

Correcting *our* literature is one
thing.

What about the rest of it?

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Declarations & Disclaimers

- * I've used parts of this talk before
- * Aspects of this talk have been published in an invited review
 - * Curr Opin Anaesthesiol. 2012 Dec;25(6):730-5
- * The thoughts are mine and are intended to provoke discussion
 - * They may therefore be considered controversial
 - * They are not necessarily the opinions of...
 - * My employer (RPAH)
 - * The University of Sydney or Sydney Medical School
 - * My Journal (A&IC) or anyone else working for it
 - * COPE
 - * Anyone else involved in this seminar

The 'Research Press Release'

- * Nothing new, and neither is the controversy:
 - * Winsten JA. Science and the media: the boundaries of truth. *Health Affairs* 1985; 4(1):5-23
 - * Angell M. Kassirer JP. Clinical research--what should the public believe? *NEJM* 1994; 331(3):189-90
 - * Laurance J. This is what the game is about. *Lancet* 1998; 351: 1727-28
 - * Steinbrook R. Medical journals and medical reporting. *NEJM* 2000; 342(22): 1668-71

The 'Research Press Release'

- * Why?

- * “ ‘A press release highlighting an important *Anesthesiology* article each month would help educate the public about our discoveries and potential impact on the care they receive, and help promote the specialty.’ ”

- * *Anesthesiology* 2007; 107(1):8

The 'Research Press Release'

- * Why?

- * “Publicity was good for the funding body...”

- * “... good for the employer”

- * “... good for the researcher and colleagues”

- * Laurance J. This is what the game is about. Lancet 1998; 351: 1727–28 [Health Editor for The Independent, in reply to Deary et al, same issue]

Deary's Dilemma

- * Authors had reservations about press release regarding...
 - * Whiteman MC, Deary IJ, Lee AJ, Fowkes FGR. Submissiveness and protection from coronary heart disease in the general population: Edinburgh Artery Study. *Lancet* 1997; 350: 541–45.
- * Reservations proved well founded, as discussed in...
 - * Deary IJ, Whiteman MC, Fowkes FGR. Medical research and the popular media. *Lancet* 1998; 351: 1726–27.

Deary's Dilemma

- * *Do as you're told girls . . . and live to be old*
 - * Daily Star
- * *Stay home and you'll live longer*
 - * Express
- * *Do what hubby says and you'll live longer. Professor's shock advice to women*
 - * Daily Record (Scotland)
- * *Put down that rolling pin darling, it's bad for your heart*
 - * Daily Telegraph
- * *Meekness is good for woman's heart. Quieter types healthier than feisty females says report*
 - * Daily Mail
- * *For a healthier heart, turn into a shrinking violet*
 - * Independent

The 'Research Press Release'

- * Why **not**?

- * Press criticised for:

- * Attributing unjustified certainty to new results
- * Portraying small findings as breakthroughs
- * Exaggerating risk of real/theoretical hazards
- * Exploiting patient/family/public emotions
- * Just being inaccurate

- * Winsten JA. Science and the media: the boundaries of truth. Health Affairs 1985; 4(1):5-23

The 'Research Press Release'

- * Why not blame the press?
 - * ... but in media releases...
 - * Limitations given minimal or no attention
 - * Single-source stories from biased individual scientists
 - * Reports should emphasise trends but usually don't
 - * Background for divergent views neglected
 - * Divergent views usually not even mentioned!
 - * Degrees of hazard/benefit not put into perspective
 - * Winsten JA. Science and the media: the boundaries of truth. Health Affairs 1985; 4(1):5-23

The 'Research Press Release'

- * Why **not**?

- * Woloshin S et al. Press Releases by Academic Medical Centers: Not So Academic? Ann Intern Med. 2009;150:613-618

- * Academic medical centres

- * mean of ***one press release per week per centre***

- * 44% about animal or laboratory research

- * 74% explicitly claimed relevance to human health

- * Of those about human research

- * 23% omitted study size and 34% failed to quantify results

- * Only 17% promoted studies with the strongest designs

- * 40% reported uncontrolled interventions, small samples, surrogate primary outcomes, or unpublished data

- * 58% lacked any relevant cautions about limitations etc

The 'Research Press Release'

* Why *not*?

Correcting *that* literature is essentially impossible!

‘Never work with children or animals’

- * Or the press?

- * Southall DP. BMJ’s press release inaccurate. BMJ 1993; 306(6892):1617

- * From the original:

- * “... 181 invasive procedures... 28% done without **additional analgesia or sedation...**”

- * The BMJ press release said:

- * “... 181 invasive procedures in patients..., most about a year old, ... nearly a third were performed without pain relief.”

- * The BMJ printed a 5-line apology

The 'Research Press Release'

- * Does it matter?

- * Blunt et al. Mass media release of medical research results - an analysis of antihypertensive drug prescribing in the aftermath of the calcium channel blocker scare of march 1995. J Gen Intern Med 2003; 18:84-94
- * *“A 10% decline in prescriptions filled for CCBs occurred 4 weeks following the intense media attention...”*
- * *“Intense media publicity regarding a controversial study measurably and unpredictably changed prescription claims.”*
- * *“The findings were controversial... generated many comments about the quality of reporting.”*

Some Examples

- * Difficult to illustrate the problems without examples
 - * **Not** chosen to denigrate specific individuals/groups!
 - * Some local relevance to the discussion
- * Not a random selection:
 - * This is a “convenience” sample
 - * From medicine (medical press releases are common)
 - * Mostly my own specialty as they catch my attention
 - * Probably reflect my personal biases
 - * Representative of other specialties/fields?
 - * Literature already mentioned suggests they are
 - * Commentaries about climate science reporting similar

ABC 7.30 Report 21/1/2013

* Watch the video of this report and take notes...

<http://www.abc.net.au/7.30/content/2013/s3673717.htm>

Well?

What were the messages you got from that report?

'Messages' from 7.30 Report

- * Interviews/scenes with patient and father quite balanced
 - * Father and son both mentioned concerns about risks
 - * **But...** generally very **positive** opinion conveyed by them
 - * *“pros outweighed the cons [of the drug]”*
 - * Intelligent and balanced commentary from both
- * Can the same be said of program anchor, reporter, researcher and/or politician?

'Messages' from 7.30 Report

- * *“First time... disturbing evidence... new research”*
- * *“Stunting growth... delaying puberty...”*
- * *“Overprescribed... black market”*
- * *“Noticed patients growing more slowly”*
- * *“I was seeing this effect in my patients”*
- * *“Prompted study... 65 teenagers”*
- * *“Slower to reach puberty”*
- * *“ADHD drugs do significant harm”*

'Messages' from other reports

- * Widely reported in Australian and international media
 - * Some more balanced than others
 - * Even the balanced ones contained serious errors of fact
 - * None that I found provided the full picture
- * *“A study conducted by the University of Sydney has revealed that children who are being treated with ADHD are suffering from various problems in period of puberty. Research provides very shocking results... When a teenager takes the medication of ADHD, then the repercussions are bad.”* (TopNews New Zealand)

“For the first time”?

- * Controversial and widely investigated subject for at least 30 years – reviews already appearing in 1980s
 - * Stimulants causing the observed effect?
 - * Role of the ADHD itself?
 - * **Long** discussion on the issue in the drugs’ product info
- * Results of this study?
 - * **Not** new for the (very) large part
 - * ‘New findings’ based on small subset (n=22, not 65)
 - * Very important methodological limitations
 - * Statistical analyses appear questionable
 - * Important data to support ‘findings’ not actually provided!

“Disturbing evidence”?

- * Generally considered to be a relatively minor issue
 - * When put in proper perspective
 - * Limited effect
 - * But very closely watched in patients anyway!
- * **Clinical** importance seems rather doubtful
 - * Δ height velocity in this study not statistically significant
 - * Δ Tanner stage (categorical 1 to 5!) *mean* 3.6 vs 4.0
- * Over-prescription and black market use
 - * Not new and nothing to do with this study whatsoever
 - * Same applies to opioids, antibiotics, &c, &c...
 - * Blatant sensationalism and needless scaremongering

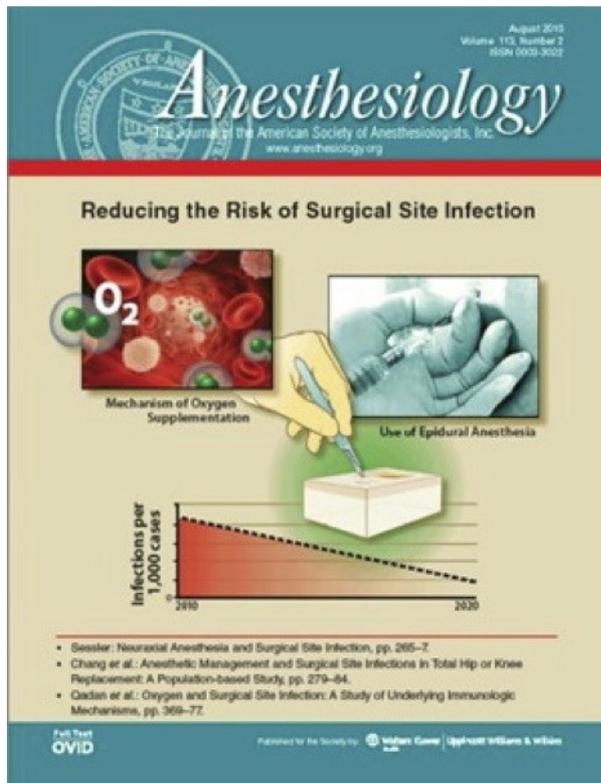
“Significant harm”?

- * Where is the harm *really* coming from?
- * The media reports!
 - * Unjustified certainty attributed to results
 - * Small finding portrayed as breakthrough
 - * Not really even novel
 - * Risk of hazards **grossly** exaggerated
 - * Patient/family/public emotions exploited
 - * Just plain inaccurate

“Significant harm”?

- * Where is the harm *really* coming from?
- * The Press Release!
 - * <http://sydney.edu.au/news/84.html?newsstoryid=10843>
 - * Study limitations given no attention whatsoever
 - * Biased, single-source story
 - * Prior research on the subject not mentioned
 - * Divergent views not mentioned
 - * Degrees of hazard not given any perspective
 - * The term “significant” used inappropriately
 - * Five times!

Informing the Press



“Study finds anesthesia type may impact whether total hip or knee replacement patients contract a surgical site infection”

Informing the Press

What We Already Know about This Topic

- ❖ Surgical site infections (SSIs) occur in nearly 5% of cases
- ❖ Epidural or spinal anesthesia, by increasing peripheral perfusion, might reduce SSIs

What This Article Tells Us That Is New

- ❖ In a retrospective review of more than 3,000 knee or hip replacement surgical patients in an administrative database, SSIs were less than half as likely if epidural or spinal anesthesia was used instead of general anesthesia

- * Anesthetic Management and Surgical Site Infections in Total Hip or Knee Replacement: A Population-based Study. *Anesthesiology* 2010; 113(2):279-284

Informing the Press

* *“An editorial appearing in the August issue regarding the study applauds the findings as compelling epidemiologic evidence that the use of neuraxial (epidural/spinal) anesthesia also reduces risk [of SSIs] ...”*

* <http://www.asahq.org/news/asanews072610pr.htm>

Informing the Press

- * Compelling because?
- * *“Among the patient and surgical characteristics available to the investigators, there were no clinically important differences.”*
- * Neuraxial Anesthesia and Surgical Site Infection[Editorial] .
Anesthesiology. 2010; 113(2):265-7

Misinforming the Press

- * Study included **no** information about:
 - * Type(s) of general anaesthesia used or why GA was chosen
 - * Surgical duration
 - * Inspired oxygen concentration
 - * Peri- or postoperative antibiotic administration/compliance
 - * Physiotherapy compliance
 - * Smoking history, ethanol use, obesity
 - * Postoperative analgesia, temperature measurement/management, blood transfusions, steroid use &c...

Misinforming the Press

Table 1. Demographic Characteristics of Patients (n = 3,081) Who Underwent Total Knee Replacement or Total Hip Replacement According to Method of Anesthesia in Taiwan, 2002–2006

Variable	General Anesthesia, n = 1,191		Epidural or Spinal Anesthesia, n = 1,890		P Value
	Total n	Column %	Total n	Column %	
Patient characteristics					< 0.001
Gender					
Male	609	51.1	512	27.1	
Female	582	48.9	1,378	72.9	



MASTERing the Media

- * *“Trial indicates epidurals can aid lung surgery”*
 - * *“Patients undergoing lung surgery benefit most from an epidural anaesthetic, according to the results of the world's largest anaesthesia trial.”*
 - * *“Researchers say doctors will now be able to offer surgery to those high risk patients suffering emphysema, heart failure and diabetes who may have been refused surgery in the past.”*
- * [Scott S. Trial indicates epidurals can aid lung surgery. ABC News \(Australia\). April 17, 2002](#)

MASTERing the Media

- * MASTER Trial:
 - * **No** lung surgery patients were included in the study
 - * Media presented with a lung surgery patient to interview
 - * Preceded by a **larger** and very similar trial in the US
 - * Similar findings as well
 - * Cited in the MASTER trial publication
 - * High risk was an inclusion criterion for the study
 - * It specifically examined *high-risk* patients having *high-risk* surgery (ie the very ones who “*may have been refused*”) but...

MASTERing the Media

- * MASTER Trial:

- * *“We found no evidence that perioperative epidural analgesia significantly influences major morbidity or mortality after major abdominal surgery.”*

- * Perioperative epidural analgesia and outcome after major abdominal surgery in high-risk patients. *Anesth Analg* 2003;96:548–54

- * Epidural anaesthesia and analgesia and outcome of major surgery: a randomised trial. *The Lancet*. 2002; 359(9314):1276-82

The Responsibility ENIGMA

- * *“Patients wake in fright after anaesthetic gas”*
 - * [Robotham J. Sydney Morning Herald. May 5, 2005](#)
 - * *“The nitrous oxide gas used in most general anaesthetics is unsafe and should be discontinued, say Australian doctors...”*
 - * *“... the new study... spelled ‘the end of nitrous oxide’ in general anaesthesia, he said.”*
 - * *“ ‘If we eliminate nitrous oxide from the equation there will be a lot fewer people feeling very sick’ ”*
- * Led to widespread patient and physician concern...

The Responsibility ENIGMA

- * ... and the “Nitrous Oxide Statement”
 - * Professional Responsibility - In Science and In Journalism.
Melbourne: Australian and New Zealand College of Anaesthetists; 2005
 - * *“We expected that professionalism in journalism would handle the early findings of the study, and our comments, with care - in view of their preliminary nature...”*
 - * *“We were therefore dismayed to read that we had recommended the discontinuation of use of this drug.”*
 - * *“Journalists must avoid sensationalism and anxiety for patients, prior to publication of the full study in a recognised journal...”*

The Responsibility ENIGMA

- * The ENIGMA trial

- * Avoidance of Nitrous Oxide for Patients Undergoing Major Surgery: A Randomized Controlled Trial. *Anesthesiology*. 2007; 107(2):221-31
- * “ ‘... I think its time has probably come to retire’ ”
 - * [lead author on National TV]
 - * [Johnson N. Research raises concerns about anaesthetic gas. 7:30 Report. July 25, 2007](#)
- * “ ‘The continued use of nitrous oxide may have had its day in patients having major surgery.’ ”
 - * [co-author quoted]
 - * [Catalano C. Study blackballs anaesthetic gas. The Age. July 26, 2007](#)

The Pittsburgh Paradox

- * World-wide media reports associating commonly used anaesthetic agents with Alzheimer's disease in 2006-7
 - * Mainly resulted from a [UPMC media release](#) and subsequent lead author interviews
 - * “ ‘It is a seriously deadly combination when an older person receives halothane.’ ”
 - * [quote from lead author]
 - * Phillips H. Alzheimer's alert over anaesthetics. *New Scientist*. Oct 28, 2006; 192.2575:12(1)
- * Seriously badmouthed my favourite anaesthetics!
 - * “ ‘The main focus should now be using an anaesthetic that does not have any undesirable and deadly effects.’ ”

Release the Hounds!

- * “Deadly effects”?
- * Close scrutiny of two biochemical publications
 - * Serious errors of both biochemical and clinical fact
 - * Including incorrect chemical name/structure of anaesthetics
 - * Despite having very senior anesthesiologist as a coauthor
 - * Obvious flaws in methodology
 - * Inappropriate analysis and conclusions
 - * Some apparent plagiarism and duplication
- * Detailed email to the journals concerned...

The Pittsburg Paradox

- * Led to retraction of both papers
 - * Not for the wholesale errors of fact and methodology
 - * Not for the apparent plagiarism/duplication of text
- * But for “misrepresentation” of the data
- * The earlier paper is still available on journal’s website
 - * No indication it’s been retracted (still being cited!)
 - * The retraction notice was published as an “erratum”
 - * Behind the journal’s paywall!
 - * Contains no searchable text
 - * Only a page image of the authors’ letter of retraction
 - * NLM only knows it’s a retraction because I told them

The Pittsburg Paradox

- * But the horse has bolted!
 - * Multiple reports about the papers still available online
 - * Mainstream news media pages
 - * Commentary citing the papers in blogs &c
 - * No mention anywhere that the papers were retracted for “misrepresentation” of the data
 - * No serious possibility of correction
 - * Press release taken down from UPMC website quite quickly
 - * Still exists, verbatim, on other websites (ScienceDaily.com)
- * The last word...?

Not Quite Last

- * *“We deplore paywalls for retraction notices and urge journals that issue press releases when papers come out to do the same when that article is later retracted.”*
- * [Marcus A & Oransky I. Happy anniversary, Retraction Watch: What we’ve learned, and what’s in store for year two. retractionwatch.wordpress.com \(2011\)](#)

The Last Word goes to Winsten

- * *“There is a need for more joint social science and journalistic research on the impact of information from the consumer’s point of view.”*
 - * [but in the meantime...]

“First, it is time to call a halt to the current public relations assault.”

- * Winsten JA. Science and the media: the boundaries of truth. Health Affairs 1985; 4(1):5-23