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## ISPOR TASK FORCE REPORT

## Consolidated Health Economic Evaluation Reporting Standards (CHEERS)—Explanation and Elaboration: A Report of the ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices Task Force

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## A B S T R A C T

**Background:** Economic evaluations of health interventions pose a particular challenge for reporting because substantial information must be conveyed to allow scrutiny of study findings. Despite a growth in published reports, existing reporting guidelines are not widely adopted. There is also a need to consolidate and update existing guidelines and promote their use in a user-friendly manner. A checklist is one way to help authors, editors, and peer reviewers use guidelines to improve reporting. **Objective:** The task force's overall goal was to provide recommendations to optimize the reporting of health economic evaluations. The Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement is an attempt to consolidate and update previous health economic evaluation guidelines into one current, useful reporting guidance. The CHEERS Elaboration and Explanation Report of the ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices Task Force facilitates the use of the CHEERS statement by providing examples and explanations for each recommendation. The primary audiences for the CHEERS statement are researchers reporting economic evaluations and the editors and peer reviewers assessing them for publication. **Methods:** The need for new reporting guidance was identified by a survey of medical editors. 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 items from these efforts was created. 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. **Results:** Out of 44 candidate items, 24 items and accompanying recommendations were developed, with some specific recommendations for single study-based and model-based economic evaluations. The final recommendations are subdivided into six main categories: 1) title and abstract, 2) introduction, 3) methods, 4) results, 5) discussion, and 6) other. The recommendations are contained in the CHEERS statement, a user-friendly 24-item checklist. The task force report provides explanation and elaboration, as well as an example for each recommendation. The ISPOR CHEERS statement is available online via *Value in Health* or the ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices - CHEERS Task Force webpage (<http://www.ispor.org/TaskForces/EconomicPubGuidelines.asp>). **Conclusions:** We hope that the ISPOR CHEERS statement and the accompanying task force report guidance will lead to more consistent and

The first author is the Task Force Chair, and the remaining authors are Task Force members.

**Conflict of interest:** All authors have completed the ICMJE uniform disclosure form at [www.icmje.org/coi\\_disclosure.pdf](http://www.icmje.org/coi_disclosure.pdf) and declare: no other relationships or activities that could appear to have influenced the submitted work; one author (FA) served as a board member for the study funder and nine authors (FA, AHB, CC, MD, DG, DH, EL, JM, SP) were provided support for travel to a face-to-face meeting to discuss the contents of the report. Two authors (FA, MD) have received payment from the study sponsor for serving as co-editors for *Value in Health*.

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transparent reporting, and ultimately, better health decisions. To facilitate wider dissemination and uptake of this guidance, we are copublishing the CHEERS statement across 10 health economics and medical journals. We encourage other journals and groups to consider endorsing the CHEERS statement. The author team plans to review the checklist for an update in 5 years.

**Keywords:** biomedical research/methods, biomedical research/standards, costs and cost analysis, guidelines as topic/standards, humans, publishing/standards.

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### Background to the Task Force

The ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices Task Force was approved by the ISPOR Board of Directors in 2009 to develop guidance to improve the reporting of health economic evaluations. Task force membership was comprised of health economic journal editors and content experts from around the world.

The task force met bimonthly via teleconference and in person at ISPOR annual meetings and congresses to develop reporting guidance based on a modified Delphi Panel process. A group of international experts representing academia, biomedical journal editors, the pharmaceutical industry, government decision makers, and those in clinical practice were invited to participate. Forty-seven participants, including task force members, completed the two-round Delphi Panel. See Appendix 1 in Supplemental Materials found at <http://dx.doi.org/10.1016/j.jval.2013.02.002> for composition of the task force and Delphi Panel participants, as well as the Delphi Panel process.

The task force submitted their first draft to the ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices Task Force Review Group.

Written comments were submitted by 24 reviewers. The report was revised and re-titled Consolidated Health Economic Evaluation Reporting Standards (CHEERS) at a face-to-face meeting of the task force in May 2012. The revised CHEERS report was presented at the ISPOR 17th Annual International Meeting in Washington, DC. Oral comments were considered, the report revised again, and a final draft was submitted to ISPOR's membership for comments in January 2013.

All comments were considered by the task force and addressed as appropriate for a consensus statement and report. Collectively, the task force received a total of 179 written comments submitted by 48 ISPOR members. All written comments are published on the ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices Task Force – CHEERS webpage on the ISPOR website: <http://www.ispor.org/TaskForces/EconomicPubGuidelines.asp> that can also be accessed via the Research menu on ISPOR's home page: <http://www.ispor.org/>. Reviewers who submitted written comments are acknowledged in a separate listing on this webpage as well.

The ISPOR CHEERS Statement was endorsed and simultaneously published by 9 journals in late March 2013.

## Introduction

### Definition and Use of Health Economic Evaluation

Health economic evaluations are conducted to inform health care resource allocation decisions. *Economic evaluation* has been defined as “the comparative analysis of alternative courses of action in terms of both their costs and their consequences” [1]. All economic evaluations assess costs, but approaches to measuring and valuing the consequences of health interventions may differ (Box 1). Economic evaluations have been widely applied in health policy, including the assessment of prevention programs (such as vaccination, screening, and health promotion), diagnostics, treatment interventions (such as drugs and surgical procedures), organization of care, and rehabilitation. Structured

abstracts of published economic evaluations can be found in a number of publicly available databases, such as the Health Economic Evaluations Database (HEED) [2], the National Health Service Economic Evaluation Database (NHS EED) [3], and the Tufts Cost-Effectiveness Analysis Registry [4]. Economic evaluations are increasingly used for decision making and are an important component of health technology assessment programs internationally [5].

### Reporting Challenges and Shortcomings in Health Economic Evaluations

Compared with clinical studies that report only the consequences of an intervention, economic evaluations require more reporting space for additional items, such as resource use, costs,

#### Box 1 – Forms of economic evaluation.

Specific forms of analysis reflect different approaches to evaluating the consequences of health interventions. Health consequences may be estimated from a single analytic (experimental or nonexperimental) study, a synthesis of studies, mathematical modeling, or a combination of modeling and study information. Cost-consequences analyses examine costs and consequences, without attempting to isolate a single consequence or aggregate consequences into a single measure. In cost minimization analysis (CMA), the consequences of compared interventions are required to be equivalent and only relative costs are compared. Cost-effectiveness analysis (CEA) measures consequences in natural units, such as life-years gained, disability days avoided, or cases detected. In a variant of CEA, often called cost-utility analysis, consequences are measured in terms of preference-based measures of health, such as quality-adjusted life-years, or disability-adjusted life-years. Finally, in cost-benefit analysis, consequences are valued in monetary units [1].

Readers should be cautioned that an economic evaluation might be referred to as a “cost-effectiveness analysis” or “cost-benefit analysis” even if it does not strictly adhere to the definitions above. Multiple forms may also exist within a single evaluation. Different forms of analysis provide unique advantages or disadvantages for decision making. The Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement can be used with any form of economic evaluation.

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