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Quality of websites: kitemarking the west wind

Rating the quality of medical websites may be impossible

"There's a lot of harmful medical information on the internet. Something needs to be done." The obvious solution is to provide users with some sort of quality rating, guaranteed by a trusted third party.[1 2] Bodies as diverse as the European Union and NHS Direct Online are attracted to this solution to their problems of protecting the public health. But implementing such a solution is likely to be difficult—if not impossible.

Experience to date has not been encouraging. Three years ago Jadad and Gagliardi counted 47 instruments for rating websites, none of them apparently tested for reliability or validity. They wondered "whether they should exist in the first place, whether they measure what they claim to measure, or whether they lead to more good than harm."[3] After the appearance of a further 15 unvalidated instruments they stopped counting (A Jadad, personal communication).

Why is it so difficult to get beyond the good ideas phase? Take the quality criteria most frequently mentioned: accuracy, comprehensiveness, and balance. No omniscient detached observer exists who can simultaneously view an article through the eyes of a specialist researcher, doctor, patient, and member of the public, let alone take into account the different perspectives of orthodox and complementary medicine. Falling back on the hierarchy of quality of evidence—with randomised controlled trials at the top and descriptive case reports at the bottom—is superficially attractive but ultimately constraining. Why should a site comprised solely of patients' experiences of a condition or a treatment rate lower than one listing systematic reviews?

One option is to rate the process by which the content was produced rather than the content itself—a medical journal's website containing peer reviewed material would rate higher than a commercial site selling miracle cures for cancer. This is the strategy largely adopted by BIOME, the UK gateway that has rated 4500 sites with health or medical content in the past 5 years.[4] Even if it completes its Sisyphean task (at least another 20 000 health and medical websites to go), will consumers appreciate that a site's process, not its content, has been certified? (This raises a more basic question: how much do we know about consumers' use of kitemarks and seals of approval on the internet?)

As a more manageable first step, organisations have published codes of best practice that are meant to help website producers raise their game.[5–7] These codes have proliferated as public anxieties about the credibility of medical websites have driven down their owners' share prices . But the market's punishment of drkoop.com for, among other transgressions, mixing up information and advertising—knocking 96% off its share value[8]—suggests that the market may have its own highly effective solutions to this problem. Could the iron hand of the market ultimately be more successful than codes of practice, especially since examples have already occurred where sites have falsely claimed to be complying with codes? This conjures up the spectre of the need to ensure compliance by active policing, with all its costs. And what of websites that decide not to apply for, or not to publicise, their rating?

Organisations awarding kitemarks or confirming code compliance could face legal challenges. Consumers who are harmed by their reliance on an overvaluation of a site have grounds for damages; sites that are victims of undervaluation (which may affect traffic to the site and hence advertising or financing) have grounds for defamation or product disparagement.[9]

Before going further down this path it is worthwhile asking whether we need any quality control at all. It's easy to be captivated by the novelty of the internet and convinced that it changes everything it touches. But for other more familiar sources of information—newspapers, magazines, books, and radio and television programmes—we cope unassisted by kitemarks. Much of their content contains material that is wrong, incomplete, and unbalanced from the point of view of anybody except its originators. But governments of all but the world's most authoritarian countries have yet to regard this as a problem. Our shorthand way of dealing with the information overload that already exists is to develop loyalty to brands. We gravitate to products that reliably give us what we want. The pattern of use on the world wide web suggests that this is also happening in cyberspace.

By design, the internet has no centre and therefore resists attempts at central control. Initiatives that go with its grain have a chance of success; those that go against it usually fail. Worse than failing, however, is having unintended harmful effects. Without a programme of incident reporting—of good and bad events—how can we be sure that the internet is harming more people than it is helping? The onus should be on those who want to intervene to show that

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their actions will result in a net improvement in human health. Until they have done so, the message to trigger happy legislators should be: "Don't just do something. Stand there."

Tony Delamothe *web editor*

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Fluoridation, fractures, and teeth

Fluoride does not cause fractures but its benefits may vary

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The benefits to teeth of fluoridating community water supplies are widely acknowledged.[1] A comprehensive summary of the most recent evidence is included in the systematic review by McDonagh et al in this issue of the journal (p 855)[2] but some concerns persist about possible adverse effects on bone.[3] The paper by Phipps et al in this issue of the *BMJ* (p 860) introduces new evidence on the safety of fluoridating community water supplies.[4] In their multicentre prospective study, Phipps et al found that ambulatory women aged 65 years or older who had been continuously exposed to fluoridated water for the past 20 years had higher bone mineral density at the lumbar spine and hip and a slightly lower risk of hip and vertebral fractures than women who had not been exposed to fluoridated water. The potential confounding effect of other factors known to be associated with fractures, such as oestrogen use, smoking, and body weight, was controlled for at the level of the individual woman.

This was not the case in earlier ecological studies (cited by Phipps et al) in which higher rates of fractures were found among communities that had fluoridated drinking water when compared with communities without fluoridation. However, a study among residents of the English county of Cleveland who were aged 50 or older and who had had lifelong exposure to naturally high concentrations of fluoride in their drinking water showed no increase in their risk of hip fracture when compared with community controls who used water with naturally low concentrations of fluoride.[5] In this study potential confounders were also controlled for at the level of the individual woman. Thus there seems to be reasonably strong evidence that an optimal amount of fluoride in drinking water—either added or occurring naturally—does not increase the risk of osteoporotic fractures in elderly people. No evidence of an elevated risk of fractures attributable to using the optimal level of fluoride in drinking water was found in the systematic review by McDonagh et al.[2]

The association between the fluoridation of community water supplies and the rate of fractures is part of a wider question about the potential of using fluoride for controlling osteoporosis, which is a major public health problem that causes much pain and disability and has considerable costs for society.[6] The prevalence of osteoporosis is increasing as the population ages. Bone mineral density and the frequency of fractures are used to assess the exposure of a population to the risk of osteoporosis. Fluoride seems to be the only drug capable of increasing osteoblastic activity and thus bone mineral density. The true value of the gain in bone mineral density remains questionable, however, since its increase after the use of fluoride has been accompanied by both a higher rate of fractures and a lower rate.[7 8] One theory about the conflicting results is that high doses of fluoride may be harmful and low doses beneficial.[9] It has also been proposed that adjuvant calcium is necessary for fluoride to be effective.[9] Finally, the conflicting results may be caused by biases in the studies. Currently, these issues are under thorough scrutiny, and a systematic review is to be published in the near future.[6]

The finding that long term exposure to fluoridated water does not increase the risk of osteoporotic fractures among elderly people should alleviate remaining concerns about the safety of fluoridation.

In terms of benefits, the only aim of community water fluoridation is to prevent dental caries. A recent review of the effectiveness of water fluoridation in the United States shows that previous reductions in mean caries scores of one half to two thirds are no longer attainable because other methods of providing fluoride and the availability of products containing fluoride have reduced the prevalence of caries, thus diluting this measurement of effectiveness.[10] Similar findings have been reported from the United Kingdom.[11] The reduction in the relative effect of fluoridation, which is also seen in the systematic review by McDonagh et al has generally not been big enough to call into question the justification for fluoridating water.[2]

However, a much larger reduction occurred between 1973 and 1982 among 13-15 year olds in Finland: in 1973 the score of decayed and filled teeth was 43% lower in a fluoridated area than in a low fluoride area, whereas in 1982 there was no difference.[12] In Finland preventive dental care is provided free to all children, and this reduction shows that the relative effect of fluoridation can vary strongly depending on different circumstances. Over 360 million people in about 60 countries worldwide are exposed to fluoridated water: more than 10 000 communities and 145 million

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