Equator WORKSHOP, Vancouver
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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

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

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### Reporting vs conduct: results

#### RESULTS - for each analysis

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