Editorial

Know Thy Source: Medical Information on the Internet

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Journal of Perinatology (2003) **23,** 353. doi:10.1038/sj.jp.7210962

Going into the first meeting with a new faculty member, a colleague asked me "Did you google him?" The question stopped me in my tracks. When did ''google'' become a verb? (Google™ is a trademark of Google Technologies Inc.). The question indicates a dramatic paradigm shift in information retrieval that has permeated through every layer of our lives, including our profession. Not only do residents ''google'' their prospective dates or old classmates, but often their first source of information to address a clinical question is an Internet search engine. The motivation is obvious: search engines allow Boolean searches that retrieve documents on the web with a very high level of precision, based on user-defined keywords. More importantly, when using a search engine like Google, users automatically receive an implicit ranking of retrieved resources.[1] Using the principle of ''the impact factor'', commonly used to rank scientific journals,[2] Google ranks resources largely by counting citations or backlinks to a given web page. By approximating the referring page's importance and by normalizing by the number of links on a referring page, Google derives a rank or importance for each retrieved document. If many web sites link to a certain web page, or if a few highly ranked web sites link to the same web page, that page's ranking will also be high. Using this principle, the more citations (backlinks) an Internet medical resource has from other Internet resources, the higher the ranking of that medical resource on the Google search engine.

Given the ease of use and the automatic and implicit ranking of medical resources, it is no wonder that Google is becoming an important information retrieval tool for medical professionals. In this issue of the *Journal of Perinatology*, Dhillon et al. describe the use of the Internet by parents of newborn intensive care unit patients to obtain medical information. Just as the medical profession has to recognize the fact that the Internet has become a major source of medical information for patients and their families,[3] we also need to understand the importance of this new method of information retrieval in our own practice. Beyond the textbooks and journals that we have traditionally referred to, the Internet offers interactive information resources that cannot be duplicated in paper form (Examples: Pubmed, OMIM, CRISP).

This unfamiliar new realm of medical communication brings with it a new set of challenges. First and foremost, we must learn how to assess the quality of an online medical resource. Empiric methods of quality assessment have been relatively unsuccessful on the Internet; one of the strongest predictors of quality is an inverse number of exclamation marks.[4] An alternative is the use of medical meta-indices, which provide rating systems or ''awards'' to help users identify quality medical information. However, most of these rating systems were found to be incomplete and not validated.[5] Current users of the medical Internet are therefore left to their own judgment to assess the quality of the information they use. Fortunately, few cases of harm associated with use of health information on the Internet have been reported,[6,7] and these were not associated with health-care professionals using incorrect or outdated Internet information.

The new generation of physicians graduating from training programs today are more comfortable leveraging the Internet for medical information than pouring over journal articles and textbooks. Medical students also find it easier and more effective to learn and use general Internet search engines than medical meta-indices or medical search engines.[8] Medical education needs to address the use of these resources, and train physicians to recognize markers of trustworthy Internet information: authorship, attribution, disclosure, and currency.[9] It is up to the current generation of teachers and mentors to stress the need to go to the source, review the actual data, and determine the reliability of information offered.

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