



Registered charity 1003392

Established 1991

HealthWatch

for science and integrity in medicine

Newsletter 101 Spring 2016

STILLBIRTH: WHAT POLITICIANS AND THE MEDIA FAIL TO UNDERSTAND

A report by Catherine Williams, lay advocate for maternity services

LOOKING AT some news items about maternity care in recent months, I have wondered whether government policy initiatives in maternity are intended to be evidence-based, and whether the press can be persuaded to be more evidence-aware. Unfortunately, ‘Babies harmed!’ makes a more dramatic headline than ‘Giving birth in this country is safer than ever,’ and ‘There are some evidence-based things, mostly not needing technology, that we can now do to ensure high quality, respectful care for all women’, which is arguably the overarching message of the Better Births² report published by the National Maternity Review.

On 10 June 2015 Jeremy Hunt tweeted: “Shocking that 1300 babies killed or harmed during childbirth last year: we must go further&faster to make the NHS the safest system globally”.

To be clear, stillbirth or the birth of an injured baby is a tragic event, and no-one would seek to suggest otherwise. It is, of course, important to try to find out what causes such events and to work to reduce avoidable harm to the absolute minimum. It is also important that public health information is clear and accurate.

Jeremy Hunt @Jeremy_Hunt . 10 Jun 2015

Shocking that 1300 babies killed or harmed during childbirth last year: we must go further&faster to make the NHS the safest system globally

The Minister’s comment followed an article in The Times that day³ reporting that “the annual bill for NHS negligence in pregnancy has reached 31 billion after more than 1,300 babies were killed or maimed last year.” The NHS Litigation Authority report Ten Years of Maternity Claims⁴ is useful background reading here. I am struck by the fact that that report, in referring to claims relating to use of ‘CTG’ (electronic monitoring of both fetal heart rate and uterine contractions in labour, which involves interpreting trace showing these features), says nothing about the evidence base for this technology, a screening test with high sensitivity but low specificity. A NICE panel (of which I was a member) recently noted, “At present, the evidence base for use of CTG by itself to monitor high risk labours is not strong”⁵; “current practice assumes CTG has greater accuracy than the evidence demonstrates”⁶ and, “the reliability of interpretation of CTG recordings, both between different users and when carried out by the same person [has] been shown to be variable (section 10.9)”⁷.

Put simply, while CG190 recommends the use of CTG in labours at higher risk of complications, “the best available evidence to guide interpretation of CTG is limited”⁸ and assumptions about the certainty of what is ‘proved’ by many such traces—viewed, necessarily, retrospectively even as the trace is made—are arguably unwise. (Law and science—it seems to me—are not quite the same thing.)

What the press, and perhaps politicians, consistently fail to understand is this:

- the stillbirth rate is a curve that is high at 24-27 weeks, falls to 37-41 weeks, and rises again from approximately 42 completed weeks of gestation^{9,10}
- the overall stillbirth rate (24 weeks onwards) is 4.2 per 1000,¹¹ of which 1 in 3 deaths occur at term¹²—so 1.4 per 1000 births¹³
- the rate of intrapartum stillbirth (i.e. during labour) for all births 24 weeks onwards is 0.37 per 1000 births (timing is unknown in a further 0.21 per 1000).¹⁴

In most cases of stillbirth (86%), the baby has died before labour begins.¹⁵ It is important to distinguish between stillbirth pre-term and at term: the causes may well be different, and the messages we give to women at term about ‘risk’ matter (in simple terms, whether a woman is frightened or not may affect how labour unfolds—oxytocin, the birth hormone, is secreted more readily when the woman is relaxed and not fearful).

It is estimated that complications of labour are the cause in 1 in 12 cases of stillbirth—this includes all stillbirths at or later than 24 weeks.¹⁶ Fetal surveillance in labour, and intervention, may make a difference to the rate of intrapartum stillbirths; in some—but not all—of these labours CTG is in use (complications can occur in a labour not identified as being, or having become, at higher risk of complications, and the labour may still be ‘low risk’ when a baby is, sadly, born dead). Similarly, surveillance and intervention may

... continued on page 6

Contents

PUBLIC HEALTH	<i>Stillbirth: the facts that politicians and the media fail to understand, by Catherine Williams</i>	1, 6
NEWS	<i>Farewell to Andrew Herxheimer; 2016 debate news; the end of the line for the Saatchi Bill; and News in Brief</i>	2
MEDIA	<i>Barbara Rowlands explains how CAM became the “thing” of the 1990s</i>	3, 5
PUBLICATION ETHICS	<i>Brian Earp on an insidious tactic for the promotion of misinformation in the scientific literature</i>	4, 5
CiBeT?	<i>How Popeye was right about spinach, and everyone else got it wrong: mythbusting by Mike Sutton</i>	7
LETTER TO THE EDITOR	<i>James May responds on science and religion</i>	8

A PHARMACOLOGIST WHO SPOKE UP FOR PATIENTS

ANDREW HERXHEIMER died on 21st February 2016, just a few days after celebrating his 90th birthday party. He had been an extremely valuable member of the HealthWatch Committee during our charity's early years, and later kept frequently in touch to pass on ideas for the newsletter, or just to share something that had tickled his impish sense of humour.

Andrew's career began as a clinical pharmacology and therapeutics lecturer. In 1962 he found the influential Drug and Therapeutics Bulletin as a way to give doctors impartial information on medicines, and edited it for 30 years. He helped establish the Cochrane Collaboration. He worked towards plain English leaflets in medicine packs. He was passionate about the need for drugmakers to take into account adverse effects of medication on patients. In his

70's Andrew co-founded the database of individual patient experience now called healthtalk.org, where patients can listen to other patients talking about their illness. Five million visited last year.

Praise for his achievements, and many fond memories, are shared in his many obituaries, including those in *The BMJ* (16 Mar), *The Guardian* (25 Mar), *The Times* (7 Apr), *The Pharmaceutical Journal* (15 Mar), healthtalk.org, Edzard Ernst's blog, and Cochrane UK.

Saatchi's Bill passed, but stripped almost bare

THE ACCESS to Medical Treatments (Innovation) Bill passed through its final stages in March and received Royal Assent. The Private Members Bill, introduced to the House of Commons last year by Conservative MP Chris Heaton-Harris, initially borrowed large sections of text directly from Lord Maurice Saatchi's Medical Innovation Bill. As it progressed, it was stripped of the negligence provisions in the Saatchi Bill, and what remains merely gives the Secretary of State provision to establish a database at some future date: a power that already existed without new legislation.

Facing strong opposition to the plans, Heaton-Harris tabled an amendment to remove clauses 3 and 4 from the Bill, which would have created a 'quack's charter' and changed the law, removing accountability for true negligence.

With these particularly controversial clauses removed, the Bill passed to the House of Lords. Organisations including the Association of Medical Research Charities (AMRC) remained opposed to the flawed proposals that remained. No information was provided in relation to the proposed operation of any database, the recording of outcomes, its function alongside and conflict with existing regimes, what would qualify for inclusion, who could access the data, how patient confidentiality, or safety, would be protected, or any other detail. Wales did not provide legislative consent. Nevertheless, no amendments were proposed in the House of Lords, and the comparatively empty Bill passed into law.

The Access to Medical Treatments (Innovation) Act exists to confer a power on the Secretary of State to establish a database with the Health and Social Care Information Centre (HSCIC). It bears no resemblance to the Medical Innovation Bill, which did not include a database, and contains no true provisions of its own. The power conferred to the Secretary of State already exists under section 254 of the Health and Social Care Act 2012.

It is fortunate that all likeness to the Saatchi Bill was finally removed, and the resulting Act as no practical effect. Yet it is perhaps unfortunate that the opportunity to examine through consultation, evidence, and input from medical and research communities was not used more wisely to ask what resources, infrastructure, or assistance would benefit professionals and their patients.

Sofia Hart, HealthWatch Student Representative

HealthWatch debate 23rd May will be a bun fight

THE SWEETEST news around is that this year's HealthWatch debate has seized another hot topic and some brilliant speakers.

This year we're delighted to welcome back our patron the evidence-based comedian Robin Ince as chairman, while our experts debate the motion "This house believes sugar is harmful so all sugary foods should be taxed, not just soft drinks".

Our distinguished speakers will be the cardiologist and writer Dr

Aseem Malhotra, Prof Richard Tiffin (Reading University), Dr Carwyn Rhys Hooper (St Georges, University of London) and our own Dr David Bender. Attendance is free. To guarantee your place register at: <https://www.eventbrite.co.uk/e/the-healthwatch-debate-2016-sugar-and-tax-tickets-25031524965?aff=es2>

Starts 6.30pm on Monday 23 May at King's College London, Franklin-Wilkins Building, Waterloo Campus, London SE1 9EH.

NEWS IN BRIEF

PRESSURE IS mounting on the Charity Commission to review the status of charities accused of promoting unproven theories or treatments, for example, those that oppose vaccination for childhood diseases. Tax breaks come with charitable status, but to qualify, a group must be able to provide evidence of public benefit. In an interview with the *Sunday Times*, HealthWatch committee member Les Rose said he had identified several charities that cannot meet the public benefit test.

Sunday Times, 20 Mar 2016

http://www.thesundaytimes.co.uk/sto/news/uk_news/Health/article1680068.ece#

INTEGRATIVE MEDICINE is an ill-conceived concept and largely about the promotion and use of unproven or disproven

therapies, argues Edzard Ernst in the *Medical Journal of Australia*. It conflicts, he writes, with the principles of both evidence-based medicine and medical ethics. Our Australian allies, Friends of Science in Medicine (www.scienceinmedicine.org.au), endorse his comments. *Ernst E. Med J Aust 2016;204 (5):174*

ACUPUNCTURE should not be offered for treating low back pain and sciatica as it is no better than placebo, says the latest draft guidance report from NICE. It goes on to say that enough studies have been done to conclude that further research is unlikely to alter their recommendations.

Low back pain and sciatica, NICE draft consultation, Feb 2016
<https://www.nice.org.uk/guidance/GID-CGWAVE0681/documents/draft-guideline>

CLOTHES FOR THE EMPEROR: HOW CAM SEDUCED THE 90s CONSUMER

THEY ARE EXPENSIVE, unproven and occasionally dangerous—and yet consumers happily spend billions on complementary and alternative medicine and therapies (CAM), few of which have undergone rigorous scientific testing. The total UK annual spend on these treatments is £4.5 billion¹ and between 2011-2016 the number of people using CAM treatments was predicted to have grown by 60 per cent, and the number of CAM practitioners—currently 40,000—by 30 per cent.²

The fact that these therapies can cause numerous adverse events from mild skin reactions and gastrointestinal disturbances to stroke (chiropractic), severe bleeding (acupuncture) and liver failure (herbal medicine)³ seems not to matter a jot. Like hardened smokers, many people ignore the message, down sugar pills, boil up Chinese herbs and submit themselves to the couch to have their soles of their feet massaged, their muscles needled, hands pressed on (or hovered over) them and their guts ‘cleansed’.

I, dear reader, am partly to blame. I wrote the Which? Guide to Complementary Medicine,³ Alternative Answers to Asthma & Allergies⁴ and wrote liberally in the nationals about herbal supplements and every therapy from the popular (acupuncture) to the bizarre (the Metamorphic Technique).

Why? This was the question at the heart of my PhD thesis, *The Emperor’s New Clothes: Media Representations of Complementary and Alternative Medicine: 1990-2005*, which I completed last year. When I revisited my journalism on this subject—the first time in some years—I was concerned by what, at first, appeared to be a lack of rigour. There have been a number of books⁵ published recently, of which *Trick or Treatment* (2008) by Singh and Ernst, is probably the best known, that have questioned why, as a nation, we spend millions on such therapies when there is little or no scientific evidence to back up the claims of their practitioners.

What I had forgotten was the specific time during which I generated this work—the mid 1990s. While evidence was growing that CAM was not completely harmless, there was a small body of evidence that some therapies might be beneficial. There were a number of trials in Western peer-reviewed journals that demonstrated that (for instance) people with osteoarthritis of the knee, asthma and nausea gained relief from acupuncture. A meta-analysis in the *British Medical Journal* showed that extract of hypericum (St John’s Wort) was more effective than placebo for the treatment of mild to moderate depression.⁶

MORE SIGNIFICANT, however, was a powerful combination of cultural, political and sociological changes and movements that combined to make CAM not just popular, but fashionable. It had moved from being labelled as ‘fringe medicine’ (the title of one of the first books on the subject by journalist Brian Inglis) to ‘alternative’ (Alternative Therapy was the title of the British Medical Association Board of Science’s 1986 report) to ‘complementary medicine’ (the title of the BMA’s conciliatory 1993 report).

Then there was a growing disillusionment with conventional medicine, especially in the wake of two high profile medical scandals. Between 30 and 35 babies died unnecessarily at the Bristol Royal Infirmary between 1990 and 1995 and at Alder Hey Children’s Hospital, Liverpool, organs and body parts from around 850 children were discovered between 1988 and 1995 in 2,000 clinical pots.

Empowered consumers, which studies show were well educated, well-paid middle-aged women (usually), suffering from poorer self-reported health, rejected what they saw as medical paternalism in

pursuit of ‘optimum health’ and ‘well-being’. It was the profile of a typical broadsheet Baby Boomer newspaper reader and CAM was their boutique religion.

Indeed journalist John Diamond (HealthWatch Awardwinner 2000), who died of cancer in 2001 and who wrote about the delusions of CAM, made the interesting point that CAM was at its most popular at the height of Thatcherism and fitted perfectly into the Thatcherite cult of the individual. “It was where the fading hippiedom of the early Seventies was able to meet the new materialism of the Thatcherites head-on,” he said.⁷

When it came to sourcing CAM, credibility was my main challenge. Who should I trust? Who or what was a credible source? I used five groups of sources: the ‘sceptics’—academics and/or physicians who were conducting research or had an academic interest in the field; the ‘dispassionate observers’—academics, researchers, such as toxicologists and health-care professionals, whose patients were treated with CAM therapies; the ‘believers’—heads of CAM organisations and the practitioners they recommended; ‘witnesses’—those people who had experienced a particular therapy or therapies and who journalists refer to as ‘case histories’ and a fifth hybrid category—the ‘sceptical believers’.

This last group were powerful ‘elite’ sources. Many were medically qualified and included heads of university centres of complementary medicine, which offered undergraduate and postgraduate degrees in CAM; members of the House of Lords Select Committee on Science and Technology, which produced a report on CAM in November 2000,⁸ and heads of homeopathic hospitals and CAM health centres.

It was the sceptical believers of whom I was most wary. Medically-qualified CAM practitioners, working in respected institutions, they wrapped a cloak of credibility around CAM, underpinning it with the ‘legitimacy’ of science. Dunwoody and Ryan argue that scientists “are believable when they stay within their data and interpret those data properly. They are not to be believed when they go beyond their data or otherwise misuse them”.⁹

In its 1986 report, the BMA dismissed CAM as “passing fashions”, yet it flourished in the late twentieth and early twenty-first centuries, buoyed up on a tide of consumerism, new ways of thinking about the body and the self, and a dissatisfaction with biomedicine. This sense of entitlement, and money with which to indulge it, allowed CAM to proliferate and, like a virus, to change and strengthen. A simple Nexus search shows that the number of stories on CAM from 1985-90 was 16 in broadsheet newspapers and 16 in tabloid newspapers. In 2000-2005 the figures were respectively 556 and 127. From January to July 2010-2014, the figures were 220 and 38.

Yet there was something else at work in the frenzy of CAM coverage. Were book publishers, editors and journalists dazzled by its potential, succumbing to group pressure from an overwhelming majority, including highly-placed sources? Just like the subjects of Hans Christian Anderson’s vain and naked emperor, were we ignoring the evidence in front of our eyes?

... continued on page 5

THE UNBEARABLE ASYMMETRY OF BULLSHIT

In this piece, Brian Earp discusses the problem of plausible-sounding bullshit in science, and describes one particularly insidious method for producing it. Because, he says, it takes so much more energy to refute bullshit than it does to create it, and because the result can be so damaging to the integrity of empirical research as well as to the policies that are based upon such research, Earp suggests that addressing this issue should be a high priority for publication ethics

SCIENCE and medicine have done a lot for the world. Diseases have been eradicated, rockets have been sent to the moon, and convincing, causal explanations have been given for a whole range of formerly inscrutable phenomena. Notwithstanding recent concerns about sloppy research, small sample sizes, and challenges in replicating major findings¹⁻³—concerns I share and which I have written about at length⁴⁻¹⁰—I still believe that the scientific method is the best available tool for getting at empirical truth.¹¹ Or to put it a slightly different way (if I may paraphrase Winston Churchill’s famous remark about democracy): it is perhaps the worst tool, except for all the rest.

In other words, science is flawed. And scientists are people too. While it is true that most scientists—at least the ones I know and work with—are hell-bent on getting things right, they are not therefore immune from human foibles. If they want to keep their jobs, at least, they must contend with a perverse ‘publish or perish’ incentive structure that tends to reward flashy findings and high-volume ‘productivity’ over painstaking, reliable research.¹² On top of that, they have reputations to defend, egos to protect, and grants to pursue. They get tired. They get overwhelmed. They don’t always check their references, or even read what they cite.¹³ They have cognitive and emotional limitations, not to mention biases, like everyone else.¹⁴⁻¹⁶

At the same time, as the psychologist Gary Marcus has recently put it,¹⁷ “it is facile to dismiss science itself. The most careful scientists, and the best science journalists, realize that all science is provisional. There will always be things that we haven’t figured out yet, and even some that we get wrong.” But science is not just about conclusions, he argues, which are occasionally (or even frequently)¹ incorrect. Instead, “It’s about a methodology for investigation, which includes, at its core, a relentless drive towards questioning that which came before.” You can both “love science,” he concludes, “and question it.”

I agree with Marcus. In fact, I agree with him so much that I would like to go a step further: if you love science, you had better question it, and question it well, so it can live up to its potential.

And it is with that in mind that I bring up the subject of bullshit.

There is a veritable truckload of bullshit in science.¹⁸ When I say bullshit, I mean arguments, data, publications, or even the official policies of scientific organizations that give every impression of being perfectly reasonable—of being well-supported by the highest quality of evidence, and so forth—but which don’t hold up when you scrutinize the details. Bullshit has the veneer of truth-like plausibility. It looks good. It sounds right. But when you get right down to it, it stinks.

There are many ways to produce scientific bullshit.¹⁸ One way is to assert that something has been ‘proven’, ‘shown’, or ‘found’, and then cite, in support of this assertion, a study that has actually been heavily critiqued (fairly and in good faith, let us say, although that is not always the case, as we soon shall see) without acknowledging any of the published criticisms of the study or otherwise grappling with its inherent limitations.¹⁹

Another way is to refer to evidence as being of ‘high quality’ simply because it comes from an in-principle relatively strong study design, like a randomized control trial, without checking the specific materials that were used in the study to confirm that they were fit for purpose.²⁰ There is also the problem of taking data that were generated in one environment and applying them to a completely different environment (without showing, or in some cases even

attempting to show, that the two environments are analogous in the right way).²¹ There are other examples I have explored in other contexts,¹⁸ and many of them are fairly well-known.

BUT THERE is one example I have only recently come across, and of which I have not yet seen any serious discussion. I am referring to a certain sustained, long-term publication strategy, apparently deliberately carried out (although motivations can be hard to pin down), that results in a stupefying, and in my view dangerous, paper-pile of scientific bullshit. It can be hard to detect, at first, with an untrained eye—you have to know your specific area of research extremely well to begin to see it—but once you do catch on, it becomes impossible to un-see.

I don’t know what to call this insidious tactic (although I will describe it in just a moment). But I can identify its end result, which I suspect researchers of every stripe will be able to recognize from their own sub-disciplines: it is the hyper-partisan and polarized,²²⁻²³ but by all outward appearances, dispassionate and objective, ‘systematic review’ of a controversial subject.

To explain how this tactic works, I am going to make up a hypothetical researcher who engages in it, and walk you through his ‘process’, step by step. Let’s call this hypothetical researcher Lord Voldemort. While everything I am about to say is based on actual events, and on the real-life behavior of actual researchers, I will not be citing any specific cases (to avoid the drama). Moreover, we should be very careful not to confuse Lord Voldemort for any particular individual. He is an amalgam of researchers who do this; he is fictional.

In this story, Lord Voldemort is a prolific proponent of a certain controversial medical procedure, call it X, which many have argued is both risky and unethical. It is unclear whether Lord Voldemort has a financial stake in

“I suspect researchers of every stripe will be able to recognize it—the hyper-partisan and polarized, but by all outward appearances, dispassionate and objective, ‘systematic review’ of a controversial subject.”

researchers who do this; he is fictional. In this story, Lord Voldemort is a prolific proponent of a certain controversial medical procedure, call it X, which many have argued is both risky and unethical. It is unclear whether Lord Voldemort has a financial stake in X, or some other potential conflict of interest. But in any event he is free to press his own opinion. The problem is that Lord Voldemort doesn’t play fair. In fact, he is so intent on defending this hypothetical intervention that he will stop at nothing to flood the literature with arguments and data that appear to weigh decisively in its favor.

As the first step in his long-term strategy, he scans various scholarly databases. If he sees any report of an empirical study that does not put X in an unmitigatedly positive light, he dashes off a letter-to-the-editor attacking the report on whatever imaginable grounds. Sometimes he makes a fair point—after all, most studies do have limitations (see above)—but often what he raises is a quibble, couched in the language of an exposé.

These letters are not typically peer-reviewed (which is not to say that peer review is an especially effective quality control mechanism);²⁴⁻²⁵ instead, in most cases, they get a cursory once-over by an editor who is not a specialist in the area. Since journals tend to print the letters they receive unless they are clearly incoherent or in some way obviously out of line (and since Lord Voldemort has mastered

* There is a lot of non-bullshit in science, too!

the art of using ‘objective’ sounding scientific rhetoric²⁶ to mask objectively weak arguments and data), they end up becoming a part of the published record with every appearance of being legitimate critiques.

The subterfuge does not end there.

The next step is for our anti-hero to write a ‘systematic review’ at the end of the year (or, really, whenever he gets around to it). In it, He Who Shall Not Be Named predictably rejects all of the studies that do not support his position as being ‘fatally flawed,’ or as having been ‘refuted by experts’—namely, by himself and his close collaborators, typically citing their own contestable critiques—while at the same time he fails to find any flaws whatsoever in studies that make his pet procedure seem on balance beneficial.

The result of this artful exercise is a heavily skewed benefit-to-risk ratio in favor of X, which can now be cited by unsuspecting third-parties. Unless you know what Lord Voldemort is up to, that is, you won’t notice that the math has been rigged.

SO WHY doesn’t somebody put a stop to all this? As a matter of fact, many have tried. More than once, the Lord Voldemorts of the world have been called out for their underhanded tactics, typically in the ‘author reply’ pieces rebutting their initial attacks. But rarely are these ripostes—constrained as they are by conventionally minuscule word limits, and buried as they are in some corner of the Internet—noticed, much less cited in the wider literature. Certainly, they are far less visible than the ‘systematic reviews’ churned out by Lord Voldemort and his ilk, which constitute a sort of ‘Gish Gallop’ that can be hard to defeat.

The term ‘Gish Gallop’ is a useful one to know. It was coined by the science educator Eugenie Scott in the 1990s to describe the

debating strategy of one Duane Gish.²⁷ Gish was an American biochemist turned Young Earth creationist, who often invited mainstream evolutionary scientists to spar with him in public venues. In its original context, it meant to “spew forth torrents of error that the evolutionist hasn’t a prayer of refuting in the format of a debate.” It also referred to Gish’s apparent tendency to simply ignore objections raised by his opponents.

A similar phenomenon can play out in debates in medicine. In the case of Lord Voldemort, the trick is to unleash so many fallacies, misrepresentations of evidence, and other misleading or erroneous statements—at such a pace, and with such little regard for the norms of careful scholarship and/or charitable academic discourse—that your opponents, who do, perhaps, feel bound by such norms, and who have better things to do with their time than to write rebuttals to each of your papers, face a dilemma. Either they can ignore you, or they can put their own research priorities on hold to try to combat the worst of your offenses.

It’s a lose-lose situation. Ignore you, and you win by default. Engage you, and you win like the pig in the proverb who enjoys hanging out in the mud.

As the programmer Alberto Brandolini is reputed to have said:²⁸ “The amount of energy necessary to refute bullshit is an order of magnitude bigger than to produce it.” This is the unbearable asymmetry of bullshit I mentioned in my title, and it poses a serious problem for research integrity. Developing a strategy for overcoming it, I suggest, should be a top priority for publication ethics.

*Brian D Earp
Visiting Scholar, The Hastings Center Bioethics Research
Institute (Garrison, NY),
and Research Associate, University of Oxford*

A fully referenced version of this article is at https://www.healthwatch-uk.org/images/Newsletters/Number_101_BE.pdf

A modified version of this essay was published in the online magazine *Quillette* on February 15, 2016. Please note that the article as it appears here (and on the HealthWatch website) is the ‘original’ (i.e., the final and definitive version), and should therefore be referred to in case of any discrepancies. Please cite as: Earp BD. The unbearable asymmetry of bullshit. HealthWatch Newsletter 2016;101:4-5.

The author thanks Morgan Firestein and Diane O’Leary for feedback on an earlier draft of this manuscript.

Clothes for the emperor: how CAM seduced the 90s consumer

... continued from page 3

I believe in some parts of the media there was an element of that. Nevertheless, as journalists writing for broadsheet newspapers and reputable publishers, we researched the therapies carefully and endeavoured to serve our audiences with the best evidence we could find. CAM was newsworthy because it was relevant, unambiguous and close to the demographic culture of the mid-market and broadsheet newspapers.

Now, however, CAM is neither new, nor unexpected and is fragmenting into more evidence-based modalities, such as herbal medicine and acupuncture, a large pool of unproven but vaguely sensible sounding therapies, such as aromatherapy and hypnotherapy, and an increasingly silly fringe, such as distance healing and angel therapy.

The journalistic spotlight has moved on, and many journalists, like myself, are unsurprised by the mounting evidence that CAM does not bear too much scrutiny. For a story to be published, there has to be a fresh angle—and there are few here.

Does it matter that CAM is getting less coverage in national

newspapers today? For a journalist it may seem a pointless endeavour, as negative trial results seem to have little effect on the decisions made by people buying complementary and alternative treatments, who appear to lend more weight to anecdotal rather than scientific evidence.¹⁰

However, I would argue that CAM needs continual, not occasional, revisiting in the media. Among the potpourri of modalities, there needs to be a delineation of what may be effective and has achieved some degree of acceptance by mainstream medicine (acupuncture, clinical hypnotherapy, some herbal medicine, massage therapy) and what fails to work or can be dangerous. Audiences should be reminded continually that charlatans, peddling their products, ill-informed or dangerous advice and bizarre diagnostic techniques, can flourish in an unregulated billion pound industry.

*Barbara Rowlands PhD
Associate Professor in Journalism, City University London*

The full list of references for this article can be found at https://www.healthwatch-uk.org/images/Newsletters/Number_101_refs.pdf

Stillbirth: what politicians and the media fail to understand

...continued from front page

make a difference to the rate of neonatal deaths (i.e. in the first 28 days after birth), currently 1.8 per 1000 live births.¹⁷ The difficulty is not knowing in advance, or retrospectively, in which labours surveillance by midwives or obstetricians might make, or did make, a difference.

Considering disability, only a very small proportion of cerebral palsy cases are caused by events during birth, and it is thought that at least 90% have an antepartum cause.¹⁸

It is in this context that Jeremy Hunt announced his plan to halve stillbirths and deaths among new-born babies by 20% by 2020, and by 50% by 2030, with the Department of Health¹⁹ announcing:

“... a £2.24 million fund [will] help trusts to buy monitoring or training equipment to improve safety, such as cardiotocography (CTG) equipment to monitor babies’ heartbeat and quickly detect problems, or training mannequins that staff can practise emergency procedures on.”

This prompted leading maternity activist Mary Newburn (formerly Head of Research at NCT) to respond:

“Jeremy Hunt ... is strong on rhetoric but weak on detail. Evidence that ‘digital equipment’ saves lives is limited, so let’s not kid ourselves and get caught up in a technology race.”²⁰

She referred to the variation in clinical outcomes in maternity care across NHS trusts that is not explained by population differences, and added:

“Clinical leadership from doctors and midwives; effective multi-disciplinary team working, including joint training; effective communication—both between staff and staff with service users; plus psychosocial support for women provided by continuity of midwifery care are all important, but not a quick fix. Look up the evidence (including the Cochrane review on ‘midwife-led-continuity-models’, by Sandall et al) and use it!”

BETTER BIRTHS has now made evidence-based recommendations on the points that Mary mentions, and more, though at time of going to press with this article I, like many others, have not yet had time to read all seven evidence reports on which the main report is based (one needs time to appraise and reflect). A comment beneath the Maternity Review publication notice²¹ makes a key point:

“This all sounds wonderful—but says nothing that all those working in maternity services don’t already know and hasn’t been said before in previous maternity reviews. What this report doesn’t explain is how this is going to be achieved when finances are continuously being cut (in all areas of the NHS) and whether the review will be upheld and taken seriously by the powers that be.”

But what has funding already been given for? In general, more equipment, with a focus on use of CTG, in both the Sign up to Safety campaign endorsed by the NHS Litigation Authority²² and the preventing avoidable harm in maternity care Department of Health capital fund scheme 2015 to 2016.²³

But remember, in 86% of stillbirths, the baby has died before labour begins. So where might attention be focused to make a difference in these cases? In an extraordinary moment of speaking truth to power, a group of epidemiologists, researchers and others, including the Royal College of Obstetricians and Gynaecologists, wrote to *The Guardian* last November that public health is the key

to cutting stillbirths:

“...[the] proposed ‘maternity safety champions’ and the provision of ‘high-tech digital equipment’ offer no solution for the majority of stillbirths, which occur before labour. Most preventable stillbirths in the UK are attributable to social factors that are shaped by poverty, deprivation, and income inequality: cigarette smoking, obesity, diabetes, alcohol use—with stillbirths being twice as common among mothers living in England’s poorest 10% of regions than the richest 10%. Resolving such a disparity is undeniably challenging; but even small improvements to population health far outweigh any ‘one-by-one’ approach ... if the UK government wants any real hope of halving the stillbirth rate by 2030, it would do better to reverse the proposed cuts to public health funding—which provides vital services, such as stop-smoking programmes—and increase efforts to address the social factors that cause ill-health from the very start of life.”²⁴

What of the quality of maternity care generally? Indisputably there are improvements that need to be made—though among informed commentators there is agreement that services are safer than they have ever been (see for example the Better Births report on the significant improvement in quality and outcomes over the last decade²⁵)—in order to achieve the WHO’s preferred definition of quality, which includes women’s experience and woman-centred care, effective, efficient, equitable, timely and safe care.²⁶

Some very simple measures to promote such quality of care could be based on current NICE guidance: for example, the CG190 Quality Standard for care of healthy women in labour and birth, summarised by Mary Newburn.²⁷

Commissioners have a duty (a ‘best practice’ obligation, and a somewhat ambiguous one²⁸) to take NICE recommendations into account in maternity service specifications. It will be interesting to see how soon commissioning can be effective in changing clinical practice at local level, and whether commissioners will cooperate effectively with local authorities to take public health measures that can reduce the stillbirth rate—indeed, whether they understand that they need to. Equally interesting to see whether, in time, press reporting about maternity becomes more evidence-aware, and national policy initiatives more evidence-based. The introduction to the newly published Saving Babies’ Lives care bundle from NHS England (p8—implement, and gather evidence en route²⁹) might be encouraging or discouraging, depending on your point of view.

Catherine Williams

Catherine Williams served as a lay member on the NICE CG190 Guideline Development Group; undertakes freelance auditing work for NHS England; is a member of the panel of lay co-assessors for the ROCG invited reviews service; has been appointed a NICE Fellow 2016-19, with effect from 1st April 2016. The views expressed here are personal and not attributable to any organisation with which Catherine is associated.

The full list of references for this article can be found at https://www.healthwatch-uk.org/images/Newsletters/Number_101_refs.pdf

How the spinach, Popeye and iron decimal point error myth was finally bust

CIBeT? (Can It Be True?) was the name coined by past HealthWatch chairman Professor John Garrow for an occasional series in this newsletter, in which an expert scrutinised popular myths. Who better to revive it, than supermythbuster Mike Sutton, who reveals the history of the legend of why spinach made Popeye so strong—and why Popeye was right all along, but not in the way we thought ...

ONE OF THE MOST complex and convoluted myths in the world of nutrition is the one called, for want of a less complex name, the ‘Spinach, Popeye and Iron Decimal Point Error Myth’. I discovered that the myth was started by the nutrition expert, Professor Arnold Bender (the late father of HealthWatch Secretary David Bender) in his inaugural lecture at the University of London in 1972.¹

The myth, once begun, was long popularised and eventually came to be attributed to Professor Terence Hamblin, after he wrote in the *British Medical Journal*² in 1981:

“A statue of Popeye in Crystal City, Texas, commemorates the fact that singlehandedly he raised the consumption of Spinach by 33%. America was ‘strong to the finish ‘cos they ate their spinach’ and duly defeated the Hun. Unfortunately the propaganda was fraudulent; German chemists reinvestigating the iron content of Spinach had shown in the 1930s that the original workers had put the decimal point in the wrong place and made a tenfold overestimate of its value. Spinach is no better for you than cabbage, Brussels sprouts, or broccoli. For a better source of iron Popeye would have been better off chewing the cans.”

Hamblin was wrong. In reality, Popeye’s creator EC Segar never once had his superhero eat spinach for iron.

In 1932, in the only cartoon by Segar where Popeye explains exactly why he eats the stuff, the cartoon sailor with the bulging forearms claims in his garbled English: “Spinach is full of Vitamin A. An’ tha’s what makes hoomans strong an’ helty”. In fact, spinach contains beta-carotene, which is converted to vitamin A in the human body. And Popeye is as right today with his dietary advice as he was in the last century, eating spinach is a good way to get Vitamin A.

MOREOVER, whilst spinach production did rise by 33 percent in Texas in 1936, there are many possible causes for that. In that year the first two reel colour movie Popeye the Sailor v Sinbad the Sailor was released. And it was hugely popular—being either posted alongside or above as the main feature at cinemas in the USA. But, also in 1936, President Roosevelt introduced his ‘New Deal for Farmers’, which contained the Soil Conservation Act, which discouraged soil-eroding farming practices such as growing wheat and rice, or raising cattle, and promoted the growing of non-soil eroding crops such as spinach. This may have had some impact. In 1936, the USA also introduced the Agricultural Adjustment Act to control the supply of seven basic crops (not including spinach). That might also have led to more supply of spinach as farmers were encouraged to grow more diverse crops of that kind.

The decimal error story is also a myth because the true iron content of spinach was measured by Bunge in 1892,³ and earlier erroneously high measures—such as those made by von Wolff in 1871⁴—were explained in the USA by Professor Sherman in 1907⁵ as resulting from iron contamination from heating dishes and other bad science. In 1920’s Germany, however, the widely read experts Noorden and Salomon, in their popular German textbook,⁶ continued to cite the poor 19th century science of von Wolff as though it

was veracious.

The truth behind Bender’s and Hamblin’s decimal error knowledge gap filling myth for why people think spinach is a good source of iron when it isn’t, is that spinach contains no more iron than many other vegetables, such as lettuce for example. The fact of the matter is that spinach is not a good source of nutritional iron, because it contains oxalic acid, which is an iron blocker.

Amazingly, due to the iron blocking effects of oxalic acid in spinach, within the human body, current scientific knowledge tells us that we can absorb no more than 1 mg of the 6.6 mg of iron that

is at most likely to be found in a standard 13.5 oz can of spinach. This means that if no other source of iron is available, a man aged 19-50 would in fact need to eat at least eight cans of spinach every day to get his required level of iron, a woman of the same age would need to eat 18 cans, and a pregnant woman would need to consume a nauseating 27,

which—at 10 oz of solid matter per can when drained—is well over a stone (14 lb) of the stuff!

The scandal of the Spinach Supermyth is not the decimal error myth started by Bender and spread by Hamblin. Rather, it is that people continue to make poor dietary choices based on the belief that spinach is a good source of iron. If only we could discover what the interactive ingredients and contexts are for the enduring success of the Spinach, Popeye and Iron Decimal Point Error Myth, we could reverse engineer the myth and seek to apply the lessons learned from that with an aim to entrench veracious knowledge about nutrition and other information.

Dr Mike Sutton (Criminologist)

Department of Social Sciences, Nottingham Trent University

Personal website: <http://supermyths.com/>

References

1. Bender A. The Wider Knowledge of Nutrition. Inaugural Lecture. October 24, Queen Elizabeth College, University of London. Somerset: Castle Cary Press Ltd, 1972
2. Hamblin TJ Fake! BMJ 1981;283:1671-1674
3. Bunge G von. Textbook of Physiological and Pathological Chemistry, 2nd English edn transl. Starling E and Starling F. London: Kegan Paul, 1902
4. Wolff ET von. Aschen-Analysen von Landwirtschaftlichen Producten Fabrik—Abfällen und Wildwachsenden Pflanzen. Berlin: Wiegand & Hempel, 1871
5. Sherman HC Iron in Food and Its Functions in Nutrition. Office of Experimental Stations Bulletin. May 25 1907;185:56
6. Noorden C and Salomon H. Handbuch Der Ernährungslehre Erster Band Allgemeine Diätetik. Berlin, Julius Springer, 1920

Footnote: David Bender tells us that his father, in the inaugural lecture referred to above, attributed the iron story to a Dutch nutritionist, Professor Cornelius den Hartog, now many years deceased. Maybe another story-within-a-story will have passed away with him...

Science, religion, and fields of knowledge

FRANK ODDS JUSTIFIABLY questioned the relevance of my article on Religion and Scepticism in the Autumn issue of the *HealthWatch Newsletter*. “Most concerning of all is May’s assertion that ‘science is not the only field of knowledge’. One is used to hearing that religious belief is somehow a different form of knowledge... but history, law, politics and economics!?” He suggests that only in as much as they draw from science can they justify this claim.

Our 2015 Awardwinner Mark Porter observed in this newsletter (Winter issue, 2015), “As we bow to the altar of evidence-based medicine, sometimes we’re blinded by the light.”¹

Science is the physical study of the natural world and is characterized by reproducibility and clarity, in the technical sense of being clear to the expert. The question of whether psychology and social science are truly science in this sense is not a question for now. However, the humanities, whose subject is human experience are not therefore relegated to some post-modern ‘construction’.

The claim that ‘science is the only field of knowledge’ is philosophical and not scientific, which therefore unintentionally supports the opposite view that other forms of knowledge are indeed real.

Science itself is not immune to post-modern critiques. To allow that science is knowledge whilst denying the same status to history, for example, is to forget that scientific knowledge is largely a collection of memories and documentary evidence of past empirical events, and so is also a subset of historical knowledge. In addition, the predictive power of science for future events is not empirically based, but depends on the philosophical assumption of induction.²

Rather it seems to me to be helpful to refute the excesses of post-modern ‘scepticism’ by insisting that human beings are capable of pursuing true knowledge in all areas of life. Miguel de Cervantes writes of historical knowledge, “It should be the duty of historians to be exact, truthful, and dispassionate, and neither interest nor fear nor rancor nor affection should swerve them from the path of truth, whose mother is history, rival of time, depository of deeds, witness of the past, exemplar and adviser to the present, and the future’s counselor.”³

Indeed Cervantes picks up another area of knowledge which science should be subject to⁴ and which is pertinent to the work of HealthWatch—ethical knowledge. Scientists too have the duty of

pursuing the truth.

Of all sciences, medicine is the one in which knowledge of the humanities, has most obvious and most extensive applications. In ‘Being Mortal’ the Harvard surgeon Atul Gawande concludes, “I never expected that among the most meaningful experiences I’d have as a doctor—and, really, as a human being—would come from helping others deal with what medicine cannot do as well as what it can.”⁵

It seems to me that Professor Odds’ concern is misplaced. Science is not the only field of knowledge, nor even the most important. The suggestion that it might be recalls Aldous Huxley’s dystopian ‘Brave New World’. Instead, scientific knowledge is an immensely powerful servant of the greater aims and objectives we have in our lives which are better understood by the humanities than by science. HealthWatch seeks to promote evidence-based medicine, not as an end in itself, but for other greater ends which human beings value, and as such it is helpful and therefore relevant to reflect on what these might be.

James May
Chairman, HealthWatch

References

1. Hart S. Why evidence matters to Dr Mark Porter. *HealthWatch Newsletter* 2015;100(Spring):1
2. May J, Baum M, and Bewley S. Plato’s Socratic dialogues and the epistemology of modern medicine. *J R Soc Med* 2010;103(12):484–489
3. Cervantes M. *Don Quixote*. Part one, chapter 9, page 66. Guild Publishing, London, 1982
4. Scientists ‘should take ethics oath like doctors’. *The Times*, 22nd February 2016. <http://www.thetimes.co.uk/tto/science/article4696061.ece>
5. Gawande A. *Being Mortal: Medicine and What Matters in the End*, page 260. Penguin, 2014

Published by HealthWatch

www.healthwatch-uk.org

President: Nick Ross
Chairman: James May
Vice-Chairman: Debra Bick
Secretary: David Bender
Treasurer: Anne Raikes
Newsletter Editor: Mandy Payne

Committee: Susan Bewley, Diana Brahams, Malcolm Brahams, Alan Henness, Keith Isaacson, John Illman, John Kirwan, Les Rose; Kenneth Chan is Trainee Doctor Representative; Andrew Fulton, Sofia Hart, Ruth Lamb and Jolene Galbraith are Student Representatives; James Illman and Tom Moberly are Medical Journalist Representatives.

Press enquiries please use contact form at <https://www.healthwatch-uk.org/about/contact/1-media.html> or e-mail enquiries@healthwatch-uk.org

Opinions expressed in letters and articles published in the HealthWatch Newsletter belong to the authors and do not necessarily reflect the views of HealthWatch. Authors are responsible for the factual accuracy of their own articles; the editor reserves the right to amend text if necessary but will, where possible, consult the author to ensure accuracy is maintained.

Unless otherwise indicated, all web addresses referenced in this issue were accessed on or after 21st April 2016.

Letters and articles for publication are welcomed and should be sent to the Editor at: newsletter@healthwatch-uk.org For our requirements please see <https://www.healthwatch-uk.org/newsletter/information-for-authors.html>

HealthWatch is the charity that has been standing up for science and integrity in medicine since 1991

We promote:

1. The assessment and testing of all medical and nutritional treatments, products and procedures
2. Consumer protection in regard to all forms of health care
3. The highest standards of education and evidence-based health care by practitioners
4. Better understanding by the public and the media of the importance of application of evidence from robust clinical trials

We challenge and expose misleading advertising of health products, the sale of unproven remedies to the vulnerable and desperate, unethical marketing by pharmaceutical companies, misconduct in clinical trials, media misinformation on health and nutrition, and government promotion of health and screening programmes unsupported by evidence.

HealthWatch welcomes membership enquiries from those who share its aims. Join at <https://www.healthwatch-uk.org/about/join-healthwatch.html>



Registered Charity No 1003392
Established 1991

Patrons:
Robin Ince
Professor Steve Jones FRS
Dr Margaret McCartney
Sir Michael Rawlins
Lord Dick Taverne QC