

Chapter 2

Gastrointestinal Motility Online Educational Endeavor

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ABSTRACT

Medical information has been traditionally maintained in books, journals, and specialty periodicals. A growing subset of patients and caregivers are now turning to diverse sources on the internet to retrieve healthcare related information. The next area of growth will be sites that serve specialty fields of medicine, characterized by high quality of data culled from scholarly publications and operated by eminent domain specialists. One such site being developed for the field of Gastrointestinal Motility provides authoritative and current information to a diverse user base that includes patients and student doctors. Gastrointestinal Motility Online leverages the strengths of online textbooks, which have a high degree of organization, in conjunction with the strengths of online journal collections, which are more comprehensive and focused. Gastrointestinal Motility Online also utilizes existing Web technologies such as Wiki-editing and Amazon-style commenting, to automatically assemble information from heterogeneous data sources.

INTRODUCTION

For the last several decades, Harrison's Principles of Internal Medicine, published by McGraw Hill, has served as a major source of information in the field of Gastrointestinal Motility. This book and its online presentation have been, and continue to be, used by many medical colleges to train the

next generation of medical doctors; practitioners in this field also frequently refer to them.

Traditionally, papers and articles in specialty medical journals supplemented the material in textbooks like Harrison. The latter book would itself be updated periodically to reflect the state of the art in medicine and the various specialties, providing a consensus opinion of the standard of care.

The advent of computers and Internet has given rise to online sources of information such as UpToDate (<http://www.uptodate.com/>) and WebMD (<http://www.webmd.com/>). While gaining tremendous following and being updated frequently, these sources of online information relate to the medical field as a whole and not to particular specialties. Furthermore, the information on these sites is generally maintained by personnel of the respective organizations, not by specialists in specific disciplines of medical science. These organizations are usually set up as commercial entities, rather than not-for-profit ones.

The progressive transformation of information has seen many journals that were previously in paper format opting to use new electronic technologies; most of them now come out both in paper and electronic formats. Searchable electronic archives, such as PubMed (<http://www.pubmedcentral.nih.gov/>), now place a plethora of information into the hands of researchers and physicians. However, such searches are very time consuming and often produce irrelevant or poorly supported articles. Sites like Harrison's Online (<http://www.accessmedicine.com/>) serve as information directories that can be searched, hoping to place the most suitable information on a medical topic in a user's hand.

Students have gradually come to expect information in quick and readily available forms without having to bother about inter-library loans or even hardcopy versions at all.

The goal of the endeavor described in this article was to adapt emerging technologies to improve methods of teaching gastrointestinal material to students and to serve as a more effective source of relevant and accurate information for medical practitioners and specialists.

Evidence-Based Medicine

A study from the School of Information Management and Systems at UC Berkeley estimates that, in 2003, the World Wide Web contained

about 170 terabytes of information on its surface alone, equivalent to seventeen times the size of the information in the Library of Congress (Lyman & Varian, 2003). With this increasingly information-rich society, the most precious ability for students and learners is no longer to find the information, but to discern the most relevant pieces of information and to integrate them into practice. The American Library Association describes "information literacy" as the ability of individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (American Library Association, 1989).

The medical domain version of information literacy is evidence-based medicine.

Evidence-based medicine (EBM) is the integration of best research evidence with clinical expertise and patient values (Guyatt et al., 1992). The Centre For Evidence-Based Medicine in Toronto, Canada, states that the origins of evidence-based medicine date back to post-revolution Paris (CEBM, 2007), but that the current growth is most closely attributed to the work of a group lead by Gordon Guyatt at McMaster University in Canada in 1992. EBM publications, reflecting interest in this field, have grown from a lone publication in 1992 to thousands in 2007.

Studies have become increasingly critical of the value of textbook sources (Antman et al., 1992). Didactic continuing medical information may be ineffective at changing physician performance (Davis et al., 1997), and clinical journals may lack practical application (Haynes, 1993). In addition, physicians are faced with an increasing burden on their time, forced to diagnose patient findings within a matter of minutes (Sackett & Straus, 1998), and can only afford to set aside half an hour or less per week for general medical reading (Sackett, 1997). The staggering mass of information being discovered is also daunting: 500,000 articles are added to the commonly used Medline medical journal database every year, and "if a physician read 2 articles each day, every day

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