
Equator WORKSHOP, Vancouver September 2009

Introduction

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Workshop goals

- **Understand the importance of transparency and accuracy in reporting health research**
- **Understand the key concepts of reporting guidelines and their use, especially by editors and peer reviewers**
- **Learn about selected reporting guidelines:**
 - CONSORT (reporting RCTs);
 - PRISMA (reporting systematic reviews and meta-analyses)
 - STROBE (reporting epidemiological studies)
- **Introduce the EQUATOR Network internet-based resource centre and training programme**
- **Discuss implementation of reporting guidelines in health research journals**



The purpose of a research article

- **Scientific manuscripts should present sufficient data so that the reader can fully evaluate the information and reach his or her own conclusions about results**
 - Assess reliability and relevance



We need research we can rely on

- **Assessment of reliability of published articles is a necessary condition for the scientific process**

[Ziman. *Reliable Knowledge*, 1978]

- **Good reporting is an essential part of good research**
- **Authors (and journals) have an obligation to ensure that research is reported adequately**
 - i.e. transparently and completely



Council of Science Editors White Paper (2006): “Promoting Integrity in Scientific Journal Publications”

Editors' responsibilities to readers:

“... evaluating all manuscripts considered for publication to **make certain that each manuscript provides the evidence readers need to evaluate the authors' conclusions** and that authors' conclusions reflect the evidence provided in the manuscript.”



What should be reported?

Methods

- **“Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify the reported results.”**
[International Committee of Medical Journal Editors]
- **Same principle should extend to all study aspects**
- **Allow repetition (in principle) if desired**

Results

- **Main findings (corresponding to pre-specified plan)**
- **Should not be misleading**



What do we mean by poor reporting?

Mainly

- **Key information is missing, incomplete or ambiguous**
 - Methods
 - Results

Also

- **Selective reporting**
- **Misleading interpretation**
- **etc**



Why is clear and transparent reporting important?

- “If reporting is inadequate—namely, information is missing, incomplete, or ambiguous—assumptions have to be made, and, as a result, important findings could be missed and not acted upon.
- Alternatively, false outcomes might be identified and used in practice.”

[Needleman et al , *J Dent Res* 2008]



Evidence of poor reporting

- **There is considerable evidence that many published articles omit vital information**
 - Hundreds of reviews of methodology of published research articles
 - Systematic reviews
- **We often cannot tell exactly how the research was done**



519 Randomised trials published in December 2000

Reporting of report key aspects of trial conduct:

27% Sample size calculation

45% Defined primary outcome(s)

40% Whether blinded

21% Method of random sequence generation

18% Method of allocation concealment

[Chan & Altman *Lancet* 2005]

**Clear improvement by 2006 but majority of articles still
omit this key information**

[Presentation at PRC by Sally Hopewell]



Impact of poor reporting

- **Cumulative published evidence is misleading**
 - Biased results
 - Methodological weaknesses may not be apparent

- **Adverse effects on**
 - Other researchers
 - Clinicians
 - Patients



Reporting vs conduct: study methods

METHODS – each aspect of the methods

	Done well	Done poorly	Not done
Fully reported (=reproducible)			
Ambiguously or incompletely reported			
Not reported			



Reporting vs conduct: results

RESULTS – for each analysis

	Exactly as pre-specified	Explicitly not pre-specified	Post hoc but not declared as such
Fully reported (= can be included in meta-analysis)			
Ambiguously or incompletely reported			
Not reported			



