Chapter 11
Medical E-Reference:
A Benchmark for E-Reference Publishing in Other Disciplines

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ABSTRACT

Electronic medical information retrieval systems and reference sources were some of the first discipline-specific e-resources to be developed, due to physicians' need to access the most current and relevant clinical information as quickly as possible. Many medical publishers and information aggregators have been incorporating the features their users demand for years. Thus, medical e-reference publishing could serve as a benchmark for e-reference publishing in other fields. Yet medical e-reference is not without its challenges. Today's physicians and medical students expect immediate and user-friendly electronic access to media rich and value added clinical references, particularly via their mobile devices. Publishers, librarians, and network administrators will need to ensure that mobile information sources users demand are discoverable and easy to access and use, even in healthcare environments where increased data security is necessary.

INTRODUCTION

Medical publishers and aggregators were among the first to begin developing electronic desktop and mobile publications, due to the obvious need of physicians and medical students to access authoritative reference sources quickly and conveniently, but with the current increasing adoption of mobile devices and smart phones among the general population as well as the physician population, user expectations for anytime, anywhere access to enhanced content is increasing as well. Therefore, medical publishers, aggregators, and access providers (like librarians and network analysts)

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must continue to meet these expectations as much as possible. Medical librarians and publishers take for granted that authoritative reference sources are critical for quality patient care, but today's physicians and medical students also expect a flexible and media rich experience, that is still quick and easy to discover and to access, even on a secured network. For decades, the medical field has been at the forefront of discovery of and access to scholarly resources. One reason for this may be because of the influence of the National Library of Medicine (NLM), which has long been a leader in Information Technology.

BACKGROUND

The NLM published the first volume of *Index Medicus: A Monthly Classified Record of the Current Medical Literature of the World* in 1879. This index included books, medical articles, reports, and other literature (Miles & National Library of Medicine, 1982). NLM set high standards for information retrieval systems and vocabulary control in 1964 when it developed MEDLARS (Medical Literature Analysis and Retrieval System), which was based on *Index Medicus*. This database was too large for the remote access by computer systems in 1970 (McCarn, 1970), but by 1971, NLM had developed the first available online IRS, MEDLARS ON-LINE or MEDLINE, by using existing U.S. Department of Defense computer programs. DIALOG, the first well known, multidiscipline, and searchable database, was developed after MEDLINE in 1972 (Palmer, 1987). The NLM's impact can even be seen in current copyright practices. The 1976 Fair Use sections of the copyright law developed as a result of lengthy litigation between NLM and publishers who objected to NLM's photocopying practices (Miles & National Library of Medicine, 1982). During the 1980s, the NLM benefitted by having a director who was simultaneously the director of NLM and the National Coordination Office for High Performance Computing and Communications (Groen, 2007). Under this director's leadership, NLM developed a computer program called Grateful Med, which was the precursor to PubMed (Hersh, 2003). PubMed became freely available on the Internet in 1997 and currently includes the full text to over 100 medical e-books (U.S. National Library of Medicine and the National Center for Biotechnology Information, 2010).

Very early medical e-reference books published include the Physician's Desk Reference and the Merck Manual (Hersh, 2003). STAT!Ref was a very early medical e-book aggregator, with its first version published in the early 1990s (Heyd, 2010). Another early medical e-book aggregator is Unbound Medicine which now partners with many e-book publishers: American Academy of Pediatrics, The American Public Health Association, The American Society of Health-System Pharmacists (ASHP), BMJ Group, Consumers Union and ConsumerReportsHealth.org, F. A. Davis, McGraw-Hill Professional, Merck & Co., Inc., Oxford University Press, Wiley-Blackwell, and Wolters Kluwer Health (Unbound Medicine Inc., 2011). Many medical e-books are available through these platforms: STAT!Ref and American College of Physicians (ACP), McGraw-Hill's Access products (including AccessMedicine, AccessSurgery, and AccessEmergencyMedicine), Elsevier's MD Consult, NetLibrary, Books@Ovid, and R2 Digital Library. Because of their relatively early development compared with those of publishers in non-medical disciplines, current medical e-reference book interfaces are very robust when compared to their general academic counterparts. Most medical e-book aggregators have allowed the functions that current e-books users complain are lacking in many other subject area e-book offerings: the options to download (to computers or to mobile devices), print, and email sections or whole chapters (*e.g.* Access Medicine, MD Consult, and Psychiatry Online); the ability to personalize the experience with bookmarks, saved information, and annotations; the inclusion of hyperlinks to

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