



# Reporting on Medical Research

Part of the HeaRT training package for health journalists,  
John Lister Summer 2012

# Why it's important to get it right

- A new treatment billed as “promising” can create false hope and expectations
- It can assist pharmaceutical companies in pressurising ministers for drugs to be made available
- But if danger signals are sounded inappropriately it can cause panic or delay access to valuable treatment
- Publicity for inappropriate and ineffective drugs can waste resources (reportage of Swine Flu in 2009)

# When experts disagree

- It's important to realise that many “breakthroughs” are controversial, and many research findings and the reports containing them turn out to be worthless
- **JAMA** rejects almost half the manuscripts before they even get to peer review because studies are seen as unsound, poorly designed or too small.
- **“Experts” can disagree**, and an expert in one field may not be a useful source of comment on another issue
- A journalist's job is NOT to “balance” reports by citing one eccentric view against a more conventional one, but to **seek and weigh the evidence** behind each position.

# The hierarchy of evidence

1. Systematic reviews and meta-analysis
2. Randomised controlled double-blind studies
3. Cohort studies
4. Case control studies
5. Case series
6. Case reports
7. Animal research
8. In vitro (test tube) research
9. Ideas, editorials, opinions

# Caveats (from bottom to top)

(from Schwitzer et al, Covering Medical Research)

- **Ideas and opinions** may or may not be based on evidence
- ***In vitro*** findings may not even work on animals
- **Animal research**: only a third are later reproduced in human trials
- **Case reports** describe cases treated by doctors but may have little wider relevance
- **Case control studies** compare people with a condition to those who don't have it: can work for rare diseases
- **Cohort studies** select people for their exposure to a health risk and follow them
- **Randomised control trials** randomly assign trial participants to a treatment or a control group receiving placebos

# Systematic reviews and meta-analysis

- These are studies of **previous studies**
- If properly and systematically done, they can give the most reliable information because they draw on the **widest range of information**
- But the quality depends on the quality of the **initial reports**
  - “The studies being reviewed are often incomplete, deficient, or skewed towards the most profitable treatments.” (Moynihan)

# Avoid confusing correlation or association with causation

- Journalistic style tends to cut to the chase and **eliminate nuances**
- Tends to suggest that **one thing leads to another**
- Can mislead
- Example in Schwitzer et al: “A 40% reduction of incident of age-related maculopathy was associated with fish consumption at least once a week” was translated wrongly by journalists to **“Eating fish may help preserve eyesight in older people”**.

# Statistical issues

- This discussion is not primarily about statistics, but clearly there are issues that health journalists need to be aware of:
- Sample size, statistical methods employed, use of relative and absolute numbers, relative and absolute risk, etc.
- A presentation on statistics by colleagues from the RSS will be given at the Coventry session, and video will be podcast.
- There are also sources and links on the USB stick



# Developing a critical approach: spotting conflicts of interest

- Can affect sources and expert commentators, but also **editors** and **news media** owners.
- **Journalists** want stories that count high in news values for their target audience
- They want **good news** on research and cures
- Happy to focus on **bad news on health systems**
- They want **simple news** (and therefore try to simplify sometimes carefully nuanced reports and findings)

# Lack of genuine independence

- **Experts** may comment on rival companies or providers while linked to other competitors.
- **Editors and news media owners** can face conflicts of interest between their role in delivering information for the wider public, while also wanting to please advertisers, sponsors, or related companies
- There are conflicts of interest for **public sector bodies** engaging in contracts shrouded in **commercial confidentiality** with private companies while in theory being committed to **transparency and engagement** with the public.

# Do we allow for calculated risk?

- Are **all** conflicts of interest unacceptable?
- Are **all** drug company-sponsored events and activities harmful and to be avoided by doctors and others? (HeaRT website partly sponsored by Pfizer!)
- Can doctors bring sufficient critical awareness to **separate** the important **information** from the **hype and spin**?
- Are **alternative sources of unbiased information** on new drugs and treatments readily available? If not, how are doctors and professionals to form views on them?

# Does peer review eliminate the problem?

- Journalists tend to defer to the authority of peer-reviewed journals
- But these may themselves be subject to external pressures equivalent to conflict of interest (drug companies etc potentially ordering reprints of articles with positive coverage, etc)
- “An editor may ... face a frighteningly stark conflict of interest: publish a trial that will bring \$100,000 of profit or meet the end-of-year budget by firing an editor.”
  - (Smith R (2005) Medical journals are an extension of the marketing arm of pharmaceutical companies. PLoS Med 2(5): e138.)

# Lancet editor Richard Horton identified 10 problems

- 1. Manipulation of research findings
- 2. **Bias toward positive findings** in sponsored studies
- 3. Undisclosed adverse data
- 4. **Hiding** negative data
- 5. **Supplement publishing:** Journal supplements often represent little more than information-laundering operations for industry. A company will sponsor a promotional meeting, and then seek to publish the papers as a non or lightly peer-reviewed supplement to an established journal, “buying, not earning, the imprint of the journal on its marketing-driven symposium”.

# Horton evidence 2004

- 6. **Undisclosed conflicts of interest:** “the continuing privatisation of much of science threatens to make independent research almost impossible to do.”
- 7. Editorial kick-backs
- 8. **Ghost-writing:** pharmaceutical companies seed the medical literature with ghostwritten editorials, reviews, and opinion pieces: a company friendly expert is then paid to have his or her name appear on the article.
- 9. **Continuing medical education:** Industry is now a major sponsor of medical "education". A former editor of the NEJM, Marcia Angell, estimates that about 60% of CME in the US is paid for by industry.
- 10. Failure to align commercial with public interests.

[www.healthnewsreview.org](http://www.healthnewsreview.org)

## Ten Criteria to judge a report

1. The **availability** of the treatment /test /product /procedure
2. Whether/how **costs** are mentioned in the story
3. If there is evidence of **disease mongering** in the story
4. Does the story seem to grasp the **quality of the evidence?**
5. How **harms** of the treatment /test /product /procedure are covered in the story

# Ten key questions

6. Does the story establish the true **novelty** of the approach?
7. How the **benefits** of the treatment /test /product /procedure are framed
8. Whether the story appeared to rely **solely or largely on a news release**
9. Is there an **independent source** and were any possible **conflicts of interests** of sources disclosed in the article?
10. Whether **alternative** treatment /test /product /procedure options are mentioned