

Appendix 4: Critical appraisal of the economic evaluation studies using the CHEERS checklist

CHEERS checklist (Husereau et al, 2013)	Brailsford et al (2007)	Chalk et al (2012)	Dasbach et al (1991)	Davies et al (2002)	Javitt et al (1990)	Javitt et al (1994)	Rein et al (2011)	Tung et al (2008)	Vijan et al (2000)
Title and abstract									
1 Title: Identify the study as an economic evaluation, or use more specific terms such as "cost-effectiveness analysis", and describe the interventions compared.	N	N	Y	N	N	Y	Y	Y	Y
2 Abstract: Provide a structured summary of objectives, methods including study design and inputs, results including base case and uncertainty analyses, and conclusions.	N	Y	N	Y	N	Y	Y	Y	Y
Introduction									
3 Background & objectives: Provide an explicit statement of the broader context for the study. Present the study question and its relevance for health policy or practice decisions.	Y	Y	Y	N	Y	Y	Y	Y	N
Methods									
4 Target Population and Subgroups: Describe characteristics of the base case population and subgroups analysed including why they were chosen.	Y	Y	Y	Y	Y	Y	Y	Y	Y
5 Setting and Location: State relevant aspects of the system(s) in which the decision(s) need(s) to be made.	Y	Y	Y	Y	Y	N	Y	Y	Y
6 Study perspective: Describe the perspective of the study and relate this to the costs being evaluated.	N	N	Y	N	Y	Y	Y	N	Y
7 Comparators: Describe the interventions or strategies being compared and state why they were chosen.	Y*	Y	Y	Y	Y	Y	Y	Y	Y*
8 Time Horizon: State the time horizon(s) over which costs and consequences are being evaluated and say why appropriate.	Y	Y	Y	Y	Y	Y	Y	Y	Y*
9 Discount Rate: Report the choice of discount rate(s) used for costs and outcomes and say why appropriate.	Y	N	Y	N	Y	Y	Y	Y	Y
10 Choice of Health Outcomes: Describe what outcomes were used as the measure(s) of benefit in the evaluation and their relevance for the type of analysis performed.	Y	Y	Y	Y	Y	Y	Y	Y	Y
11a Measurement of Effectiveness - 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.	N/A	N/A	Y	N/A	N/A	N/A	N/A	Y	N/A
11b Measurement of Effectiveness - Synthesis-based Estimates: Describe fully the methods used for identification of included studies and clinical effectiveness data synthesis of clinical effectiveness data.	N	Y	N/A	Y	Y	Y	Y	N/A	Y
12 Measurement and Valuation of Preference-based Outcomes: If applicable, describe the population and methods used to elicit preferences for health outcomes.	N/A	N/A	N/A	N/A	N/A	N/A	Y*	Y	Y
13a Estimating Resources and Costs - 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.	N/A	Y	Y	N/A	N/A	N/A	N/A	Y	N/A
13b Estimating Resources and Costs - Model-based Economic Evaluation: Describe approaches and data sources used to estimate resource use associated with model health states. Describe	Y	N/A	N/A	Y	Y	Y	Y	N/A	Y

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.									
14 Currency, Price Date and Conversion: 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.	N	N	Y	N	Y	Y	Y	Y	N
15 Choice of Model: Describe and give reasons for the specific type of decision-analytic model used. Providing a figure to show model structure is strongly recommended.	Y	Y	Y	Y	Y	Y	Y	Y	Y
16 Assumptions: Describe all structural or other assumptions underpinning the decision-analytic model.	Y*	N	Y*	Y*	Y*	Y*	Y*	Y*	Y*
17 Analytic Methods: Describe all analytic 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 a model, & methods for handling population heterogeneity and uncertainty.	N	N	N	N	N	N	Y	N	N
Results									
18 Study parameters: 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. We strongly recommend the use of a table to show the input values.	N	N	Y	Y*	Y	Y	Y	Y*	Y
19. Incremental costs and outcomes: 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.	Y	N	N	N	N	N	Y	Y*	Y
20a Characterizing Uncertainty - 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.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20b Characterizing Uncertainty - Model-based economic evaluation: Describe the effects on the results of uncertainty for all input parameters, and uncertainty related to the structure of the model and assumptions.	N	Y	Y	Y	Y	Y	Y	Y	Y
21 Characterizing Heterogeneity: If applicable, report differences in costs, outcomes or in 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.	Y	Y	Y	N	N	N	N	N	N
Discussion									
22 Study Findings, Limitations, Generalizability, and Current Knowledge: Summarize key study findings and describe how they support the conclusions reached. Discuss limitations and the generalizability of the findings and how the findings fit with current knowledge.	Y*	Y	Y	Y*	Y*	Y	Y	Y*	Y
Other									
23 Source of Funding: 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.	N	Y	N	Y	N	Y	Y	Y	Y
24 Conflicts of Interest: Describe any potential for conflict of interest among 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	N	Y	N	N	N	N	Y	N	N

Key: Y = yes, No = no, N/A = not applicable and * = partially completed