Publication ethics

Author: Liz Wager; presented at the UKAEA/Euratom Fusion Association, Oxfordshire, UK, December 2006
Ethical issues in science publishing

- (Research misconduct)
- Publication misconduct
  
  unethical behaviour by authors, reviewers or editors relating to the publication of research
Outline of today's talk

- Transparency
- Responsible publication practices
- Redundant (duplicate) publication
- Ownership of data / ideas
- Reviewer & editor misconduct
- COPE
Ethic

• “(noun) the moral system or set of principles particular to a certain person, community or group, etc.”
  – Chambers 21st Century Dictionary

• Who might be hurt by this action?
The players

• Researchers / authors
• Reviewers
• Journal editors
Who (or what) could get hurt?

- Other researchers / authors
  ....but perhaps more importantly
  - Patients
  - The environment
Transparency

• Who did the work?
• Who funded the work?
• Anything else we ought to know?
Enhancing transparency

- List individuals’ contributions (avoid gift and ghost authors)
- Include funding details (& role of funder in publication)
- Declare competing interests
Contributor list

- “S&T were involved with study design and data interpretation, U performed statistical analysis, V&W collected data, T prepared the first draft, & all authors reviewed the final version”
Conflict of interest

• Exists when an author, reviewer or editor has financial or personal relationships that inappropriately influence (bias) his / her actions

• Also known as dual commitments, competing interests, competing loyalties
Committing interests

- Financial
  - e.g. share ownership / employment

- Personal
  - e.g. partners, relations involved
    (should you review a paper by your ex-wife?)

- Other
  - e.g. religious, political, ethnic
    (what do readers need to know?)
Responsible publication

- Has all or part of this study been published before?
- Have all the outcomes been reported?
- Are *post hoc* analyses identified?
## Publication bias

<table>
<thead>
<tr>
<th>Over-published (redundancy)</th>
<th>Under-published (non-publication)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistically significant findings</td>
<td>Statistically non-significant findings</td>
</tr>
<tr>
<td>Results that favour sponsor's product</td>
<td>Negative results</td>
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</table>
Why does this matter?

- Publication bias distorts the literature
- Evidence-based medicine relies on meta-analyses and systematic reviews
- Findings of meta-analyses can be skewed by duplicate data
Tramèr et al. 1997

- Impact of covert duplicate publication on meta-analysis: a case study
  - Ondansetron: number needed to treat (NNT*)

<table>
<thead>
<tr>
<th>Skewed result with duplicate data</th>
<th>4.9</th>
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<tbody>
<tr>
<td>(3 trials included twice)</td>
<td></td>
</tr>
<tr>
<td><strong>True result</strong></td>
<td>6.4</td>
</tr>
<tr>
<td>(excluding duplicates)</td>
<td></td>
</tr>
</tbody>
</table>

*A lower NNT indicates greater efficacy*
Melander et al. 2003

• Evidence b(i)ased medicine – selective reporting from studies sponsored by pharmaceutical industry
  – Review of studies in new drug applications
Publication pattern for studies of the five selective serotonin reuptake inhibitors approved in Sweden between 1989 and 1994 for treating major depression
“The pooled analyses of published data generally gave larger differences in response rate than did the estimates from all submitted studies…. The overestimates are due to selective reporting”
Conclusion

• Over- (redundant) publication or under- (selective / non) publication can give rise to misleading conclusions from meta-analyses

• These could lead to inaccurate recommendations and thus harm patients

• This type of misconduct is not easy to detect by peer review
Reducing publication bias

- Trial registration
  - Now a requirement for ICMJE journals
- Trial identifiers (e.g. ISRCTN)
Committee on Publication Ethics

Trial registration

• ICMJE member journals will require registration in a public trials registry
• Trials must register at or before onset of patient enrolment (i.e. prospectively)
• Policy applies to any trial starting enrolment after 1 July 2005 (other trials to be registered by 13 Sept 2005)
  – ICMJE statement Sept 2004
ICMJE Members

• Annals of Internal Medicine
• BMJ
• CMAJ (Canadian Medical Association Journal)
• Croatian Medical Journal
• Journal of the American Medical Association
• Journal of the Danish Medical Association

• The Lancet
• Medical Journal of Australia
• Nederlands Tijdschrift voor Geneeskunde
• New England Journal of Medicine
• New Zealand Journal of Medicine
• Norwegian Medical Journal
Trial registers

- www.clinicaltrials.gov
- ISRCTN scheme (www.controlled-trials.org)
- WHO platform (UTRN)
- www.studyresults.org (PhRMA)
Avoiding selective reporting

• Publish results of all studies
• Include all outcomes / assessments
• Distinguish primary (planned) from secondary (post hoc) analyses
• Use ‘intention to treat’ & ‘last observation carried forward’ techniques
• Publish the protocol
Plagiarism

• “to copy (ideas, passages of text, etc) from someone else's work and use them as if they were one's own”
  – Chambers 21st Century Dictionary

• “ranges from unreferenced use of others’ published and unpublished ideas … to submission under ‘new’ authorship of a complete paper”
  – COPE guidelines
Editorial responsibilities

- Declare competing interests
- Ensure that reviewer is qualified (a peer)
- Inform the editor who actually did the review (e.g. if passed onto a colleague)
- Treat material in confidence
- Take steps to avoid biased review
- Deliver courteous and timely reviews
Reviewer misconduct

- Cistron submit DNA sequence for interleukin-1 (IL-1) to *Nature*
- Paper reviewed by Gillis (Immunex): reject
- Sequence published in PNAS (corrected)
- Cistron and Immunex file patents for IL-1
- Immunex patent contains 7 errors from original (rejected) *Nature* paper
- Cistron sues Immunex ($21m settlement)
Editor misconduct

- Sir Cyril Burt, Editor *Br J Stat Psychol*
  - published 63 articles under his own name
  - altered authors’ texts without permission, often misrepresenting their intention and adding favourable references to himself
  - wrote a letter under an assumed name to the editor (himself) and a reply under another name in order to belittle the work of a rival

- Rennie 1999
COPE

• Founded 1997
• Provides ‘sounding board’ for editors
• Reviews anonymised cases
• Produces annual report

• www.publicationethics.org.uk
COPE membership

- About 300 journals / publishers including:
  - Big names (*Lancet*, *BMJ*)
  - Overseas journals (*Aust J Physio*, *Brazil J Urol*, *Chinese J Dig Dis*)
  - *Mutagenesis*, *Occup & Environ Med*
COPE resources

- Guidelines for editors
- Code of Conduct for editors
- Flowcharts (published November 06)
- Annual reports
- Website (search individual cases)
COPE flowcharts

- Redundancy
- Plagiarism
- Fabricated data
- Changes in authorship
- Undisclosed conflict of interest
- Concerns about research ethics
- Complaints against editors
Conclusions

• Publication misconduct can cause serious harm
• Authors, reviewers and editors have ethical responsibilities
• Institutions can help by training / policies
“The things that will destroy us are:
politics without principle
pleasure without conscience
wealth without work
knowledge without character
business without morality
science without humanity
and worship without sacrifice”

– Mahatma Gandhi