Fraud & malpractice in medical publishing

Author: Harvey Marcovitch; presented to the British Dental Editors’ Forum, London; November 2006
What have these in common?

- DNA content as a prognostic marker in patients with oral leukoplakia. NEJM 2001; 344: 1270-8
- Influence of resection of aneuploidy on mortality in oral leukoplakia. NEJM 2004; 350: 1405-1413
Jon Sudbø

• Dentist 1985
• Physician 1994
• Private practice
• 38 publications in peer reviewed journals
• Successful bid for $10m grant 2005
• Admitted to fraud 2006
Nature of Sudbø’s fraud

• 69 of his 150 cases should have been excluded
• Duplicated data from individual patients
• Published ages not backed up by raw data
• No REC application or approval
• No patient consent
• Lancet data ‘invented’
Research misconduct

• The editors, the president, the liar, the champagne lunch and a lost knighthood
• Hwang Woo Suk and stem cells that never were
• RB Singh and the voracious termites
And another one

• Eric Poehlman, University of Vermont
• Expert on obesity, menopause and aging
• Author and co-author of 204 papers
• So far: 10 fraudulent data; 8 retracted

• Started 1-year prison sentence last week
Publication ethics

• Honesty and integrity are essential if patients are to be protected and science validated
• Authors, editors, publishers and sponsors are all responsible
Publication ethics

- Research fraud and/or untrue data
- Selective, ambiguous or inaccurate publication
- Conflict of interest
- Plagiarism
- Overt or covert redundant publication
- Inappropriate authorship
Why does it happen?

- Journals enhance the scientific database
- and... enhance seniority and income
- and... enhance pharmaceutical companies’ profits
- and... increase publishers’ profits
Elective, ambiguous or inaccurate publication
Publication bias

- Positive trials are more likely to be submitted *(rogue authors & sponsors)*
- Positive trials are more likely to be published *(rogue editors)*
- Positive trials are more likely to be published quickly *(all three)*

Stern and Simes BMJ 1997; 315: 640-645
JAMA 2002; 287: 2825-2828
Publication bias

- Company sponsored research less likely to be published
- Company sponsored studies more likely to favour the sponsor
- Where are the negative studies?

Lexchin et al. Pharmaceutical industry sponsorship and research outcome and quality: systematic review. BMJ 2003; 326: 1167-70
Blumsohn and Proctor & Gamble

- Author of RCT on Actonel & osteoporosis
- Drug profit = $1 billion/year
- Blumsohn doubted published results
- Company refused him access to data
- University failed to support him
- Blumsohn goes to COPE and media
- Blumsohn suspended from University
Reducing publication bias

- Trial registration
- Trial identifiers (e.g. ISRCTN)
At tempted suppression of data?

• 2 authors from government body resign from authorship
• 3 senior doctors in government, regulation and academia express concern that conclusions may mislead public
• Editor imposes on remaining authors to modify paper
  – Has anybody acted ethically?
Consent issues

- Research proposal
- Ethics committee has grave doubts
- Chairman reclassifies as non-research
- Paper submitted and rejected
- Editor requests institution investigates
- Author exonerated but ethical approval should have been given
Lack of consent

- Invasive investigation of abdominal pain and constipation
- Author claims normal clinic protocol applied
- Unorthodox surgical procedure
- Institution claims normal practice
Inappropriate authorship
Inappropriate authorship

- Must have made ‘substantial contribution to conception and design of study or acquisition and / or analysis and interpretation of data’
- Must draft paper or revise critically for intellectual content
- Must give final approval to publication
Inappropriate authorship

• One or more co-authors should take public responsibility for the data
• All qualifying authors must be included
Inappropriate authorship

- Author 1 removes author 2’s name from revision
- Editor accepts author 1’s explanation
- University condemns author 1
- Author 2 demands retraction
- Lawyers threaten journal publisher
- Both authors seeking patent rights on the method described in the disputed paper
Plagiarism
Plagiarism

• ‘To copy ideas and passages of text from someone else’s work and use them as if they were one’s own’
• Unreferenced use of the ideas of others submitted as a ‘new’ paper by a different author
Plagiarism

- Epidemiological study of 30,000 patients
- Similar study published elsewhere
- Latter authors would not have resources
- Many authors geographically distant
- Medline search reveals a pattern

- Regulatory body unhelpful
Avoiding plagiarism

• Can it be accidental?
• Always reference the work of others
• Put the words of others in quotation marks
• Seek permission to copy tables, figures etc.
  – This slide by permission of Liz Wager
Committee on Publication Ethics

Redundant publication
Redundant publication

- Duplication
- ‘Salami slicing’
- NOT:
  - Previous presentation at a meeting
  - Abstract pre-publication
  - Agreed prior electronic publication
  - Translation
  - Referenced republished work
Duplicate publication

- Often revealed by reviewer or reader
- Often detected on electronic searching
- May be unknown to 1 or more quoted authors
- Second publication must be withdrawn

Committee on Publication Ethics
Why does duplication matter?

• It is dishonest
• It breaches copyright so is intellectual theft
• It distorts systematic reviews and meta-analyses
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>Unduplicated trials (16)</th>
<th>9.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duplicated trials (3)</td>
<td>3.9</td>
</tr>
<tr>
<td>Skewed result with duplicate data (i.e. 3 trials included twice)</td>
<td>4.9</td>
</tr>
<tr>
<td>True result</td>
<td>6.4</td>
</tr>
</tbody>
</table>

*A lower NNT indicates greater efficacy*
‘Salami slicing’

- Attempting to maximise publications by re-using data
- Acceptable if difference message to different readership
- Unacceptable if degree of overlap is great
Conflict of Interest
Undeclared conflict of interest

- Usually financial
- May be other industry links
- Conflicts affect conclusions
- Rates of disclosure are low
- Many journals do not have a policy
- Effect on readers unclear
Do authors declare conflicts?

- Only 52 (1.4%) declared authors' conflicts of interest

Hussain and Smith. Declaring financial competing interests: survey of five general medical journals. BMJ 2001; 323: 263-4
Are competing interests common?

- A quarter of US researchers have received pharmaceutical funding
- Half have received ‘research related gifts’
- Analysis of 789 articles from major medical journals: 1 in 3 lead authors had financial interests in their research

GMC rules on research

- Benefits outweigh risks for therapeutic
- Very low risk in non-therapeutic
- Ethical approval essential
- Consent fully informed
- Confidentiality respected
- Projects must be finished (unless risky)
- Results recorded accurately
Cases determined 2000-2005

- Breaches of protocol etc 11
- Inaccurate or false reporting 3
- Falsifying research 3
- Falsifying ethical approval 1
- Falsifying co-authors’ signatures 2
- Failing to report misconduct 1
- Diverting research funding 1
Who are the whistleblowers?

- Pharmaceutical industry 7
- An editor 2
- A ‘professional whistleblower’ 2
- Patient’s relative 2
- Ethics committee 1
- Colleague 2

NB Some assumptions have been made where information is unclear
Regulation in future

• UK panel for research integrity in health & biomedical sciences
• ‘To promote models of good practice in research governance, management and conduct’
• Members nominated by vice-chancellors, NHS CEOs, Royal Colleges etc.
• Supported by DES, DH, MRC, Wellcome
Useful sources of advice

• COPE (www.publicationethics.org.uk)
• ICMJE ‘Vancouver Group’ (www.icmje.org)
• ORI (www.ori.dhhs.gov)
• WAME (www.wame.org)
• CSE (www.CouncilScienceEditors.org)

And the journals’ advice to contributors