Paper BG

INTERNET RESOURCES IN MEDICAL SCIENCE

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The Internet has revolutionized the computer and communications world. It is a mechanism for information dissemination, and a medium for collaboration and interaction between individuals in various fields. Like any other field it has its impact in the field of medicine also. The major developments in the Internet like Website search, videoconferencing etc have contributed much to the field. This paper is an attempt to identify various Websites and databases available on Net in the field of medicine.

1. INTRODUCTION

Literature of a subject represents a record of achievements of human race. It is becoming more and more diverse, complex and multilingual in nature. Subjects are becoming increasingly interdisciplinary also. Literature in a subject is growing at a fast pace. In sciences, it is doubling itself every year. Traditionally information sources were primarily books, periodicals, and newspapers. The number and forms of information sources are increasing due to the varying needs and interests of users of information. It can so happen that conditions may arise when users may not be in a situation to describe what exactly they need and they may not be aware of the form of the document. This is a case especially with special libraries. In special libraries, finding information is more important than the source of information.

Internet is a result of the fast emerging technologies. Internet turned out to be one of the prominent sources of global information in a remarkably short period of time. Developments on the information technology have opened new vistas in access to information in various fields, including medicine Internet has a huge volume of information on medicine in the form of Websites, Databases, Journals, Special libraries devoted to medicine and so on. The major developments in Internet in the field of medicine like videoconferencing, Website search etc have played a very important role in the field. Sites containing medical information are popping up on the WWW everyday. One can go and find information on a certain condition or a treatment and various other services. Important web resources available in the field of medicine for a variety of users are described below along with the respective Website addresses.

2.   DATABASES ON MEDICINE

Internet has provision for access to large electronic databases. The databases like MEDLINE, AIDSLINE, AIDSDRUGS etc have vast amount of information for the users. Many sites in the Net offer free services to these databases. Let us see some of the important databases available on Net. The important databases related to medical field available in the Internet are discussed below:

2.1   Medline/ PubMed

MEDLINE is the world's largest single biomedical database, produced by the National Library of Medicine (NLM), USA. More than 3,800 journals from over 70 countries are indexed and the 8,000,000 references go back to 1966. Indexing keywords are known as MeSH terms. Even before its official launch, PubMed, freely, publicly available on the World Wide Web, has now become the predominant means of accessing MEDLINE. It has world coverage, but 88% of the citations in current MEDLINE are to English-language sources and 76% have English abstracts and it contains the citations that appear in Index Medicus, as well as the citations of "special list" journals. Special list journals include those indexed for the index to rights of the information producer. INFOTRIEVE provides Free MEDLINE with a new, state-of-the-art interface and simple point and click document ordering and searchable index of 65,000 journal titles, offering price information and turn around time estimates. PubMed offers free, open searches of the MEDLINE database in addition to other facilities such as citation matching. PubMed is produced by the National Center for Biotechnology Information, part of the National Library of Medicine, and has evolved from a fast track service for electronically published journals. Searches are made of the entire 8 million citations in MEDLINE, together with a growing number of pre-MEDLINE citations, which do not yet have MeSH index terms, and also citations supplied electronically by publishers. PubMed uses a simple, single window for search terms, and is robust to use. Simple search terms may be one or more of author last names, text words, or other keywords, and advanced retrieval expressions may also be entered. When given, MeSH headings are simply incorporated as text terms.

2.2   Embase Alert

http://www.elsevier.nl/inca/publications/store/5/2/4/6/8/9/

EMBASE Alert is a rolling 8-week online database available on DataStar, DIALOG, DIMDI, and STN. Each week it is updated with about 8,000 new records and consists of bibliographic citations and abstracts from over 4,000 international biomedical journals covered in EMBASE. EMBASE Alert records do not include EMTREE indexing terms. About 80% of the records include the complete English-language author abstracts, and many records contain the authors' keywords. The records found in EMBASE Alert appear within 5 days upon receipt of the original journal as fully indexed high value-added EMBASE records on all the major online vendors.
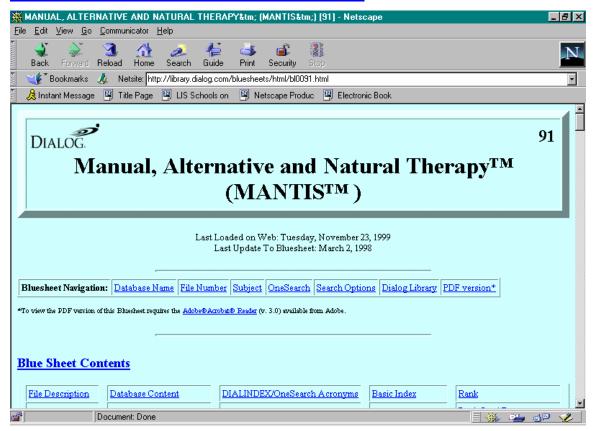
Coverage

Like the retrospective EMBASE files, EMBASE Alert emphasizes drugs and pharmacology, pharmacy, pharmaco-economics, toxicology, human medicine, biological sciences relevant to human medicine, psychiatry, public, occupational and environmental health, health policy and management, substance dependence and abuse, forensic science and biomedical engineering and instrumentation. Subscription is needed for the users.

2.3   Manual, Alternative and Natural TherapyTM (MANTISTM)

Manual, Alternative and Natural TherapyTM (MANTISTM) is a bibliographic database that provides coverage for health care disciplines not significantly represented in the major biomedical databases. International in coverage, the database contains references from more than 1,000 journals, with preference given to peer-reviewed journals. Approximately 70% of the references have abstracts. Searchable subject headings include Medical Subject Headings (MeSH®), plus a specialized supplemental controlled vocabulary in the areas of alternative medicine. Subscription is needed for use of the database.

http://library.dialog.com/bluesheets/html/bl0091.html

2.4   CINAHL Information System

http://www.cinahl.com/prodsvcs/prodsvcs.htm

The CINAHL Information System offers a wide range of services to explore and develop new products and services based on the needs of health care community. The CINAHL database is released on CD-ROM with Silver Platter Ovid Technologies. The CINAHL direct online service introduces individual access to the CINAHL database via the Internet. It also makes provision for online document delivery with full text articles on the CINAHL website. An online journal named the Online Journal of Clinical Innovations (OJCI) was developed to provide up-to-date access to research reports and innovation implementation from conferences and communication with investigators and clinicians.   New papers are added on an ongoing basis and subscribers have unlimited access. Subscription is fee based

2.5   CDC Prevention Guidelines Database

http://aepo-xdv-www.epo.cdc.gov/wonder/prevguid/search_prevguid.htm

The Prevention Guidelines Database is a comprehensive compendium of all of the official guidelines and recommendations published by the US Centers for Disease Control and Prevention (CDC) for the prevention of diseases, injuries, and disabilities. This compendium was developed to allow public health practitioners and others to quickly access the full set of CDC's guidelines from a single point, regardless of where they were originally published. This database was developed with financial support from the Information Network for Public Health Officials project.

2.6   NHS Economic Evaluation
Database http://nhscrd.york.ac.uk/cgi-bin/v1.engine?*ID=0&*DB=EECT

The NHS Economic Evaluation Database is a database of structured abstracts of economic evaluations of health care interventions. Cost-benefit analyses, cost-effectiveness analyses and cost-utility analyses are identified from a variety of sources and assessed according to set quality criteria. Detailed structured abstracts are produced.

3.   JOURNALS

The bulk of primary literature appears in journals. Journals form an important source of information in any discipline. They are is the main means of communication of scientific ideas. The information in a journal is more up-to-date than that appearing in any other source. Internet also offers a wide variety of services with electronic journals. There are a number of electronic journals devoted to medicine. There are e-journals especially devoted to physicians. In the field of health care and patient information also there exists a variety of journals. Let us examine some of them in detail.

3.1   American Medical Association   http://www.ama-assn.org/

The AMA is a voluntary membership organization of physicians. The purpose is to promote the science and art of medicine and the betterment of public health and provides quality service, products and information. AMA's work includes the development and promotion of standards in medical practice, research, and education; strong advocacy agenda on behalf of patients and physicians; and the commitment to providing accurate, timely information and discourse on matters important to the health of America. The AMA's impact on the health of the public is achieved principally through the medical profession. That leadership is realized through action and results in providing solutions to the health-related challenges that confront physicians and patients every day.

3.2   ACP Journals: (American College of Physicians)

It is a bimonthly publication that provides summaries of and commentaries on the most pertinent internal medicine-related articles from the leading medical journals. ACP Journal Club is the premier synoptic medical journal. Strict selection criteria ensure that the most important articles from over 100 peer-reviewed medical journals appear in the pages of ACP Journal Club. Each article is presented in the abstract format made standard by ACP Publications. Follow-up commentaries by clinical experts provide context, limitations, and clinical application. With the January/February 2000 issue, ACP Journal Club will expand its content to include abstracts from articles beyond internal medicine. The improved ACP Journal Club will include internal medicine plus family medicine, obstetrics, gynecology, pediatrics, psychiatry, and surgery. ACP journal charges a fee of $65.00 for Individuals and $ 88.00 for Institutions.

3.3   American Family Physician   http://www.aafp.org/afp/

American Family Physician is the official clinical journal of the American Academy of Family Physicians. American Family Physician is published semimonthly, except June, July, August and December, which are monthly. This is published by the Publications Division, American Academy of Family Physician. The journal is included in Index Medicus, MEDLARS and Cumulative Index to Nursing & Allied Health Literature. The purpose of AFP is to serve the medical profession and provide continuing medical education. It provides current updates on the diagnosis and treatment of clinical conditions managed by family physicians. It gives balanced discussions of both the strengths and weaknesses of diagnostic and treatment strategies. Also it makes provision for providing evidence-based guidelines or consensus viewpoint in preference to personal opinion. It gives patient information services and conducts online quiz. It provides comprehensive collection of career opportunities for family physicians. The opportunities are updated every 15 days and are arranged by location.

3.4   Geriatrics   http://www.geri.com/about.html

Geriatrics is a monthly clinical journal for primary care physicians whose office practices include midlife and older adults .Its mission is to provide accurate, timely, medical information that these physicians can use in their practices today. Geriatrics publishes peer-reviewed clinical articles, medical news, abstracts from medical literature, meeting reports, editorials, and continuing education articles. Photo quiz and patient information are other services. Geriatrics maintains an extensive online searchable database of past issue articles.

3.5 **Electronic Journals in Health Sciences** http://healthlinks.washington.edu/faq/i_icon.html

This mega site provides a wide range of services for patient, students, researcher, jobseeker and instructor. It provides access to MEDLINE and other important databases and offers reference services. Also offers online tutorials and continuing education in the field of medicine. It also provides links to various health-related topics.

4 REFERENCE SOURCES FOR MEDICINE

Reference sources are aimed at making information available to the users as easily as possible. Internet offers a wide variety of ready reference tools, which helps the users to choose the information they want from large heterogeneous databases. Changes in the ways that medical information is stored, accessed, and retrieved have created a wealth of health care information from which the consumer may choose. Librarians can play a critical role in supplying timely, accurate, and relevant medical information by understanding the print and electronic resources now available to aid their research. Much of the information available through the Internet is not indexed by search engines but may be included within specialized Internet resources.

4.1 Encyclopedias

Medical encyclopedias of the Internet include:

4.1.2 Medscape http://www.medscape.com

Medscape offers specialists, primary care physicians, and other health professionals the Web's most robust and integrated multi-specialty medical information and education tool. Users can choose a personal Medscape home page from an assortment of specialty sites, primary care medicine sites, and nonclinical sites such as "Money & Medicine" or "Humor & Medicine." After a simple, one time, free registration, Medscape automatically delivers the users to the site specified or that best fits the profile if no specification is made. Access to Medscape is FREE, but requires a one-time membership registration. Other Medsacpe resources include treatment updates, practice guidelines, conference summaries, library services, patient resources and multispeciality links.

4.1.2 Healthfinder http://www.healthfinder.gov/search.htm

Healthfinder is a free gateway to reliable consumer health and human services information developed by the U.S. Department of Health and Human Services. Healthfinder can lead to selected online publications, clearinghouses, databases, web sites, and support and self-help groups, as well as the government agencies and not-for-profit organizations that produce reliable information for the public. Launched in April 1997, Healthfinder served Internet users over 1.7 million times in its first year online; in 1998. Many online information resources are listed carefully and from these lists, users can get in-depth information on any topic. Rather than cataloguing the entire Internet, Healthfinder focuses on the latest and most important information needed for its users. Healthfinder receives notices from many organizations about their latest online information. Each month, a few of the most exciting new resources are chosen and announce them through the Healthfinder-l listserv. Users can subscribe to the Healthfinder-l listserv and receive announcements of exciting new resources by email.

4.2   Dictionaries

Internet provides a number of sites for dictionaries, encyclopaedia and other guides. Because of the highly specialized language of medical questions, it is important to use reputable dictionaries and guides to affirm the spelling and nature of a medical query. There are a number of good dictionaries and guides that are available for this purpose. Some of the online dictionaries available on net in the field of medicine are as follows:

4.2.1   *Infomedical*   http://home.ipoline.com/~guoli/med/dict0.htm

Infomedical is a dictionary of On-Line Medical Resources. It contains about 1400 entries of medical terms with explanations and hypertext links to resources on the Internet. Terms are arranged alphabetically. Users can click on to the particular word they wnt to know and get more information.

4.2.2   *Kaiser Permanente's Medical Glossary*   http://www.scl.ncal.kaiperm.org/glossary/

Kaiser Permanente is a nonprofit, group practice prepayment health plan that seeks to improve and maintain thehealth of its members through affordable and quality healthcare. Activities iclude Online health care and offers hundreds of health education classes. Links to various directories and phone numbers are also given as part of the service. The medical glossary contains new terms and medical conditions.

4.2.3   *List and Glossary of Medical Terms*
http://allserv.rug.ac.be/~rvdstich/eugloss/language.html

The site allows choice of different European languages. After the selection, we can call the alphabetical list of medical terms or the glossary in the language, which is selected. We can switch between the glossary, the list and the multilingual lemma collection. The multilingual lemma collection gives the translations of the term in the seven other languages. There is also an English dictionary available that gives the English definition of all terms. Provision is made for browsing through the alphabetical list of popular and technical medical terms. Users can also browse through the glossary in

which terms are ordered according to the alphabetical order of the English terms.

5. LIBRARIES

Several medical libraries are available on the Internet. Many of these sites provide searchable catalogues, special news, medical reference services, health information services etc. Some of the sites are listed below:

5.1 Health Education Library for People   http://www.healthlibrary.com/

HELP - the Health Education Library for People, is India's first Consumer Health Education Resource Center, and one of the world's largest consumer health libraries, as determined by the Medical Library Association, USA. It aims to empower people by providing them with the information they need to promote their health, and prevent and treat medical problems. The library contains over 20 free Online Full Text Books and Magazines on health and disease and has a Video cassettes n online searchable catalogue. Resources include 6000 books, 10000 Pamphlets, 500 Video cassettes and also includes CD ROMs, Newsletters and Magazines.The service is offered free to everyone who logs on.

5.2 Medical/Health Sciences Libraries on the Web
http://www.lib.uiowa.edu/hardin-www/hslibs.html

This is the official Web site of the Educational Media and Technologies Section (EMTS) of the Medical Library Association (MLA). The intent of the site is both as a communication tool for the section and to facilitate access to resources. The site maintains a number of links to medical libraries and other general sites on medicine in the alphabetical order.

5.3 Canadian Health Libraries Association   http://www.med.mun.ca/chla/english/

Established in 1976, CHLA grew out of the efforts of the Canadian Group of the Medical Library Association and the Canadian Association of Special Libraries and Information Services. Today, CHLA is a professional organization of approximately 400 individuals in the health science library field in Canada. The health science librarian promotes access to health information for all and creates and maintains conditions of freedom of inquiry, thought, and expression that facilitate informed health care decisions. The CHLA membership year extends from June 1 to May 31. Membership fees need to be prepaid in Canadian funds. It offers membership to students, institutions and on regular basis.

5.4 International Medical Libraries Ring   http://www.glenlib.demon.co.uk/medlib/

The International Medical Libraries on the Web Ring or IML for short is intended to be a World-wide collection of medical, nursing and healthcare libraries linked together on the web. The

only specification is that your site belongs to a library, which provides healthcare information either to the public or to the medical, nursing or allied professions. Your site should also consist of more than a collection of links. There is also a bulletin board on this site which you may use to discuss the Ring or anything else you would like to and all members of the IML Ring should feel free to use the Java chat room provided on the Glenfield Medical Library site to discuss matters related to medical librarianship and healthcare issues. A list of all the libraries that joined the ring and those libraries, which are waiting to join, are also given in the Website.

6. CONCLUSION

Changes in the ways that medical information is stored, accessed, and retrieved have created a wealth of health care information from which the consumer can make use of. Librarians can play a critical role in supplying timely, accurate, and relevant medical information to health care consumers by understanding the print and electronic resources now available to aid their research. Medical questions from library patrons can cover a wide variety of topics. Changes brought about by access to digital information can allow those topics to be explored in great detail. Making, what we know about library services as a starting point, one can provide a very systematic approach for arranging and disseminating the resources available in Internet in a wide variety. Starting from an orientation of the Web environment, many of the more specific demands should be satisfied. To search the millions of documents available on the web, a number of tools for search are available. Each search engine has its strengths and weaknesses. It is important to build some familiarity with each search engine in order to get the most from Internet searches. As there is no standard vocabulary or comprehensive cataloguing and quality filter, reaching the accurate and most relevant information is difficult many times. But still Internet has a rich source of information to offer for the users to keep track with the new developments in the field. Selection of the most powerful search engines which has more powerful search strategies can certainly help the user in getting what is actually wanted. A list of some important websites is given in appendix.

7. REFERENCES

1. http://www.aafp.org/afp/
2. http://www.newsdirectory.com/news/magazine/health/medical/
3. http://204.17.98.73/midlib/www.htm#Part 3
4. http://www.nytimes.com/library/cyber/travel-log/120297travel-log.html
5. http://www.maui.net/~jms/brainuse.html
6. http://neuro-www2.mgh.harvard.edu/hospitalwebusa.html
7. http://www.nejm.org/
8. http://www.nlm.nih.gov

APPENDIX

Important Websites for Medicine

Databases

CAM Citation Index**: http://altmed.od.nih.gov/oam/resources/cam-ci/**
MEDLINE**: http://www.ncbi.nlm.nih.gov/PubMed/**
EMBASE**:** http://www.elsevier.nl/homepage/search.htt
DATADIWAN**: http://www.datadiwan.de/index_e.htm**
UNCOVERWEB**:** http://uncweb.carl.org/
MEDSCAPE**:** http://www.medscape.com/
MEDIKAT**: http://www.dimdi.de/engl/hoste/mk77eng.html**

Specific Diseases

DIABETES**:** http://www.diabetes.org/
JAMA Asthma Information Center**:** http://www.ama-assn.org/special/asthma/asthma.htm
The National Institute for Health**:** http://www.nih.gov/health
Online Diabetes Resources**:** http://www.missouri.edu/~diabetes/ddl/t_links.html

Drugs

The Internet Drug Index**:** http://www.rxlist.com.
Mayo ClinicHealth Oasis**:** http://www.mayohealth.org/usp/di/usp_aa.htm

Travel Advisories

Centers for Disease Control (CDC)**:** http://www.cdc.gov/travel/index.htm

Medical Statistics

Brown University Online Catalog**:** http://library.brown.edu
FASTATS at NCHS.**:** http://www.cdc.gov/nchswww/fastats/fastats.htm
Centers for Disease Control (CDC)**:** http://www.cdc.gov/
American Cancer Society**:** http://www.cancer.org
National Cancer Institute**:** http://www-seer.ims.nci.nih.gov/
University of Michigan for Vital and Health Statistics Series**:**
http://www.lib.umich.edu/hw/public.health/health.stats.html

Medicine in the News

Harvard Health Letter**:**

http://www.countway.med.harvard.edu/publications/Health_Publications/hrttext.html
CyberTimes**:** http://www.nytimes.com/library/cyber/travel-log/120297travel-log.html
America's Health Network**:** http://www.ahn.com/
USA Today**:** http://www.usatoday.com/
CNN**:** http://www.cnn.com/health
The Washington Post**:** http://www.washingtonpost.com/
The Boston Globe**:** http://www.boston.com/

Physician Credentials

 AMA**:** http://www.ama-assn.org/aps/physdcred.htm
AMA**:** http://www.ama-assn.org/aps/amahg.htm
Medseek**:** http://medseek.com/

BMS Compendium Online**:** http://www.certifieddoctor.org/
Rhode Island Dept. of Health**:** http://www.docboard.org/ri/df/search.htm

Search Engines

AltaVista**: http://www.altavista.digital.com**
HotBot**:** http://www.hotbot.com
NORTHERN LIGHT**: http://www.nlsearch.com**