



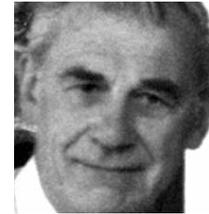
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Newsletter 69 April 2008

PEER REVIEW AND THE ADVANCEMENT OF SCIENCE



DR TERENCE KEALEY, Vice Chancellor of the University of Buckingham, has a highly eccentric view of scientists, and of their fellow-scientists who review the research papers submitted for publication in scientific medical journals. In an opinion piece in the *Daily Telegraph* (19th February 2008) he claims that peer review is supposed to combat fraud, but can just as easily hold back radical discoveries. I disagree.

Do not look in general journals (such as the *New England Journal of Medicine*, *Lancet*, *BMJ* or *JAMA*) for “radical discoveries”: that is the field in which specialist journals flourish. The editor will (or should) require authors of the paper, and also the reviewers, to declare any conflict of interest. The methods the authors used must be described so clearly that a critical reader can replicate the study. This is the type of journal where the claim of a “radical discovery” is most likely to be made, and where it is most likely to be demolished. Editors do not reject papers because they are contrary to received wisdom: quite the reverse! But if a study, although technically apparently sound, reaches an amazing result the editor will publish the paper, but may add an editorial highlighting the need for replication of the study.

My experience of editing and refereeing medical scientific papers is incompatible with Dr Kealey’s assertions for five reasons.

First, the purpose of peer review is not primarily to combat fraud, and it is not very successful when it tries to do so. Fraudsters are usually unmasked by critics who show that the study cannot be replicated. The reason might be fraud, or (more probably) bad technique or wrong calculation of the data, but for whichever reason it damages the reputation of the researcher, who will have to be extra careful to be correct in future.

Second, reviewers are not unduly impressed by a prestigious name among the authors, nor do editors routinely reject papers by an “unknown”. Some journals send out anonymous copy for review to avoid this bias, but this proves counter-productive: the reviewer often wastes time trying to identify the authors rather than concentrating on the quality of the text.

Third: “The myth is that science is the noble search for truth. The reality is that scientists are selfish.” Does that mean more selfish than the Olympic athlete determined to win? Or the vice-chancellor desperate for better funding for his university? I do not think so. I cannot think of any employment in which rewards are so closely related to ability, honesty and hard work than that of a research scientist.

Fourth: “Sometimes, trusting what scientists tell us can be difficult”. This opening statement is followed by examples of difficult-to-trust advice—such as to use/avoid artificial sweeteners, or to drink/avoid coffee. I need to be sure that such sentiments were being expressed by a scientist. Of course the media tell us that the “latest research” reveals something, which is made even more exciting if the next day they can report that the reverse is true. What scientists (by my definition) say is, “This is the experiment we did, and exactly how we did it. The results we obtained seem to imply that artificial sweeteners/coffee is good/bad for you.” I have no difficulty believing this kind of statement unless, or until, a greater weight of experimental evidence points in a different direction.

Fifth: “But peer review carries dangers. First it allows dunderheads to block unexpected ideas ... such as Barbara McClintock who won the Nobel Prize in 1983 ...”. How many other examples are there of dunderhead activity? And anyway, was Barbara really so badly treated?

Barbara McClintock was born in 1902 and died in 1992. Cornell gave her a PhD in botany in 1927, and by 1931 she had published three substantial papers in distinguished journals (two of them with herself as sole author) *Genetics* and *PNAS*. Most of us would think that was quite good progress for a 29 year-old female in 1931. So the dunderheads seem on this occasion to have recognised a good “unknown” scientist rather quickly.

Can Dr Kealey find reviewers behaving as obstructive dunderheads these days? Or is he just being “controversial” to promote sales of his new book?

John Garrow
Emeritus Professor of Human Nutrition
University of London

Reference

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SCREENING “HALVES BREAST CANCER DEATHS”: CLAIM QUESTIONED

RESULTS OF a study claiming that routine breast screening halved death rates in East Anglia have been questioned by top breast cancer surgeon Michael Baum.

The *Eastern Daily Press* reported on 10th January that, according to a Cancer Research UK study published two days earlier in the *British Journal of Cancer*, screening in East Anglia has reduced the number of deaths from breast cancer there by 48%. But Michael Baum has told HealthWatch, “The paper in the *British Journal of Cancer* is seriously flawed.”

The study, reports the *EDP*, was the first of a series of investigations into the success of the national screening programme. It compared the screening histories of 300 women in East Anglia who died of breast cancer, with 600 women of the same age still alive. There were fewer deaths from breast cancer than were predicted after trials conducted before the full programme was put into place in 1989. The *EDP* report included enthusiastic quotes from Professor Stephen Duffy, lead researcher and Cancer Research UK’s professor of cancer screening, and Julietta Patnick, director of NHS Cancer Screening Programmes.

The critic, Professor Baum, is emeritus professor of surgery at University College London and was in fact a pioneer of breast screening and cancer treatment and in 1988 set up the UK’s first ever breast cancer screening centre under the aegis of the NHS Breast Screening Programme (NHSBSP). However he is critical of misinformation that overstates the benefits and underplays the risks of screening. He explains, “Fifty-eight of the cancers amongst the ‘cases’ in this study were what is known as interval cancers, that is, they appeared between one screen and the next. It is accepted that interval cancers are ‘bad’ cancers with faster growth rates and poorer prognoses. This is a serious flaw in the researchers’ logic because it ignores the fact the screening is good at detecting ‘good’, or less dangerous, cancers. This fact is conceded by the authors;

‘Our estimated benefit may be slightly biased by the selection of recently diagnosed cases (1995-2004) which will of necessity be relatively rapidly fatal’. You bet! Interval cancers, 58% of the total, are rapidly fatal and by definition no intensity of mammographic screening can get rid of interval cancers.”

He continues, “The authors also accept that the design is prone to ‘self-selection bias’, in which women who accept the invitation to screening may have better health status than those who do not. They then claim that this bias can be corrected by a formula based on another study, yet this other study is also based on a number of assumptions. *Viz*; ‘An adjustment was made for this using the relative rate of breast cancer deaths in non-attenders in the randomized trials compared to the trial controls.’ However, that data set applies to an era before the widespread adoption of adjuvant systemic therapy.”

Breast Cancer Screening: A Cruel Deception? was the title of Professor Baum’s speech in accepting the 2002 HealthWatch Award (see *HealthWatch Newsletter* 48, January 2003). A report of a Festschrift held at University College London recently to honour his work appears on page 3.

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news in brief

THE ONLINE forum for HealthWatch members is now live and can be accessed on <http://healthwatch.informe.com/forum/> (or via the HealthWatch website <http://www.healthwatch-uk.org> by clicking on the “members’ forum” button on the left of the screen). There are notes there to help you to register for the forum, read what has already been posted, reply to what has been posted or create a new topic. “I hope that we can use the forum to stimulate debate and discussion between HealthWatch members,” said David Bender, HealthWatch chairman, who will personally monitor the forum, and ensure that any inappropriate material will be removed. Offending authors may be banned from the forum.

PRESSURE is growing on the government to withdraw NHS funding from homeopathy. An e-petition on the 10 Downing Street website asks the Prime Minister to immediately ban NHS funding of homeopathy and redirect the resources toward proven medicine. The petition is open until 21st August 2008. See <http://petitions.pm.gov.uk/anti-homeopathy/>

HEALTH TESTS for the “worried well” can actually be harmful, warn scientists and GP’s in a new booklet. Despite the explosion in marketing of scans and check-ups to healthy people, most tests weren’t designed for well people and are not researched or adequately regulated. *Making Sense of Testing* is published by Sense

About Science with the Association of Clinical Biochemistry, the PHG Foundation and the Royal College of Pathologists. GP contributor Dr Andrew Green advises, “If you don’t have symptoms, then very few tests are worthwhile, and those that are can be had through your doctor.” The 16-page booklet is free and can be ordered or downloaded online at: <http://www.senseaboutscience.org.uk/index.php/site/project/232/>

MEMBERS OF HealthWatch are reminded that the subscription rates increased this year and a note may be enclosed with this newsletter asking that members who pay by cheque should kindly pay before June in order to maintain their subscription, and members who pay by standing order to amend it if they have not already done so. The new rates appear with the membership details in the box on page 8 of this issue.

SCIENTIST, WRITER and HealthWatch committee member Les Rose has started his own online blog on critical thinking, science and scepticism. It kicked off on 2nd March with his commentary on an extraordinary example of irrational argument and misinformation: a speech by Ivan Lewis (Parliamentary Under-Secretary, Department of Health) given in parliament on 19th February. Bookmark it: <http://majikthyse.wordpress.com/>

CANCER POSITION PAPER NOW ONLINE

CANCER IS becoming more common, but death rates are falling, and the reasons are explained in a detailed and authoritative new briefing paper specially prepared for HealthWatch. This latest position paper, *Cancer*, is now available in pdf format to view or download from the HealthWatch website.

The paper has been meticulously researched and written by Drs Leo and Susan Horton. Both recently retired from posts in the NHS, he as head of the Dept of Pathology at the Royal Berks Hospital, and she as a consultant Radiologist. Between them they have extensive experience of methods for diagnosis and treatment of many types of cancer. The paper covers incidence, causes and development of cancer, its treatment, screening and prevention and will be an essential reference paper for researchers, journalists and writers. An excerpt has been adapted to appear below.

There were 2,845,560 cases of cancer diagnosed in the UK in 2004. Four sites: breast (18%), lung (13%), bowel/colorectal (13%) and prostate (12%) account for over half all new cases. The number of cancer deaths, 153,497 in the UK in 2005, was second only to deaths from heart and blood vessel disease. Cancer is more common than it used to be because people live longer: cancer becomes commoner with increasing age. However, the standardised mortality rates (SMR, expressed as cases per 100,000 population) for all cancers fell by over 17% between 1975 and 2005 from 218 to 180 per 100,000 population despite an increase in incidence from just under 300 to over 350 per 100,000.

The commonest cancer in men is lung (16%), followed by

prostate (24%) and colorectum (14%), out of 143,126 male cancers in the UK in 2004. While the outlook for lung cancer is poor, many older men harbour prostatic cancer that never causes any problems. In women the commonest cancers are those of the breast (31%) and lung (11%) and then, as in men, the large intestine and rectum (12%) of a total of 141,434 cases.

The frequency of different cancers and the standard mortality rate has changed over the years differently for different tumours. The incidence of lung cancer initially increased rapidly over the last fifty years in both sexes due to the increase in cigarette smoking, but as this has declined in men so has the number of lung cancers. The standard mortality has halved over 30 years (107 per 100,000 deaths in 1971 and 53 in 2005). In women there has been no such fall in smoking habits and the incidence of lung cancer continued to rise until very recently. The SMR increased by 66% in the late 1980s and has not changed since then. This reflects the increase in smoking among younger women, which has not been offset by a decrease in mortality in those over 60.

View or download the paper in pdf format from the HealthWatch website on: <http://www.healthwatch-uk.org/position%20paper%20cancer.pdf>

Festschrift honours Michael Baum

WHAT IS a festschrift? Answer: a very rare event that demonstrates an exceptional measure of affection and respect for a distinguished colleague.

My invitation to the Festschrift organised by UCL to honour Mike Baum was the first time I had even come across the term. It was held at the Wellcome Trust in Euston Road, London WC1 on 28th November 2007. The many tributes and talks provided a kind of "This is Your Life" by speakers whose names read like an excerpt from the Medical *Who's Who*, many of whom had travelled long distances to stand at the lectern and deliver their tributes in person.

As the Festschrift proceedings made clear, Mike is a gifted professor of surgery, who has devoted his career to the research and treatment of breast cancer and who, unusually, notwithstanding his academic and professional success, retains humility and has an endearing warmth and kindness of manner. He is also an excellent

speaker and I think it was a pity he was not invited to respond from the platform.

Mike Baum is a founder member of HealthWatch (originally called Quackbusters) and treasures among his very impressive array of prizes and medals the silver engraved dish presented to him by HealthWatch for his work in presenting accurate health information to doctors, media and public, often at personal cost. He champions evidence-based treatments and bluntly opposes unproven "natural" complementary therapies—including some of those backed by Prince Charles.

*Diana Brahams
Barrister*

Old Square Chambers, Gray's Inn, London

New face on the committee

A HIGHLY RESPECTED clinician and researcher has joined the HealthWatch Committee. Susan Bewley is a consultant obstetrician in maternal-fetal medicine at Guy's & St Thomas' NHS Foundation Trust.

As Director of Obstetrics and Clinical Director at this busy inner-city teaching hospital she helped shape and lead what has become one of the country's most highly regarded maternity units. During the last 15 years she has been responsible for setting up many innovative services, for example, personal bereavement, perinatal mental health and routine enquiry and domestic violence advocacy. Susan has been an expert advisor to government, NHS and independent reviews of maternity services, and chaired the RCOG

Ethics Committee 2004-7. Her research centres around severe maternal morbidity and she has authored over 200 publications including many influential reviews and has edited three books.

"I have always been a 'critical friend' of HealthWatch, devoted to the cause of rational, empathic and evidence-based medicine, but I'm ready to make the move from the armchair to action," she said.



THE EVIDENCE FOR HOMEOPATHY

There is evidence associated with homeopathy, but how reliable is it? David Bender has made a detailed and objective examination of the research review which is held up by the Society of Homeopaths as support for claims of efficacy. He found that conclusions reported by the SoH are not always supported by the research from which they are drawn



IN A RADIO broadcast on December 1st 2007, Jayne Thomas of the Society of Homeopaths mentioned a review of papers in peer reviewed journals that support the efficacy of homeopathy. She has provided HealthWatch with a copy of the review, produced by the European Network for Homeopathy Researchers (ENHR) in November 2006. This document includes a number of individual papers and, more usefully, a number of meta-analyses and systematic reviews of published papers. For each review paper cited in the ENHR document, I have placed the statement from the document in a shadowed box, followed by notes of what the original paper said. I have kept to the order in which the ENHR document cites the reviews.

ENHR review states:

Results were found in favour of homeopathy in 20 of 22 systematic reviews on the effect of homeopathic high-potencies on cells or living organisms. For upper respiratory tract infections and allergies six out of seven studies were in favour of homeopathy. The authors of this article concluded that the effectiveness of homeopathy can be supported by clinical evidence and treatment is safe.¹

The original research states: "... investigations of pre-clinical basic research proved homeopathic high-potencies inducing regulative and specific changes in cells or living organisms. 20 of 22 systematic reviews detected *at least a trend* in favour of homeopathy. *In our estimation* 5 studies yielded results *indicating* clear evidence for homeopathic therapy." The emphasis in italics is mine. This is less positive than the statement made in the ENHR document.

"The evaluation of 29 studies in the domain 'Upper Respiratory Tract Infections/Allergic Reactions' showed a positive overall result in favour of homeopathy. Six out of seven controlled studies were *at least equivalent* to conventional medical interventions" (my italics). This is rather different from saying that six out of seven studies were in favour of homeopathy, and anyway there are few effective conventional interventions for upper respiratory tract infections. "Eight out of 16 placebo-controlled studies were significant in favour of homeopathy". Presumably the other eight were not.

The original research says, "Applied properly, classical homeopathy has few side-effects and the use of high-potencies is free of toxic effects. A general health-economic statement about homeopathy cannot be made from the available data." Does this mean that the authors do not conclude that homeopathy is effective, or do they mean that they cannot estimate cost-effectiveness?

ENHR review states:

In a review of homeopathy research the authors found three independent systematic reviews of placebo-controlled trials on homeopathy that reported effects that seem to be more than placebo, and one review that found its effects consistent with placebo.²

The original paper lists six systematic reviews of clinical trials of homeopathy, making the following comments about each in turn:

- "Available evidence is positive but not sufficient to draw definitive conclusions."
- "Results not compatible with the hypothesis that all homeopathy is placebo. No firm evidence for any single condition."
- "Available evidence suggests effects over placebo. Evidence not convincing because of shortcomings and inconsistencies."
- "The relative efficacy of classical homeopathy compared with conventional treatments is unknown. There is no evidence of effects greater than placebo."
- "Some evidence suggests that homeopathy is more effective than placebo. Studies of high quality are more likely to be negative."
- "The effects of homeopathy are not significantly different from those of placebo."

ENHR review states:

A systematic review and meta-analysis showed highly significant results for surveys adding up to a total of 2,617 patients (P=0.000036). Results were not that significant for high quality surveys (P=0.08). The author concludes that further high quality studies are needed to confirm results.³

The authors used an unorthodox statistical technique, combining the P values for all trials, which my statistician colleagues tell me is not a good method. However, if we accept that this may be a valid way of analysing data, the paper states that, "although the P value was statistically significant when all the data were pooled, this became non-significant when the analysis was restricted to the five trials with the highest quality and, therefore, the least susceptible to potential bias."

It goes on to explain, "The significant combined P value obtained in the main analysis does not imply that the homeopathic treatments were efficacious in all the pooled comparisons. This result provides evidence that *in at least one trial* the homeopathic treatment was more efficacious than placebo." (my italics). The paper concludes by saying: "There is some evidence that homeopathic treatments are more effective than placebo; however, the strength of this evidence is low because of the low methodological quality of the trials." The authors found 150 reports of 118 randomised controlled trials of homeopathy, of which only 16 satisfied the inclusion criteria; others were rejected because of methodological defects or because the primary outcomes were not defined. "Studies of high methodological quality were more likely to be negative than the lower quality studies. Further high quality studies are needed to confirm these results."

ENHR review states:

A systematic review of results from 93 substantive RCTs ... concludes that of the 35 different medical conditions covered by these trials the weight of evidence favours a positive treatment effect in eight: childhood diarrhoea, fibrositosis, hay fever, influenza, pain (miscellaneous), side-effects of chemotherapy or radiotherapy, sprains and upper-respiratory tract infections.⁴

This paper analysed 93 randomised controlled trials comparing homeopathy with placebo or another treatment. "Fifty papers reported a significant benefit of homeopathy in at least one clinical outcome measure, 41 that fail to discern any inter-group difference,"—i.e. no effect—"and two that describe an inferior response with homeopathy." The author noted that "this is neither a meta-analysis nor a formal systematic review—the paucity and heterogeneity of published research in homeopathy limits the value of such formalised approaches."

"The available research evidence emphasises the need for much more and better-directed research in homeopathy. A fresh agenda of enquiry should consider beyond (but include) the placebo-controlled trial. Each study should adopt research methods and outcome measurements linked to a question addressing the

clinical significance of homeopathy's effects."

"Some of these trials are examples of the 'double positive paradox', where a homeopathy group and a placebo group have indistinguishable results but both manifest some clinical improvement." Surely this is precisely the point of a placebo group!

ENHR review states:

Meta-analysis of 89 trials of homeopathic medicine versus placebo. Result: significantly in favour of homeopathy (OR 2.45 (95% CI 2.05-2.93)). This meta-analysis included 186 placebo-controlled studies of homeopathy published until mid-1996, of which data for analysis could be extracted from 89. The overall odds ratio was 2.45 (95% confidence intervals 2.05-2.93) in favour of homeopathy, which means that the chances that homeopathy would benefit the patient were 2.45 times greater than placebo. When considering just those trials of high quality published in MEDLINE listed journals, and with predefined primary outcome measures, the pooled odds ratio was 1.97 and significant. Even after correction for publication bias the results remained significant. The main conclusion was that the results "were not compatible with the hypothesis that the effects of homeopathy are completely due to placebo". If the result of new trials were to show no difference between homeopathy and placebo, we would have to add 923 trials with no effect with 118 patients in each in order to balance the two.⁵

Out of 186 trials, 119 met the inclusion criteria, of which 89 had adequate data for the meta-analysis. The combined odds ratio for 89 trials was 2.45; the odds ratio for the 26 good quality studies was 1.66, but with evidence of bias due to under-reporting of non-significant and negative results. The authors state that, "The results of our meta-analysis are not compatible with the hypothesis that the clinical effects of homeopathy are completely due to placebo. But there is insufficient evidence from these studies that any single type of homeopathic treatment is clearly effective in any one clinical condition."

The authors returned to their data in a later paper⁶ in which they analysed the influence of indicators of methodological quality on study outcome, stating that, "there was clear evidence that studies with better methodological quality tended to yield less positive results." Lack of double blinding proved to be the most relevant quality factor, and the authors note that "bias from this factor may be particularly important, as in these trials homeopathy was mainly used for mild and chronic conditions for which there are few objective outcome measures." They conclude that "the evidence of bias weakens the findings of our original meta-analysis".

Shang *et al*⁷ updated this search, and again noted that lower quality trials showed larger effects. They concluded, "Biases are present in placebo-controlled trials of both homeopathy and conventional medicine. When account was taken for these biases in the analysis, there was weak evidence for a specific effect of homeopathy, but strong evidence for specific effects of conventional interventions. This finding is compatible with the notion that the clinical effects of homeopathy are placebo effects."

ENHR review states:

Of the 105 trials with interpretable results, 81 trials indicated positive results. Most studies showed results in favour of homeopathy even among those randomized controlled trials that received high-quality ratings for randomization, blinding, sample size, and other methodological criteria. They came to the following conclusion: "The amount of positive evidence even among the best studies came as a surprise to us. Based on this evidence we would readily accept that homeopathy can be efficacious, if only the mechanism of action were more plausible. The evidence presented in this review would probably be sufficient for establishing homeopathy as a regular treatment for certain indications."⁸ NB: This sentence does not appear anywhere in the original paper.

The original paper states, "Overall, of the 105 trials with interpretable results, 81 trials indicated positive results whereas in 24 trials no positive effects of homeopathy were found. The results of the

review may be complicated by publication bias, especially in such a controversial subject as homeopathy." "... of the better studies 15 trials showed positive results whereas in seven trials no positive effect could be detected".

"At the moment the evidence of clinical trials is positive but not sufficient to draw definitive conclusions because most trials are of low methodological quality and because of the unknown role of publication bias. This indicates that there is a legitimate case for further evaluation of homeopathy, but only by means of well performed trials."

The authors note, "Double blinding, even if the placebo has been described as indistinguishable, has to be checked by asking the patients in which group they believe they were during the trial. Blindness must be checked early in the trial, before the treatment is expected to take effect, because positive effects would break the code. It is easy to state that a trial was double blind, but patients have many ways to break the code. This might explain the small differences in favour of homeopathy."

ENHR review states:

A meta-analysis of three trials on homeopathic immunotherapy. Result: significant effect in favour of homeopathic treatment.⁹

This is not really a meta-analysis; the authors conducted a pilot study which suggested that homeopathic immunotherapy was effective, followed by a larger study which replicated the findings of their pilot study. This paper reports a third trial, and re-analyses the combined results of the authors' three studies.

Summary

Some meta-analyses do suggest evidence of beneficial effects of homeopathic treatments, but the ENHR summary is overly optimistic in its interpretation of the results. More importantly, the original reviews note the twin problems of poor study quality and publication bias (the fact that negative results are less exciting to offer for publication, and less likely to be accepted for publication). It is clear that the high quality studies, and especially those included in the more recent meta-analyses (e.g. reference 7) do not show any effect of homeopathy above placebo.

David A Bender
Senior Lecturer in Biochemistry
University College London

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CAM therapies

SHARKS AND CANCER: A MYTH IS BORN

DR JUDAH FOLKMAN, who died in January 2008, introduced the concept of angiogenesis, the idea that tumours secrete a substance that generates their blood supply. He went on to prove it. And, in the course of research, his team inadvertently triggered the lunatic idea that shark cartilage prevents cancer. This is how it happened.

Folkman's team at Harvard realised that tumours of cartilage, though not unknown, are very rare—and cartilage doesn't have an obvious blood supply. They postulated that cartilage secretes an angiogenesis inhibitor. So, in order to isolate what they hoped would prove to be a plentiful supply of inhibitor, which they could then purify and analyse, they sought a plentiful supply of cartilage. Folkman set a new graduate student, Robert Langer—now professor of chemical and biomedical engineering at Massachusetts Institute of Technology—to do this. He started by using rabbit cartilage, as other researchers had done, but soon realised it didn't provide enough bulk. He then obtained cattle shoulders from an abattoir, lugging sackfuls of them up to this lab in the elevator and enlisting high school students to trim away remaining muscle and harvest the pure white cartilage. Then he learned what every zoologist knows: sharks, rays, skates and dogfish have skeletons made entirely of cartilage. The first shark he bought weighed several hundred pounds and had to be carried up to the lab in pieces. Although it was stored in a cold room, the stench was terrible.

However, they were able to extract and part-purify a substance that inhibited angiogenesis in animals. They reported this in a paper in *Science*, which included the thoughtless remark that sharks weren't known to get cancer. Well, of course, no-one had looked.

William Lane, a vice-president of a Boston-based chemical company called W R Grace & Co, saw the article and took it as a call to commerce. It could be sold as a food or food supplement and not as a drug, thus avoiding the scrutiny of the US Food & Drug Administration. He bought up sharks and rendered their skeletons

into a product called BeneFin. To Langer and Folkman's consternation, he built his sales pitch around them and even used their photos in sales materials until the Harvard lawyers put a stop to it. Two years later, Lane published a book called *Sharks Don't Get Cancer*. He followed this with a second book, *Sharks Still Don't Get Cancer*. The belief became so widespread that there were, eventually, clinical trials. These, unsurprisingly, proved negative.

Later, other scientists in Folkman's team discovered that cartilage also secretes an angiogen, and that cartilage tumours—called chondrosarcomas—secrete huge quantities of them.

Internet searches for shark cartilage and BeneFin reveals plenty of quackbusting hits, and an equal number of hits proclaiming the "clinically proven" benefits. There are also plenty of claims that the commercial market for shark cartilage is causing ecological damage. I find this hard to believe, as the main problems with all fisheries is overfishing, which in turn is a consequence of population pressures.

*Caroline Richmond
Medical Journalist*

Further information

Dr Folkman's War: angiogenesis and the struggle to defeat cancer by Robert Cooke was published by Random House, New York and Toronto, in 2001.

Caroline Richmond's obituary of Folkman was published in the Independent on 4 February 2008. <http://www.independent.co.uk/news/obituaries/dr-judah-folkman-cancer-researcher-who-realised-that-tumours-secrete-a-substance-that-stimulates-their-own-blood-supply-777708.html>

CAM regulation: a new forum thread

PLACEBO LABELS for CAM products—could it work? A HealthWatch member e-mailed with this interesting suggestion for how to regulate and label complementary and alternative treatments.

We will be posting this item on the new HealthWatch online forum along with the response below from committee member Les Rose, and we hope that members will join the discussion.

The suggestion:

"I believe that regulation based on the 'Evidence basis' is impossible with CAM treatments. It would be better to enforce clear labeling and promotion of all products and therapies perceived to be in the CAM area (including 'Food Supplements') that have not met the modern efficacy criteria with the bold writing, 'This product/therapy is a PLACEBO and has no proven health benefit'. Any unsafe product could be banned (if a product contained Comfrey for instance) with ease. All CAM products and therapies would be classified at a stroke as a single group 'perceived health enhancing treatments unlicensed as medicines or treatments'. Then, if a CAM product or therapy wished to become licensed to make claims then it would have no alternative but submit itself to the modern scientific route to achieve that status using appropriate criteria.

"I believe funding of studies regarding safety and efficacy of CAM is a waste of resources both financial and human. The absence of patents is just one problem. Meagre profit margins on many CAM therapies and products could never fund the ever increasing demands from regulators of medicinal products. Whilst overall revenue in CAM worldwide may be billions of pounds there are plenty of witchdoctors making only a crust! Wouldn't it be bet-

ter if we accepted that most CAM therapies and products are fundamentally placebo and regulate and research accordingly? Perhaps we should concentrate on finding out what makes many such placebos seem so effective to their users before embarking on any more fruitless research into CAM using the evidence based paradigm.

"More importantly, authorities should accept that CAM practitioners, therapies and products need to be regulated by reference to a different set of criteria from those of powerful modern medicines. The recently introduced Traditional Herbal Medicines Directive has already spawned a bureaucracy. My suggestion would be to abolish the THMD, class Homoeopathy as CAM and use the money saved to bring CAM into a simple framework of law based on safety and self regulation."

Les Rose, consultant clinical scientist and fellow of the Institute of Clinical Research, comments, "This raises some interesting and radical ideas, but I doubt if it's workable. Suppliers of CAMs would continue to protest that they do have evidence, so a regulator will still be forced to test the evidence. If legislation along these lines came in, it would create a continuous burden of challenges. I suppose we could insist that to avoid a 'placebo' label manufacturers will have to make a case and pay a fee, thus financing the process."

We would be interested to hear from other HealthWatch members, via the Forum on <http://healthwatch.informe.com/forum>

STEPHEN E STRAUS (1947-2007): AN OBITUARY AND SOME SECOND THOUGHTS ON RESEARCH PRIORITIES

STEPHEN STRAUS was a distinguished virologist-immunologist when in 1999 he took office as director of the American National Center for Complementary and Alternative Medicine (NCCAM), which falls under the US National Institutes of Health in Bethesda.

Straus died, aged 60, on 14th May 2007 having suffered from a brain tumor. The NCCAM—the successor of the Office of Alternative Medicine (established 1992)—was formed in October 1998 and was until Straus' arrival dominated by alternative healers, such as the homeopath W Jonas. Its budget for research was in 1999 already \$50 million. Straus was expected to transform the NCCAM into a truly scientific institute. "The American public is increasingly interested in complementary and alternative therapies, and it is critical that NIH put its scientific expertise to work to help determine which therapies are safe and effective," said NIH-director and Nobel laureate Dr Harold Varmus when Straus was appointed. He continued, "The appointment of Dr Straus, with his experience in alternative therapies and his expertise in clinical evidence, will result in significant expansion of clinical research in this field."

Some scientists wondered what an immunologist, who had already published more than 300 papers in peer reviewed journals, could expect to find and discover in the 'lunatic fringe' of medicine. Sadly, the concerns of the sceptics appear to have been justified.

Straus actually had at an earlier stage of his career already shown an interest in illnesses that are not infrequently treated by alternative healers, like Myalgic Encephalopathy (ME), AIDS and chronic postherpetic pain. He was even for some time a favourite of the American ME Association, but this ended when he admitted that he was unable to identify a virus as causal agent of ME and started to discuss immunologic, neuro-endocrine and neuropsychologic aspects of the syndrome. Then he fell out of favour and was strongly criticised.

Straus tried to remain on speaking terms with regular and alternative practitioners, but this was not so simple. Research subsidised by the NCCAM included: the use of shark cartilage in cancer, Chinese acupuncture in osteoarthritis, Reiki in cardiac rehabilitation (Reiki-masters are, it has been claimed, able to paranormally open their healing channels) and intercessory prayer in AIDS.

Of course everything can be put to trial, but alternative therapies are not—as Straus once put it—therapies awaiting scientific recognition. They are mostly ways of treatment that will never reach scientific confirmation and acceptance. That is not because the kind of research required is impossible but merely because any real or plausible biologic base of those treatments is lacking and that will not change within the foreseeable future.

Saul Green, a retired professor in biochemistry at the Sloan Kettering Institute, who analysed the activities of the NCCAM, noted that in the year 2000 about \$110 million had been spent on research. The grants had in his eyes not led to a single article in which the usefulness or uselessness of an alternative therapy had been established. Publications in peer-reviewed journals were virtually non-existent. A few years later Wallace Sampson, editor-in-chief of the *Scientific Review of Alternative Medicine*, wrote on the NCCAM: "Spending more public money to investigate methods with negligible promise is foolish economics and even more foolish public policy".

The NCCAM sets a sad example of what happens if politicians are going to prescribe what the scientific agenda should look like. The initiative to establish the Office of Alternative Medicine had originally come from US-congressman Tom Harkin who believes that his hayfever was cured by bee pollen. Yet discovering new and

effective treatments should be left to the competitive environment of the scientific community. The predictable waste of public money (that could be better invested in serious research into the many unsolved problems of modern medicine) as well the implicit suggestion that useful therapies can be discovered in alternative medicine, which is generally not the case, are things against which serious scientists should warn and speak out.

Straus tried to uphold his reputation when in 2002 he told a number of members of parliament that he wondered, "whether the measures that some are promoting do anything more than prey upon people's fears and distract them from taking more prudent steps to protect themselves. It may not even be prudent to combine such natural products with antibiotics because of the possibility that they would interfere with proper action of the drugs."

"The grants had not led to a single article in which the usefulness or otherwise of an alternative therapy had been established"

Notwithstanding these wise words we remained puzzled with the motivation that drove a distinguished scientist to spend so much energy on research into claims that are mostly absurd. Read what he wrote in his strategic plan for 2005–2009: "The Center has done much to assure CAM critics and cheerleaders alike that our interests are their interests—and the public's interests—to establish the evidence that a CAM practice works for the purposes that it was designed for and is safe to use, and if not, why not."

These words are too kind to a sector that is to a large extent characterised by confused minds and superstition and can hardly be considered as a source of inspiration for the medicine of the future. In the meantime Straus' successor, acting director Ruth Kirschstein, advocated a budget of \$121 million for 2008.

Part of that enviable amount of money is available through the Cochrane Collaboration Complementary Medicine Field Bursary Scheme (2007), that published a call for proposals in August 2007. In 2006 a similar offer was made and two researchers each earned \$5,000 for their reviews on a nutritional supplement in osteoarthritis and on Chinese herbs for the common cold. I wonder whether the Cochrane Collaboration should reconsider distributing money from an institute whose agenda is not guided by research priorities on promising and potentially effective treatments, but instead is driven by biased and politically favoured themes that would never be selected in a free and competitive scientific environment.

*Cees Renckens MD PhD
Consultant Gynaecologist
Hoorn, The Netherlands*

Chairman of the Dutch Society against Quackery

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ON TALLIS' DIFFICULT MORAL QUESTIONS

Gillian Tindall, author, of London, writes:

Dear Editor,

As someone who, at one time, used to lend journalistic skills to the Journal of the RSM by doing the occasional seminar report for them, I am a great admirer of HealthWatch. I am also an admirer of Professor Raymond Tallis, and am essentially in complete sympathy with his views on anecdotal 'evidence' and the false assumptions that tend to follow from it. (Anecdotes, Data and the Curse of the Media Case Study, published in *HealthWatch Newsletter*, issue 68, December 2007).

I would, however, respectfully point out that in broadening out his argument to encompass other examples besides the MMR one, he seems to be straying into other and more challengingly complex issues. When he says that NICE decided that "certain drugs would not be cost-effective in the treatment of early Alzheimer's disease", the implication is that this decision was based not solely on the drugs' effectiveness (or lack of it) but also on an ultimate concept of value for money. Lurking behind this there would appear to be the whole vexed and largely taboo question of how much any society,

however highly developed, can afford to expend on treating any one individual.

Professor Tallis then moves on to the still more contentious subject of benefit to the individual versus benefit to society, with the clear suggestion that these two aims may be in conflict: "even a treatment that has an adverse effect in some recipients may overall have a beneficial effect on the population." Well, yes, perhaps—but that would be a highly flawed moral argument with which to recommend such a treatment for general use, and it is one to which many individuals would be understandably resistant.

Let us, by all means, discuss these and other can-of-worms subjects which, in standard medical journalism, are almost universally ignored. But let us not suppose that a better understanding of the nature of clinical trials and a familiarity with elementary logic are going to solve the problems thereby raised, for they will not. On the contrary, greater clarity of thought tends rather to reveal the extent and difficulty of underlying moral questions.

Yours sincerely

GILLIAN TINDALL

Correction and apology

BEFORE our 2007 HealthWatch Awardwinner, Professor Raymond Tallis, pauses to reflect on the moral questions raised in the letter above, the editor of the *HealthWatch Newsletter* would like to offer her sincere apologies for the inexplicable error in producing the December issue that resulted in his excellent report of his award

acceptance presentation mistakenly being signed off as having been by Professor *Richard* Tallis.

Mandy Payne
Editor, *HealthWatch Newsletter*

Published by HealthWatch

Press enquiries to Professor John Garrow: 01923 710665
www.healthwatch-uk.org

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