

Consolidated Guidelines for the Reporting of Economic Evaluations

The CHEERS Task Force

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Outline of Presentation

- Background: why more reporting guidelines?
- Methods
- Issues arising
- The CHEERS checklist
- Dissemination

Why More Reporting Guidelines?

- Many existing guidelines are out-of-date
- Many guidelines (or checklists) mix up reporting standards with methods guidance
- A survey of medical editors identified a need for more guidance
- The BMJ was considering updating its guidelines (from 1996)
- Within medical research, the CONSORT guidelines are becoming very influential

Methods

- Task Force appointed by the International Society of Pharmacoeconomics and Outcomes Research (ISPOR)
- Previously published checklists or guidance documents related to reporting economic evaluations were identified from a systematic review and subsequent survey of Task Force members.
- A list of possible reporting items was created, based on the systematic review.
- A two-round, modified Delphi Panel with representatives from academia, clinical practice, industry and government, as well as the editorial community, was used to identify a minimum set of items important for reporting from the larger list.
- Out of 44 candidate items, 24 items and accompanying recommendations were developed,



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Goals for the CHEERS Checklist

A manuscript that meets all the requirements in the checklist will:

- Clearly state the study question and its importance to decision makers
- Allow a reviewer and a reader to assess the appropriateness of the methods, assumptions, and data used in the study
- Allow a reviewer and reader to assess the credibility of the results and the sensitivity of the results to alternative data choices
- Have conclusions that are supported by the study results
- Potentially allow a researcher to replicate the model

Issues – What Items Should Authors *Explain* (as well as report)? (1)

- *Comparators*
 - including dose, duration, route of administration
- *Time Horizon*
 - including method of extrapolation
- *Discount Rate*
- *Outcome Measures*
 - relevance to form of analysis and to the decision maker

Issues – What Items Should Authors *Explain* (as well as report)? (2)

- *Reliance on a single clinical study*
- *Choice of modeling approach*
 - natural history, treatment practice, credible data
- *Input parameters*
 - transformation, distributions, expert opinion
- *Subgroup analysis*

Issues - Model Transparency and Validation(1)

- Lack of transparency is the most frequent criticism of models
- It is important to describe the type of model and to document all the structural assumptions.
- Ideally, an educated user should be able to replicate the model.
- There is debate over whether an electronic version of the model should be submitted to journals.

Issues - Model Transparency and Validation(2)

Recommendations

Methods

- Describe and justify the type of model.
- Describe the health states or other relevant structural assumptions that can assist the reader with necessary expertise to evaluate and potentially reproduce the model.
- Describe the approach to validate the model.

Issues - Model Transparency and Validation(3)

Recommendations

Results

Describe the effects of uncertainty for all parameters, uncertainty related to the structure of the model, and assumptions on the model results.

CHEERS Checklist

A brief list of recommendations subdivided into the five sections generally found in an economic evaluation paper:

- *Title and Abstract*
- *Introduction*
- *Methods*
- *Results*
- *Discussion*

CHEERS Checklist – Items to include when reporting economic evaluations of health interventions (1)

Section/Item	Item No	Recommendation
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.
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.
Introduction		
Background and objectives	3	Provide an explicit statement of the broader context for the study.
		Present the study question and its relevance for health policy or practice decisions.
Methods		
Target Population and Subgroups	4	Describe characteristics of the base case population and subgroups analyzed including why they were chosen.
Setting and Location	5	State relevant aspects of the system(s) in which the decision(s) need(s) to be made.
Study Perspective	6	Describe the perspective of the study and relate this to the costs being evaluated.
Comparators	7	Describe the interventions or strategies being compared and state why they were chosen.
Time Horizon	8	State the time horizon(s) over which costs and consequences are being evaluated and say why appropriate.

CHEERS Checklist – Items to include when reporting economic evaluations of health interventions (2)

Section/Item	Item No	Recommendation
Discount Rate	9	Report the choice of discount rate(s) used for costs and outcomes and say why appropriate.
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.
Measurement of Effectiveness	11a	<i>Single Study-Based Estimates:</i> Describe fully the design features of the single effectiveness study and why the single study was a sufficient source of clinical effectiveness data.
	11b	<i>Synthesis-based Estimates:</i> Describe fully the methods used for identification of included studies and synthesis of clinical effectiveness data.
Measurement and Valuation of Preference-Based Outcomes	12	If applicable, describe the population and methods used to elicit preferences for outcomes.
Estimating Resources and Costs	13a	<i>Single Study-based Economic evaluation:</i> 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.
	13b	<i>Model-based Economic Evaluation:</i> 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.

CHEERS Checklist – Items to include when reporting economic evaluations of health interventions (3)

Section/Item	Item No	Recommendation
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.
Choice of model	15	Describe and give reasons for the specific type of decision-analytic model used. Providing a figure to show model structure is strongly recommended.
Assumptions	16	Describe all structural or other assumptions underpinning the decision-analytic model.
Analytic Methods	17	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 or make adjustments (e.g., half-cycle corrections) to a model, and methods for handling population heterogeneity and uncertainty.
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.
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.

CHEERS Checklist – Items to include when reporting economic evaluations of health interventions (4)

Section/Item	Item No	Recommendation
Characterizing Uncertainty	20a	<i>Single study-based economic evaluation:</i> Describe the effects of sampling uncertainty for estimated incremental cost, incremental effectiveness and incremental cost-effectiveness, together with the impact of methodological assumptions (e.g. discount rate, study perspective).
	20b	<i>Model-based economic evaluation:</i> Describe the effects on the results of uncertainty for all input parameters, and uncertainty related to the structure of the model and assumptions.
Characterizing 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.
Discussion		
Study Findings, Limitations, Generalizability, and Current Knowledge	22	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.
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.
Conflicts of Interest	24	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

Dissemination

- Summary statement (including the checklist) was published simultaneously in 10 journals (including the *BMJ*, *Pharmacoeconomics*, the *Eur J Health Econ* and *Value in Health*)
- Varying degrees of endorsement from the various journals
- Full Task Force report published in *Value in Health* 2013;16:231-50

Task Force Report

- Equivalent to a CONSORT 'explanation and elaboration' document
- Gives examples for each of the reporting items and explains the reasons for each.