Presented by the CHEERS II – ISPOR Health Economic Evaluations Publication Guidelines Good Reporting Practices Task Force
Moderator:
Michael Drummond PhD, Professor of Health Economics, University of York
York, England, UK

Speakers:
• Sophie Staniszewska, DPhil (Oxon), Professor, Health Research (Patient and
  Public Involvement (PPI) and Patient Experiences), Warwick Medical School,
  University of Warwick, Coventry, England, UK
• Don Husereau, MSc, BSc, Adjunct Professor, University of Ottawa
  Ottawa, ON, Canada
• Chris Carswell MSc, Editor, PharmacoEconomics, The Patient,
  PharmacoEconomics Open, Auckland, New Zealand

Chat Moderators:
• Nathorn Chaiyakunapruk, PharmD, PhD, Professor, Department of
  Pharmacotherapy, University of Utah College of Pharmacy, Salt Lake City, UT, USA
• Stavros Petrou, PhD, MPhil, Professor of Health Economics, Nuffield Department
  of Primary Care Health Sciences, University of Oxford, Oxford, England, UK
Michael Drummond PhD
Professor of Health Economics
University of York
York, England, UK
CHEERS Task Force Report & Checklist

Consolidated Health Economic Evaluation Reporting Standards (CHEERS) - Explanation and Elaboration

The CHEERS story so far.....

• The CHEERS checklist was endorsed by 10 major journals.
• It was recognized as a primary reporting guideline by the EQUATOR Network, alongside CONSORT, STROBE and PRISMA.
• It has been used by funding agencies (NIHR, UK), HTA agencies (CADTH, HAS) and international organizations (PAHO, EUNetHTA).
• It has been widely cited (Checklist: 673 times, Elaboration & Explanation Task Force Report: 563 times)
• Ranked # 3 most cited paper in *Value in Health* since its inception (1999)
Motivations for the update

• CHEERS perceived as being overly focused on CEA, especially cost-utility analysis
• Emergence of other checklists or methods guides (eg Second Washington Panel, other ISPOR Good Practices Task Force Reports, EUNetHTA guide on appraising economic evaluations)
• Important methodological developments in economic evaluation (including in preference measurement, concepts of value in healthcare, optimization modeling, exploring distributional effects of interventions)
• Some confusion concerning how CHEERS should be used (eg, Caulley et al. J. Clin. Epid 2020)
• Growth of patient and public involvement and engagement in health services research
This task force builds on....

the original CHEERS Task Force Report & Checklist by:

- broadening representation on the task force
- conducting a new Delphi exercise
- adding a patient & public involvement and engagement (PPIE) component
Task Force Members - 1

- **Don Husereau, MSc, BSc**, (Co-Chair), Adjunct Professor, University of Ottawa Ottawa, ON, Canada

- **Michael Drummond, PhD**, (Co-Chair) Co-Editor-in-Chief, *Value in Health*; Professor of Health Economics, Centre for Health Economics, University of York Heslington, England UK

- **Federico Augustovski MD, MSc, PhD**, Director, Health Economic Evaluation and Technology Assessment, Institute for Clinical Effectiveness and Health Policy (IECS) Professor of Public Health, Universidad de Buenos Aires, Buenos Aires, Argentina

- **Andrew H. Briggs, DPhil, MSc**, Professor of Health Economics, London School of Hygiene & Tropical Medicine, London, England, UK

- **Chris Carswell MSc**, Editor, *PharmacoEconomics*, *The Patient*, *PharmacoEconomics Open*, Auckland, New Zealand
Task Force Members - 2

- Lisa Caulley, MD, MPH, FRCSC, Assistant Professor, Otolaryngology-Head and Neck Surgery, The Ottawa Hospital, Ottawa, ON, Canada
- Nathorn Chaiyakunapruk, PharmD, PhD, Professor, Department of Pharmacotherapy, College of Pharmacy, University of Utah, Salt Lake City, UT, USA and Deputy Editor, *Value in Health Regional Issues*
- Esther de Bekker-Grob, MSc, PhD, Associate Professor, Erasmus University, Rotterdam, Netherlands
- Dan Greenberg, PhD, Senior Lecturer, Department of Health Systems Management, Faculty of Health Sciences, University of the Negev Beer-Sheva, Israel
- C. Daniel Mullins PhD, Co-Editor-in-Chief, *Value in Health*; Chair, Pharmaceutical Health Services Research, University of Maryland, Baltimore, MD, USA
Task Force Members - 3

- **Josephine Mauskopf, PhD**, Vice President of Health Economics, RTI Health Solutions, Research Triangle Park, NC, USA
- **David Moher, PhD**, Senior Scientist, Clinical Epidemiology Program, Ottawa Hospital Research Institute, Ottawa, ON, Canada
- **Stavros Petrou, PhD, MPhil**, Professor of Health Economics, Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, England, UK
- **Raoh-Fang (Jasmine) Pwu, PhD**, Director, National Hepatitis C Program Office, Ministry of Health and Welfare, Taipei, Taiwan
- **Sophie Staniszewska, DPhil (Oxon)**, Professor, Health Research (Patient and Public Involvement (PPI) and Patient Experiences), Warwick Research in Nursing, Division of Health Sciences, Warwick Medical School, University of Warwick, Coventry, England, UK and Co-Editor-in-Chief of *Research Involvement and Engagement* (Springer)
New members on the task force

- **Lisa Caulley, MD, MPH, FRCSC**, The Ottawa Hospital, Ottawa, ON, Canada
- **Nathorn Chaiyakunapruk, PharmD, PhD**, University of Utah Salt Lake City, UT, USA and Deputy Editor, *Value in Health Regional Issues*
- **Esther de Bekker-Grob, MSc, PhD**, Erasmus University, Rotterdam, Netherlands
- **Raoh-Fang (Jasmine) Pwu, PhD**, Ministry of Health and Welfare, Taipei, Taiwan
- **Sophie Staniszewska, DPhil (Oxon)**, University of Warwick Medical School, Coventry, England, UK and Co-Editor-in-Chief of *Research Involvement and Engagement* (Springer)
- **C. Daniel Mullins PhD**, University of Maryland, Baltimore, MD, USA, Co-Editor-in-Chief, *Value in Health*

Expertise in:

- ‘Journalology’ / reporting
- Health technology assessment
- Lower-middle income countries
- Benefit-cost analysis, patient preference methods
- Patient and public involvement and patient experiences
- Editing
Sophie Staniszewska, DPhil (Oxon)  
Professor of Patient and Public Involvement and Engagement,  
University of Warwick Medical School  
Coventry, England, UK
Patient and Public Involvement and Engagement (PPIE)

• Patient and public involvement and engagement (PPIE) in research has increased over the last decade.

• Patients and the public are involved in research, helping to ensure it is acceptable, relevant and appropriate and enhancing its quality.

• Wide range of impacts and outcome: for example, more relevant research questions, more appropriate study designs, patient-relevant outcomes selected, results that enhance patient benefit.
Reporting Patient & Public Involvement & Engagement (PPIE)

- PPIE has a developing evidence base to support practice.
- Past studies that included PPIE often reported it inconsistently and poorly.
- GRIPP2 (Guidance for Reporting Involvement of Patients and the Public) was developed to enhance the quality of PPI reporting.
- In developing GRIPP2, our view was that when PPIE has been included in a study, it should be reported in a way that enhances our evidence base for practice.
- In addition to GRIPP2, we are also interested in enhancing PPIE reporting in other existing guidance to strengthen PPIE reporting in specific fields, such as health economic evaluation.

Changing the conversation

• Increasing interest in PPIE in health economics

• Patients are interested in shaping the content of economic thinking, including key concepts, methods, interpretations, applications.

• Where PPIE is included in a health economic evaluation, our position is that we would like people to report it well.

• Reporting PPIE in health economic evaluation will help to develop a strong evidence base to guide best practice.
PPIE in CHEERS II

Goal: Review the CHEERS Checklist with patient & public contributors

• Established CHEERS II Patient & Public Involvement Reference Group (PPIRG)
  • Ivett Jakab, President, European Patients' Forum Youth Group, Member of Board of Trustees, EUPATI (European Patients’ Academy on Therapeutic Innovation), Health Economist, Syreon Research Institute Patient Policy Research Unit
  • Eric Low, Independent Healthcare Consultant, Eric Low Consulting
  • Jean Mossman, Healthcare Consultant and Senior Associate Director of The London School of Economics and Political Science
  • Phil Posner, PCORI and NIH Ageing Initiative: AGING Initiative’s Patient/Caregiver Advisory Council (APCAC)

• Reviewed the original CHEERS items
• Suggested edits, questioned item rationale, refined wording and meaning, added their perspectives
• Created new PPI items
• Provided feedback on the Delphi outcomes and refinements were made.
• Will report our PPIE in the development of CHEERS II
Don Husereau, MSc
Adjunct Professor
University of Ottawa
Ottawa, ON, Canada
Approach to the CHEERS update

- Revisit TF membership
- Review of new checklists / items
- Discussion of items with TF
- Draft list of new items
- Public Involvement Reference Group
- On-line Modified Delphi
- On-line Modified Delphi (2)
- Discussion of items with TF
Delphi process

• Protocol developed
• Pre-specified rules for rejection
• Assessment of disagreement
• Confidence assessed
• Two-three rounds
• Items randomized
• Representation from content experts, journal editors, payers/HTA, patients/public, and industry
Delphi process

* What is the relative importance of this item when reporting an economic evaluation?

<table>
<thead>
<tr>
<th>Not Important</th>
<th>Somewhat unimportant</th>
<th>Somewhat important</th>
<th>Very Important</th>
</tr>
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<tbody>
<tr>
<td></td>
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</table>

(Optional) Check the box below if you DO NOT FEEL confident in your rating of this item.

☐ I do not feel confident in my rating

(Optional) Do you have any comment of the wording of the description of the checklist item or rationale or why you answered the way you did?

• Rule for Rejection (1): An item will be removed if more than 70% of the members score it as < 7 on the scale.

• Rule for Rejection (2): Mean score less than 4

• A summary of the rating and feedback on each remaining item will be created and presented to panelists in the next round.

• Rule for Disagreement: If 30th – 70th inter-percentile range is greater than the inter-percentile range adjusted for symmetry (IPRAS).
Delphi participants (n=44) principal work setting
Delphi participants (n=44) region of work

- East Asia and Pacific (Oceania): 11%
- Europe and Central Asia: 27%
- Latin America & Carribbean: 16%
- Middle East and North Africa: 39%
- North America: 7%
- South Asia and Sub-Saharan Africa:
Delphi participants (n=44) years of experience in health research
Delphi Results

• No items (0/26) were rejected in the first round based on rejection rules.
  – Interpretation: All Items important or potentially important

• Two ‘possibles’ (mean score < 7)
  – Approach to, and effect of, patient and public involvement
  – However, they did score 6.5 and 6.2, respectively

• Three items with disagreement (1 on characterizing heterogeneity and 2 on patient and public involvement – approach to and effect of)
  – Most criticism from missing information or conflated concepts
Disagreement – Characterizing Population Heterogeneity

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<tr>
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<td><strong>MEDIAN</strong></td>
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<tr>
<td><strong>QRT 1</strong></td>
<td>6</td>
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<tr>
<td><strong>QRT 3</strong></td>
<td>8</td>
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<tr>
<td><strong>Disagreement</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>REJECT (C1)</strong></td>
<td>No</td>
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<tr>
<td><strong>REJECT (C2)</strong></td>
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<th>(no label)</th>
<th>(no label) SOMEWHAT UNIMPORTANT</th>
<th>(no label) IMPORTANT</th>
<th>TOTAL</th>
<th>WEIGHTED AVERAGE</th>
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<td>2%</td>
<td>5%</td>
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<td>23%</td>
<td>23%</td>
<td>23%</td>
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**ANSWER CHOICES**

- I do not feel confident in my rating: 100%
- Total Respondents: 2
### Disagreement – Approach to / Effect of Patient and Public Involvement

#### Approach to Patient and Public Involvement

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<tr>
<td>QRT 1</td>
<td>5</td>
</tr>
<tr>
<td>QRT 3</td>
<td>8</td>
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</table>

Disagreement: Yes

REJECT(C1): No

REJECT(C2): No

#### Effect of Patient and Public Involvement

<table>
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<th>Score</th>
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<td>7</td>
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<tr>
<td>QRT 1</td>
<td>5</td>
</tr>
<tr>
<td>QRT 3</td>
<td>8</td>
</tr>
</tbody>
</table>

Disagreement: Yes

REJECT(C1): No

REJECT(C2): No

Number less than 7: 20

Percentage: 45.45%
Checklist items – Other findings

• Wide range of opinions
  – Some felt CHEERS should stick to model-based CUA/QALYs.
  – Others felt the opposite – more attention to RCT-based and benefit-cost.
  – Some disliked / favored use of economic language.

• Title, abstract, and background scored low
  – Participants were asked how important each item was to help interpret the findings of an economic evaluation report.

• Some items were difficult to interpret
  – “If appropriate” and “if applicable”, “justify” were ambiguously interpreted.
  – Delphi participants advised decoupling heterogeneity / distributional effects.
Checklist items – Results and final considerations

- Many items required editing to facilitate agreement between reviewers using CHEERS as a checklist (ie, reported or not).

- Language of some items edited as were specific to modelling (parameters and distributions, modelling assumptions).

- Is a single checklist sufficient?
  - Speaks to the need for extensions (BCA, real-world etc.)

<table>
<thead>
<tr>
<th>Title</th>
<th>Outcomes - Selection</th>
<th>Characterizing Uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>Outcomes - Measurement</td>
<td>Approach to patient, public, and stakeholder involvement</td>
</tr>
<tr>
<td>Background</td>
<td>Outcomes - Valuation</td>
<td>Study parameters</td>
</tr>
<tr>
<td>Study Population</td>
<td>Measurement and valuation of resources and costs</td>
<td>Summary of main results</td>
</tr>
<tr>
<td>Setting/Location</td>
<td>Currency, price date and conversion</td>
<td>Effect of uncertainty</td>
</tr>
<tr>
<td>Study Perspective(s)</td>
<td>Rationale and Description of Model</td>
<td>Effect of patient, public and stakeholder involvement</td>
</tr>
<tr>
<td>Comparators</td>
<td>Model analytics and assumptions</td>
<td>Study findings, limitations, generalizability, and current knowledge</td>
</tr>
<tr>
<td>Time Horizon</td>
<td>Characterizing Heterogeneity</td>
<td>Source of Funding</td>
</tr>
<tr>
<td>Discount rate</td>
<td>Characterizing Distributional Effects</td>
<td>Conflicts of Interest</td>
</tr>
</tbody>
</table>
Chris Carswell MSc
Editor in Chief, *PharmacoEconomics, The Patient, PharmacoEconomics Open*, Auckland, New Zealand
Communication / Outreach of the original CHEERS

- ISPOR conference presentations and website
- Simultaneous publication in 10 journals
- Translated into local languages
- Equator Network
- Social Media
Enhancing the QUAlity and Transparency Of health Research

Consolidated Health Economic Evaluation Reporting Standards (CHEERS) Statement

Reporting guideline provided for? Economic evaluations of health interventions
(i.e., exactly what the authors state in the paper)

Full bibliographic reference


This guideline was published simultaneously in 10 journals. You can read the guideline in any of these journals using the links below.

Value Health. 2013;16(2):e1-e5. PMID: 23538200
BMJ. 2013;346:f1049. PMID: 23520982
BJOG. 2013;120(6):766-770. PMID: 23565948
CHEERS STATEMENT
@CHEERSSTATEMENT  Follows you

The Consolidated Health Economic Evaluation Reporting Standards (CHEERS) are currently endorsed by leading international biomedical journals

Ottawa  spor.org/TaskForces/Eco...  Joined May 2012

51 Following  244 Followers

Followed by Sara Pickett, Joshua Soboil, and 98 others you follow
### NIHR | National Institute for Health Research

#### Journals Library

**Consolidated Health Economics Evaluation Reporting Standards (CHEERS) Checklist**

<table>
<thead>
<tr>
<th>All</th>
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<tbody>
<tr>
<td>• Must be completed by authors of reports which contain a substantial economic evaluation or cost effectiveness component.</td>
</tr>
<tr>
<td>• Provide relevant page numbers next to each item on the checklist, however it is not necessary to indicate every single instance of an item being included in your report.</td>
</tr>
<tr>
<td>• For more information about the checklist please visit the <a href="#">CHEERS Task Force webpage</a>.</td>
</tr>
</tbody>
</table>
Imitation is the sincerest form of flattery

- Creating a healthy eating and active environment survey (CHEERS)
- The Craig Hospital Eye Evaluation Rating Scale (CHEERS)
- Chewing versus Swallowing Ticagrelor to Accelerate Platelet Inhibition in Acute Coronary Syndrome - the CHEERS study.
Reporting guidelines of health research studies are frequently used inappropriately

Lisa Caulley a, b, Ferrán Catalá-López c, d, e, Jonathan Whelan f, Michel Khoury f, Jennifer Ferraro f, Wei Cheng c, Don Husereau g, h, Douglas G. Altman i, †, David Moher j, q
Key Points of Caulley et al. regarding CHEERS

• Identified a high proportion of publications that *inappropriately* cited the PRISMA, CHEERS, and ARRIVE as methodologic guidelines.

• “Appropriate use of the reporting guidelines is a consequence of clarity of instruction in the original guideline, measures taken to further promote appropriate use *including outreach, editorial training, policy and consistency of editorial application*.”

• “Further education is needed to ensure the effective dissemination and proper understanding of the CHEERS reporting guidelines, particularly as time elapses.”
Using CHEERs as a mark of quality?


An economic analysis of high-dose imatinib, dasatinib, and nilotinib for imatinib-resistant chronic phase chronic myeloid leukemia in China: A CHEERS-compliant article


Short-Term Medical Costs of a VHA Health Information Exchange: A CHEERS-Compliant Article

Dustin D French 1, Brian E Dixon, Susan M Perkins, Laura J Myers, Michael Weiner, Allan J Zillich, David A Haggstrom

Affiliations + expand
PMID: 26765453  PMCID: PMC4718279  DOI: 10.1097/MD.0000000000002481
Free PMC article
Author Instruction Examples - Medical Journals


**Clinical Therapeutics**: To optimize the quality, consistency, and transparency of health economic and outcomes research reporting and dissemination, *Clinical Therapeutics* endorses the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement.

Authors submitting economic evaluations of pharmacotherapies and other treatment interventions for publication should consult with the CHEERS statement and follow its 24-item checklist of recommendations. https://www.elsevier.com/journals/clinical-therapeutics/0149-2918/guide-for-authors
Author Instruction Examples – HEOR Journals

Cost Effectiveness Resource Allocation and BMC Medicine
Checklists are available for a number of study designs, including:
• Randomized controlled trials (CONSORT) and protocols (SPIRIT)
• Systematic reviews and meta-analyses* (PRISMA) and protocols (PRISMA-P)
• Observational studies (STROBE)
• Case reports (CARE)
• Qualitative research (COREQ)
• Diagnostic/prognostic studies (STARD and TRIPOD)
• Economic evaluations (CHEERS)
• Pre-clinical animal studies (ARRIVE)

International Journal of Technology Assessment in Health Care
We encourage authors to follow best practices in reporting their methodology. Reporting
guidelines for many study designs, including quantitative and qualitative scholarship across
many disciplines, can be found in the EQUATOR Network.
Wording we might use / adopt to encourage use of CHEERS II

How to Endorse PRISMA

**Step 1**
Include mention of the PRISMA Statement and reference the PRISMA website in your journal's instructions to authors for reporting of systematic reviews, or in the organization's resource section.

Our suggested text to include in journal's instructions for authors is as follows:

"[journal name] requires a completed PRISMA checklist and flow diagram as a condition of submission when reporting findings from a systematic review or meta-analysis. Templates for these can be found here or on the PRISMA website which also describes several PRISMA checklist extensions for different designs and types of data beyond conventional systematic reviews evaluating randomized trials. At minimum, your article should report the content addressed by each item of the checklist. Meeting these basic reporting requirements will greatly improve the value of your review and may enhance its chances for eventual publication."
CHEERS II: Additional communication / outreach?

- Editorials
- Digital communication / other social media
- CHEERS II Task Force Report – make it clear that it is a reporting checklist / discourage ad hoc scoring schemes
- User Guides
- Formal outreach to HTA bodies to encourage use of CHEERS II?
- Website eg, PRISMA?
Polling Question

In order to encourage the widest possible dissemination and *appropriate* use of the *updated* CHEERS II Checklist, which of the following would be the most important? **Please vote for your Top 2!**

1. A users guide for researchers, peer-reviewers, and biomedical journal editors
2. A users guide for stakeholders (patients, the public, clinicians, decision makers)
3. More active engagement with journal editors and editorial societies, e.g., ICMJE (International Committee of Medical Journal Editors) and WAME (World Association of Medical Editors)
4. A CHEERS II website
Join Our Task Force Review Group!

1. Visit ISPOR home page
   www.ispor.org
2. Select “Member Groups”
3. Select “Task Forces”
4. Scroll down to Join a Task Force Review Group
5. Click button to “Join a Review Group”

You must be an ISPOR member to join a Task Force Review Group.

Task Forces

Task forces develop ISPOR’s Good Practices Reports, which are highly cited expert consensus guidance recommendations that set international standards for outcomes research and its use in healthcare decision making.

- Consolidated Health Economic Evaluation Reporting Standards (CHEERS) II
- Joint HTAI - ISPOR Deliberative Processes for HTA NEW
- Machine Learning Methods in HEOR
- Measurement Comparability Between Modes of Administration of PROMs
- Measuring Patient Preferences for Decision Making
- Performance Outcome (PerfO) Assessments
- Systematic Reviews with Cost and Cost-Effectiveness Outcomes

Join a Task Force Review Group

All ISPOR members who are knowledgeable and interested in a task force's topic may participate in a task force review group. To join a task force review group:
Discussion
Thank you

Please feel free to email any follow-up questions or comments

content - related to: taskforce@ispor.org

webinar – related to: webinars@ispor.org