potential for conflict of interest of study contributors in accordance with journal policy. In the absence of a journal policy, we recommend authors comply with International Committee of Medical Journal Editors recommendations.	Page 20-21, end of paper, just before References

For consistency, the CHEERS statement checklist format is based on the format of the CONSORT statement checklist