Wireless Information System for Emergency Responders (WISER). Specialized Information Services, National Library of Medicine, National Institutes of Health, Department of Health and Human Services, 6707 Democracy Boulevard, Suite 510, MSC 5467, Bethesda, MD 20892-5467; 888.FIND.NLM (346.3656); teh@nlm.nih.gov; http://wiser.nlm.nih.gov; free download.

At an incident scene, first responders, HAZMAT teams, and emergency medical services (EMS) personnel routinely have to deal with hazardous substances. Traditionally, they consult several texts at the scene for containment and exposure information. Few electronic resources have been available to aid them in this time-sensitive task. The National Library of Medicine (NLM) attempts to address these information needs through the Wireless Information System for Emergency Responders (WISER). Designed by NLM's Toxicology and Environmental Health Program, this product for personal digital assistants (PDAs) provides integrated hazardous material data in a streamlined format designed for quick access and easy navigation.

WISER contains a subset of the Hazardous Substance Data Bank (HSDB). Available through TOXNET, HSDB in its Web format has information on 4,700 substances, including toxicity, exposure, containment, and properties. Much of the content is peer reviewed, but entries can be very long and difficult to navigate. WISER has simplified this data for easy reference by including only the 390 substances most likely to be encountered. For each substance, the most pertinent portions of each HSDB entry are included. In addition, roles (first responder, HAZMAT team, or EMS personnel) can be specified, giving individual members of the disaster team the information they need.

Known substances

On the main search screen, known substances can be retrieved by name, United Nations/North American Hazardous Materials Code (UN/NA) number, Chemical Abstracts Service (CAS) number, or Science Transportation Commodity Code (STCC) number. Entries begin with key information such as flammability and other important precautions. Primary topics vary according to role. First responder entries highlight identification and early containment protocols such as protective distances and fire procedures. HAZMAT entries include chemical properties, Immediately Dangerous to Life or Health (IDLH) values, and National Fire Protection Association (NFPA) class. EMS personnel entries discuss treatment, health effects, and toxicity. From any of the role screens, all other data can be accessed through secondary topics. Information is broken into easy-to-read segments suitable for a PDA screen.

Unknown substances

Decision support for identifying unknown substances is available through WISER's Unknown Substance search. After selecting the ''Help Identify'' button, a user can select properties of the substance (e.g., color, odor, pH, specific gravity) and/or symptoms of people with exposure. After all known facts are entered, WISER will display a subset of potential substances from its database. For instance, a bluish viscous fluid that floats in water and induces vomiting and skin redness may be zirconium nitrate or zirconium picramate. Substance names link to the full WISER entry from the results screen.

Conclusion

WISER provides a simple intuitive interface for quick access to hazardous substance data. Its unknown substance search is particularly useful for on-scene decision making. Hans House, an emergency medicine physician at the University of Iowa Hospitals and Clinics, also tested WISER for this review. He feels the program is easy to load, is easy to navigate, and provides accurate information for personnel working at incident sites. Any librarians engaged in outreach to emergency medical services, fire departments, or disaster planning teams should encourage its use.

WISER is currently available for Palm OS, Pocket PC, and Windows. Future plans include a Web version, wireless capability, and interfaces for other wireless devices such as cell phones.

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Nothing quite prepared the library world for the introduction of Google Scholar in November 2004. In mere weeks, Google's astonishing brand recognition and promotional machine propelled Google Scholar into the public's consciousness. Librarians—particularly medical and science librarians—have been talking and writing about it ever since. Who would have thought that a research database could create such a buzz?

What exactly *is* Google Scholar? The parent company has been typically coy with explanatory information on the product since its launch. Even now, much remains unknown about its source content, indexing, or relevance algorithms.

Google Scholar is a subset of the larger Google search index, consisting of full-text journal articles, technical reports, preprints, theses, books, and other documents, including selected Web pages that are deemed to be ''scholarly.'' Although Google Scholar covers a

great range of topical areas, it appears to be strongest in the sciences, particularly medicine, and secondarily in the social sciences. The company claims to have full-text content from all major publishers except Elsevier and the American Chemical Society, as well as hosting services such as Highwire and Ingenta.

Much of Google Scholar's index derives from a crawl of full-text journal content provided by both commercial and open source publishers. Specialized bibliographic databases like OCLC's Open WorldCat and the National Library of Medicine's PubMed are also crawled. Since 2003, Google has entered into numerous individual agreements with publishers to index full-text content not otherwise accessible via the open Web. Although Google does not divulge the number or names of publishers that have entered into crawling or indexing agreements with the company, it is easy to see why publishers would be eager to boost their content's visibility through a powerhouse like Google.

Like the larger Google search engine index, Google Scholar is fast and easy to search. It retrieves document or page matches based on the keywords searched and then organizes the results using a closely guarded relevance algorithm. Because so much of the content of Google Scholar's index comes from licensed commercial journal content, most users will discover that clicking on a link in Google Scholar's search results may reveal only an abstract—not full text—accompanied by a pay-per-view option. Institutions can configure OpenURL link resolvers, such as SFX, to authenticate users to provide access to full-text content that is available through institutional subscriptions.

The inadequacies of Google Scholar have already been well documented in reviews [1, 2]. These reviews focused on three major weaknesses of the tool: lack of sufficient advanced search features, lack of transparency of the database content, and uneven coverage of the database. Henderson's review of Google Scholar demonstrated its significant limitations for clinician use [3]. Tests conducted by Jacso showed that Google Scholar typically crawled only a subset of the full available content of individual journals or databases [4]. In February 2005, Vine discovered that Google Scholar was almost a full year behind indexing PubMed records and concluded that ''no serious researcher interested in current medical information or practice excellence should rely on Google Scholar for up to date information'' [5].

With a simple, basic search interface and only minimal advanced search features, Google Scholar lacks almost every important feature of MEDLINE. It does not map to Medical Subject Headings (MeSH); does not permit nested Boolean searching; lacks essential features like explosions, subheadings, or publication-type limits; and offers searchers no ability to benefit from the extraordinary indexing that the National Library of Medicine provides.

Google Scholar's closest free Web competitor, the quasi-scientific search tool Scirus <http://www.scirus.com> from Elsevier, crawls a defined subset of free Web pages plus full-text content from Elsevier journals, patents, preprints, and more. Unlike Google Scholar, the Scirus project team is quick, even eager, to disclose the content of the Scirus database and regularly feeds new partner content into the database in its ''About Us'' section [6].

Google Scholar is not designed for comprehensive research or clinical questions. However, it is still a worthwhile and useful search tool, although a limited one. Much like the Google search engine, Google Scholar is designed to find something good enough for the task at hand. So often, that task is not comprehensive or exhaustive research that requires a turbo-charged database but is a senior high school assignment, a college paper, or other thing that just needs to get done as painlessly as possible. Google understands that most searchers are not interested in searching or learning complex search skills. They are interested in finding something and finishing the task. While high-quality, comprehensive, and sophisticated medical search resources have no substitute when the task calls for them, they are not always necessary.

In addition to being fast and easy, Google Scholar has some great features. It is cited by × feature, which links a result to other items in the Google Scholar database that reference the item, a quick and fast way to find citations. Although it is not comprehensive, no other citation-linking tool in the marketplace is.

Scholar's great breadth of coverage makes it a handy tool for searching those topics that do not instantly lend themselves to specific subject indexes (e.g., ''brain drain''). Like the Google main search index, Google Scholar is a handy tool for verifying citations, extending the limits of PubMed's Single Citation Matcher. Cyber sleuths can also use Google Scholar to find a free Web version of an article that might have started out behind a publisher's authentication firewall but has been downloaded by someone and then put on a public Web server.

There is plenty to dislike about Google Scholar. Its total lack of transparency and disingenuous treatment of librarians' concerns are especially irksome. For researchers, the growing strength of the Google Scholar brand may work to skew impact factors of journals, artificially favoring those that rank more highly in Google Scholar. Time will tell.

Google Scholar has a place in medical libraries. It is a perfectly decent search tool for those who are looking for quick answers and for questions where the outcome has little or no impact on clinical excellence. Google knows what libraries have been reluctant to admit: that users love search appliances that are fast, easy, and deliver the goods—or at least enough of them to satisfy their current information need. Plenty of information needs do not require powerhouse tools like MEDLINE.

Google, its subset of services like Google Scholar, and many other ''answer engines'' on the Web have forced libraries to recommend tools

that deliver quick and easy answers for time-pressed users. To their credit, libraries are responding to the competitive pressure for simplified retrieval by integrating selected free Web search tools like Google Scholar and Scirus into collections of licensed indexes and databases

Every medical librarian knows that ''plug-in-the-keyword-and-hope-for-the-best'' tools like Google Scholar are poor choices for serious search questions, such as clinical queries, bibliographic reviews, comprehensive literature searches, or other questions that require a more sophisticated approach. That is where the greatest challenge lies: How can librarians, with far fewer resources than Google, succeed in getting the message out that, in many cases, *easy* is no substitute for *good*?

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