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British Journal of Anaesthesia **99** (5): 608–10 (2007)
doi:10.1093/bja/aem277

Editorial III

Just give me the facts

We now use the internet as a source of ready information. We are a broadband society and for many of us, access to the web is so simple that we go there the drop of a hat. Searches for health information, done by ‘consumers’, usually take about 5 min.¹ How do these searches work? Search engines such as Google and Yahoo are searchable databases of ‘snapshots’ of websites and other internet resources. These databases are topped up by ‘spiders’ (really just a software program) that follow the links from one page to another, sending home the snapshot of each new page that they link to. This accumulation of websites for the search engine database does not involve any quality control, and often means that the database is a little out of date as web pages are updated. The way these search engines work means that if a website is not linked with any other site, then it is unlikely to be found. Search engines do not have much access to the ‘deep web’ (such as subscription-based databases or full-text materials) which is of greater interest to clinicians and researchers. However, this problem is being eroded by search engines such as Google Scholar (<http://scholar.google.com/>) and Scirus (<http://www.scirus.com/>). These incorporate free databases such as PubMed and harvest data from publisher catalogues and full-text electronic journals and books. Search Engine Showdown (<http://searchengineshowdown.com/>) gives a useful summary of the relative strengths and weaknesses of the different search engines.

Most professionals keep a high level of suspicion about the information gleaned from searches. So, how do we know what to trust, and what to discard? When we reach for a textbook, we may not expect something that is up to date, but we have been there before, and have formed an opinion of what it may hold. There are unlikely to be surprises. Websites are not like that and instead they ask

things like ‘are you feeling lucky?’ Is the biggest hit the best? Relevance is affected by ‘conventional’ factors such as the specificity and number of terms used in a search, but search engine results are also ranked by other means. For example, a prime method of ranking is by the position of the searched terms in a website (e.g. title; early in the body of text). Another is the number of times the terms appear in the website. The more often a term appears, and the closer it is to the headline, the higher the ranking of the page in the results list. Google adds a sort of ‘popular vote’ factor, in that the more frequently a website is linked to by other websites, the higher it appears in the results list. Ask.com (www.ask.com) takes the popular vote factor one step further and focuses on how frequently a site is linked to by sites in the same subject area. Naturally, these ranking rules are frequently exploited and subverted by web content creators, using methods such as Google bombing and spamdexing, but these methods are recognized and countered, in a dynamic balance.

Some websites follow guidelines, user guides, or codes of conduct, and some sites carry ‘approved’ information. These features might give us hope we can trust what we find. But in truth, as Caron and colleagues² point out in their recent article in the *British Journal of Anaesthesia*, these safeguards merely indicate that the sources meet a relatively arbitrary set of criteria that are intended to filter the reasonable from the possibly unreliable, in a similar way that the Cochrane criteria or other guideline criteria attempt to set apart the rigorous studies from the slapdash. We know the methods may have gained a seal of approval, but we still cannot be sure the results will be useful. We also know examples of how dubious studies slip through approval processes.³ A problem with quality markers like the Health on the Net (<http://www.hon.ch/>) is

that it takes time to assess a website. Quality-approved subject gateways such as HoN will never catch up with the explosive growth of the web. There are patient-oriented resources like Judge (<http://www.judgehealth.org.uk/>) that aim to show the public how to critically appraise health-related content—but these formulaic measures have severe limitations. Just as with the critical appraisal checklists used in systematic reviews (e.g. CASP www.phru.nhs.uk/casp/critical_appraisal_tools.htm), the reader must already know about the subject. Unless you are already an expert, it is hard to determine factual accuracy.

Different searchers are looking for different results. Consider the clinician who seeks help in managing a patient with a rare disease. He or she wants enough information to get the patient safely through the procedure and a balanced quantum of information that will as much warn of the dangers, as will advise a specific course of action. Anaesthetists know that keeping out of trouble is more important than setting out on an unfamiliar method of management that claims to be the best way of dealing with a rare condition. Many *bona fide* papers are written by enthusiasts, tempting the unwary clinician down unfamiliar paths to unknown hazards. On the other hand, simple platitudes give the appearance of wisdom when they are no more than mantras. ‘Maintain oxygenation’ sounds wise but are such statements helpful, or even always correct? Consider treating anaemia in patients with chronic renal failure. For nearly 20 years, treatments to stimulate red cell formation were used because ‘quality of life’ appeared improved. It now seems that high haemoglobin targets lead to worse outcomes. Despite this, a recent comment noted that there are ‘strongly held beliefs discordant with what is now a sizeable and consistent body of evidence that higher haemoglobin targets are not better than lower’.⁴ This particular example involves some vested interests and faulty logic, but who is to say what impression might be drawn from a superficial search of the literature in any topic? Logic can be faulty, and most of our scientific evidence, after all, consists of research studies that have been funded by vested interests.

Alternatively, think of the patient, with little knowledge and perhaps considerable trepidation, not certain if the professionals have told her the whole truth when they say ‘this is safe—we wouldn’t suggest this way of doing things if it were not’. Americans search the web for health-related information as frequently as they use the internet to look up a phone number. A recent study found that 74% respondents ‘felt reassured that they could make appropriate health care decisions’ using information from the internet, and only 15% checked the currency and source of the information.⁵

What sort of information is needed here, and how should it be given? Risks and benefits can take different dimensions, according to the way they are expressed. Risk is perceived differently by those who wish to know, compared with the perceptions of those who wish to be merely reassured, or wish to find that what they have been told

already agrees with what they can find for themselves. How do such people find the facts? Many patients do not know the difference between spinal and epidural. How do the search engines do these things? A simple search over a decade in the *British Journal of Anaesthesia* yielded 114 hits for epidural, 371 for extradural (the word in vogue for this journal at that time), and three for peridural. A good librarian or a careful use of medical subject headings could keep a professional out of this particular trap, but what chance does the amateur have to glean the information and avoid such mishaps? If we research the topic of acid aspiration and anaesthesia, hundreds of papers on sodium citrate, H₂ blockers, and proton pump inhibitors emerge, suggesting that this is a great hazard. In truth, the likelihood of acid aspiration causing serious complications is quite small,⁶ and the ASA guidelines⁷ do not recommend prophylactic therapy. Only the cynical professional (or the professional cynic) recognizes that small studies with surrogate outcomes, several me-too drugs, and the pressure to research and publish are some of the relevant factors that generate this plethora of papers, fuelling irrational fears of what is an infrequent complication. This is a simple example, so what about controversial agents such as recent non-steroidal anti-inflammatory drugs, or perioperative beta-blockers, or aprotinin? Even the professionals are divided and undecided on these issues, differing opinions abound, and one opinion will come out at the top of that hit list: Will it be the correct one? It is anyone’s guess: the most useful advice is *caveat investigator*, or perhaps just ‘Google carefully’!

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