View from the front line – Medical search engines

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There is currently no superstar medical search engine that stands heads and shoulders above the rest, but there are a number of useful, dedicated resources available.

The idea is simple. The internet is awash with medical data, information and knowledge, so simply link it all together with a search engine that specialises in medical affairs and an amazing resource would be available. Well it sounds simple and reasonable and after all Google <www.google.co.uk/> does an excellent job of attempting to catalogue the general Internet. So concentrating on one sector, albeit an important section of the Internet, medicine, should not present too much of a problem you would think – but it does.

Just imagine how effective a Google-like version of a medical Internet search engine would be. Type in your query, press search and within a flash, your answer would appear. Click on the target and you would be taken swiftly to the resource of your choice. Even better, the target resource would be graded as to how evidence-based the information it possesses would be. Well, sadly, that option does not currently exist. There is no true superstar medical search engine that stands heads and shoulders above the rest. There are many complex reasons why this should be, but one simple one is money!

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It costs a lot of money to set up an operation that could be the Google of the medical world and, equally importantly, it would have to generate revenue to attract investors. There could be a stream of grateful drug companies eager to capture the eyeballs of doctors and health professionals. They may be persuaded to part with some cash to finance such a scheme, if it suited their purpose and raised the profile of their products. So far, nothing has appeared on the horizon; however, if Google can make money out of offering Internet users a quality, all-purpose, general search engine then surely there is a market for a high-quality, leading edge, medical search engine?

An additional problem is that a lot of high-quality medical information will not be routinely available to such a specialised medical engine. This is because such information will be lying in a database that may not be directly accessible to a search engine. Furthermore, high-quality and key medical knowledge may be lying behind password-protected sites, often because entry is accessible only via a subscription. Medical journals and textbooks are often in subscription-only sites and so are not accessible by a search engine. Also, bear in mind that sometimes an evidence-based answer to your query may not exist, even if you had the all singing, all dancing search engine.

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So the holy grail of a search engine aimed at the health professional is already looking far away. Personally I don't know of any single, all-conquering, fast, accurate and far-reaching medical search engine that is currently available. If you do know of one, please let me know!

In the meantime, what is out there that can help a health researcher or healthcare professional find that piece of information that is core to their work, or simply answer their query quickly? Well let's go back full circle to a general search engine such as Google <www.google.co.uk/>. Yes, it does mix up technical sources with non-professional sources which are aimed at patients. Also there is a lot of flaky and dubious material out there. However, a quick flick through the first couple of results' pages may provide the answer. Also don't forget one of Google's little gems, Google Scholar <http://scholar.google.com/>, which specifically looks at academic literature. Of course, Google is not the only all-purpose, general search engine but it is one of the leaders of the pack. Another variation of this theme is to have a meta search engine that covers a number of search engines through the one interface; one example of this is Dogpile <www.dogpile.com/>.

Okay, moving away from general resources, if the perfect medical search engine does not exist (and I wonder if it ever will), what contenders are out there? Well, there is no current leader of the pack but there are a few good resources, each with something to offer. One offering that is well known and stands out is the US National Library of Medicine's PubMed <www.ncbi.nlm.nih.gov/sites/entrez>. This includes the well-known Medline and is an enormous database of medical literature that is free to use. Sometimes the results provide

a link to free access to the full article, but often it is just an abstract or a citation of the original article. If I find an answer to my query in PubMed, then sometimes I can find the original journal and hence the text of the article in <www.freemedicaljournals.com/> or with an Athens account at <www.library.nhs.uk/booksandjournals/>. Also have a look at PubMed's clinical queries option <www.ncbi.nlm.nih.gov/entrez/query/static/clinical.shtml>.

Another excellent medical search interface is the Tripdatabase <www.tripdatabase.com/> which again is free to use, though in the past it was funded via a subscription-based model. It is quite a sophisticated offering and has an impressive database. If you want to get the best out of it check out <http://blog.tripdatabase.com/2007/06/top-ten-search-tips-for-trip.html>.

Other useful medical search engines, with free access, include:

- *Health on the Net Foundation's MedHunt* <www.hon.ch/MedHunt/>
- *SearchMedica, the GP's search engine* <www.searchmedica.co.uk/>
- *SUMSearch from the University of Texas Health Science Center* <http://sumsearch.uthscsa.edu/>
- *Stanford University Libraries' HighWire Press* <http://highwire.stanford.edu/cgi/search>
- *Cochrane Collaboration, with free access to the Cochrane Library in the UK through national arrangements* <www.cochrane.org>.

There is no doubt that there are some excellent, dedicated medical search engines out there today, but there is no clear leader which has a huge advantage over its rivals. Currently, the best strategy is to use a few of the resources mentioned in this article and hopefully you will strike gold. Perhaps, in years to come, someone will come up with the killer application that will result in herds of health professionals stampeding towards that resource, but I feel that day is some way off. In the meantime, have a few Web sites at your fingertips and learn how to get the most of out them.

UK Internet usage – the age and gender divide is shrinking

<www.ofcom.org.uk/research/cm/cmr07/telecoms/telecoms.pdf>

Part of Ofcom's 2007 annual report covers the telecommunications sector. This includes some data on Internet usage. Though, overall, 55% of use is by men, women in the 25–34 age group spend more time online (55%) than men of the same age. For older people, 44% of those aged 50-64 use the Internet, and 16% of those 65+. In fact, the 65+ group spend most time online, about 42 hours a month on average.

Evaluation guidelines for Intute: Health and Life Sciences

<www.intute.ac.uk/healthandlifesciences/IntuteHLS_Evaluation_Guidelines.doc>

Intute: Health and Life Sciences (formerly BIOME) applies strict evaluation procedures when assessing Internet resources for possible inclusion. These procedures cover criteria reflecting the quality of a resource, such as authority and reputation; currency, scope and accuracy of content; and accessibility, design and ease of use. Detailed guidelines explaining these procedures have recently been revised, and comprise:

- Factors affecting the quality of an information source
- How to evaluate an Internet-based information source
- Gateway specific quality issues
- Evaluation guidelines for information relating to complementary and alternative therapies.

Other Intute policies and guidelines are also available <www.intute.ac.uk/healthandlifesciences/policy.html>.

Mobile self management of health

<www.keyworth.leeds.ac.uk/ehealth/>

Leeds University is one partner in a project studying 'self-management of life-style and chronic disease using wireless technology'. The project aims 'to design integrated products and systems to enable us to monitor and control our healthcare, via mobile devices and home PCs, linked to professional health and social care services'. One product under development is for use by chronic obstructive pulmonary disease patients. A pulse oximeter, measuring heart rates and blood oxygen levels, is connected via Bluetooth to a mobile phone.