

BRIEF GUIDE TO MEDICAL INTERNET

JAROSŁAW FURMAŃSKI, RADOSŁAW SZCZĘCH,
ŁUKASZ ZNANIECKI, MICHAŁ WROCZYŃSKI

Dept. of Hypertension and Diabetology, Medical University of Gdańsk,

Abstract: Internet is a modern means of communication with a potentially great power of handling information. Nowadays, internet plays a crucial role in both medicine and health prevention. Internet services prepared by medical journals and publishers play a vital role in postgraduate education of medical professionals. Huge databases like Medline or Cancerlite are the most powerful tool for obtaining data on publications for the majority of doctors at academic centers. Internet is used for medical education of the community and the prevention of common and avoidable diseases, such as hypertension or diabetes mellitus, in which such education may decrease the risk of falling ill and developing complications. In the paper some medical internet addresses are listed and characterized.

Introduction

Medicine has been one of the fields of science that stimulated a rapid development of Internet in the last few years. The ever growing demand for medical information that doubles every five years, the amount of diagnostic data, along with the new working schemes in medicine, have made the Internet yet another clinical tool added to the list that already comprises a stethoscope and the MRI. Thanks to internet, we have already been able to consult specialists around the world within a matter of minutes, to look into patients profiles, test results, X-rays, articles, without leaving our workplace. We have also been able to get the latest information from every field of medicine much faster than with the traditional sources of information in the past.

Though virtually thousands of medical sites, services, servers with all sorts of medical information are at reach today, we have tried to choose the most relevant URLs practice-wise.

Starting points:

1. Medical Matrix — www.medmatrix.org/

One of the most comprehensive databases of medical Internet. It includes over 1000 resources of all types with relevant annotated reviews for most of them. Listings are categorized in multiple ways according to speciality, institution, subject, patient education, projects under development, and others.

2. *Virtual Hospital* — <http://vh.radiology.uiowa.edu/>

The Virtual Hospital is one of the best clinical sites on the Internet today with an abundance of clinical information. The VH aims at using the latest Internet and information technology achievements to provide education for both professionals and the public. The Virtual Hospital is categorised as information for health care providers and information for patients. Within each category, information is delivered according to the system (e.g., cardiovascular system), the type (textbooks, teaching files, simulations, journals, guidelines, etc.), or according to the department (dietary, family practice, etc.). The VH will thus soon become what its name implies: a „Virtual Hospital” with practical information on any medical topic required.

3. *Medscape* — www.medscape.com/

A very comprehensive, if not the most comprehensive medical site, created not only with medical professionals in mind, but benefitting informationally the patients as well. It contains hundreds of articles categorized according to specialities (oncology, pediatrics, orthopedics, cardiology), the type of information and others. Several search engines are also provided, such as drug search, medical dictionary, and the famous Medline, along with headline medical news and the latest on conferences, meetings, etc. The prospective internaut has to register first (that is free) to obtain a user name and password.

4. *Doctor's Guide to the Internet* — <http://www.pslgroup.com/docguide.htm>

Medical news, sites of the week, new drugs or indications, doctor's feedback, and an Internet-resource section. Thorough-going in character.

5. *Essential Links to Medical Resources*—<http://www.el.com/elinks/medicine/>

The site provides online resources to medical directories, newsletters, libraries, and other facilities, along with an index of diseases, and other health-related matters.

6. *The Global Health Network* — www.pitt.edu/HOME/GHNet/HNet.html

This is an attempt to network everyone engaged in public health and prevention worldwide.

7. *MedNexus* — www.mednexus.com/public/mnlinks1.html

A comprehensive site with information listed according to speciality, category, popular and major. Well-categorized information.

8. *MedWeb: Biomedical Internet Resources* —

<http://www.cc.emory.edu/WHSC/medweb.html>

A very up-to-date database of medical resources with sites listed according to speciality, containing, among others, aerospace medicine and tropical medicine which are hard to come by in other resources.

9. *Health On the Net Foundation* — www.hon.ch/

A thorough listing of hospitals on the Internet, Net medical support communities (listservers, newsgroups, and FAQs), and telemedicine resources. The HON

Foundation is a nonprofit organization located in Geneva, Switzerland, with a mission to build and support the international health and medical community on the Net.

10. HIV.NET — <http://hiv.net/hiv/english/index.html>

This is the European information center for HIV and AIDS that provides raw data, the links to other relevant Net resources, and a form of information-exchange desk.

11. CancerNet — <http://ismdd.med.uni-bonn.de/cancernet/cancernet.html>

The National Cancer Institute offers up-to-date information for cancer patients, as well as physicians, on cancer prevention, prognosis, staging and treatment, drugs, support, screening, and clinical trials.

Medical Journals and Publishers

Internet services prepared by medical journals and publishers play a vital role in postgraduate education of medical professionals. They contain mainly abstracts, recommendations, ratings and examples of full publications. A new class of electronic journals was thus created.

1. MedWeb: Electronic Newsletters and Journals — http://www.gen.emory.edu/MEDWEB/keyword/electronic_publicaions.html

A comprehensive guide to journals, newsletters, and tables of contents available online. A 451Kb (!!!) file that lists all the electronic medical publications available on the Internet.

2. British Medical Journal — www.bmj.com/bmj/

Contains selected abstracts of the current issue and archives.

3. JAMA (Journal of American Medical Association) — www.ama-assn.org/

The site contains full text articles and archived abstracts.

4. Lancet — www.thelancet.com/

Requires registration

5. Institute of Rural Medicine in Lublin — <http://www.imw.lublin.pl/>

Constitutes a link to the journal „Medycyna Ogólna” (General Medicine)

6. Medycyna Praktyczna (Practical Medicine) — <http://www.mp.pl/>

A large site containing lots of links to other medicine - oriented sites, information on conferences, article abstracts, initiatives and actions taken by the Journal.

7. Państwowy Zakład Wydawnictw Lekarskich

(Polish National Medical Publishing House) — <http://www.pzwl.pl/>

Home Page of the largest medical publisher in Poland. It briefs the user on the latest publications, includes the price list and offers an opportunity to buy them online.

8. Galen — Elektroniczna Gazeta Lekarska (Electronic Medical Journal)
— <http://www.lublin.pl/imw/galen.html>

One of the first medical publications on the Polish internet.

Patient Education

It is essential to promote a healthy way of living in the community. Various approaches and methods are employed in the process to address effectively the young generation in particular. Internet is a modern means of communication with a potentially great power of handling information. Consequently, internet should be used for medical education of the community and the prevention of common and avoidable diseases, such as hypertension or diabetes mellitus, in which such education may decrease the risk of falling ill and developing complications. Prevention is essential to reduce mortality, morbidity and complications from chronic diseases. The optimal preventive management requires multifactorial correction of all the risk factors. A well known principle of the mass market („profits are larger when small amounts are taken from the masses than in the situation when large amounts are taken from the few rich people”) applies to many community health hazards and can illustrate a fundamental principle in the strategy of prevention: the exposure of a large number of people to a low risk is likely to produce more cases than the exposure of a small number of people to a high risk.

Many medical universities, organizations and societies are creating the wwvs for patients to ask questions and to get an expert answer. Often they are enriched with pictures and algorithms, medical term dictionaries, and basic information on the commonest drugs. Health self-consciousness of the patients is thus boosted considerably. As an example of the role of internet in patient education, a description of several wwvs is given below.

1. Medicine Net — <http://www.medicinenet.com>

The site contains information on certain diseases and treatment, medicaments, along with a handy medical dictionary, and medical news. Poison control centre and first aid information are valuable additions to the site.

2. Mediconsult — www.mediconsult.com/

Owners of this site advertise it with slogan „Medical Web destination, Patients use most”. Indeed, this site contains loads of medical information rendered especially for patients use, providing descriptions of specialities, diagnosing procedures, drug information, etc., served in an easy to use form to navigate through and understand the site. The site constitutes also many links to other patient- related resources.

3. Diabetes.com — www.diabetes.com/

A lot of information for patients on diabetes mellitus and the related subjects such as nutrition, healthy lifestyle, sporting.

4. Reuters Health — www.reutershealth.com/

The site is divided into two sections, for patients and for professionals. The section for patients comprises novelties about hot medical subjects for non-professionals. Explanations provided there often put things straight.

5. Med Help International — <http://medhlp.netusa.net/index.html>

The site is said to be the largest collection of information for the patients available on the Internet. Graphically not as attractive as mediconsult.com, it certainly surpasses it in the contents. Hundreds of handouts on practically every topic are included.

6. Patient Self- Assessment — www.mcw.edu/midas/health/

A confidential experiment for doing self-assessment on the Web. The visitor fills in a 36 question-form and his data are seen against the database.

7. Informed Drug Guide — www.infomed.org/100drugs/

The site provides information on 100 drugs and claims that each was „selected in such a way that approximately 90 percent of all the problems occurring in primary medicine can be dealt with adequately (with these drugs) as long as the problem can be treated pharmacologically”. It is meant to be an aid to the daily practice and educational guide for the patient.

8. Global Health Center — <http://www.healthnet.org/programs/promed-hma/9505/msg00059.html>

This service provides the visitor with consultations via e-mail or in real time. The visitor picks up a field (such as cardiology) and a respective medical professional, asks a question and gets the answer in real time or via e-mail.

9. Blue Cross Blue Shield — <http://www.bcbsma.com/>

The site contains Blue Cross guides to patient's handouts, focusing especially on nutrition, pregnancy, allergies, exercise. The site offers opportunity for asking general questions.

10. International Food Information Council — <http://ifinfo.health.org/>

One of the most comprehensive nutrition information sites on the Net. Information is categorized for professionals, parents, consumers, etc., and also covers food safety.

11. Nutrition Information for Consumers — <http://ifinfo.health.org/>

IFIC online handouts for the Public: tips for healthy eating, Food allergy, additives, caffeine, sugar, and FAQ along with answers to many questions that bother „wannabe-healthy” non-professionals.

12. FDA Center for Food Science and Nutrition — <http://vm.cfsan.fda.gov/index.html>

An excellent source of information on nutrition from one of the most strict organizations of the globe – Food and Drug Administration. A very well prepared section on food contaminators, chemicals, pesticides.

Medical Education

1. *Healthgate* — www.healthgate.com/

One of the most comprehensive educational sites for doctors on the Internet, containing excellent implementation of Medline. Information is categorised according to speciality, type (textbooks, multimedia files). Healthgate takes part in the CME (Continuing Medical Information) programme, and provides links to great databases and search engines.

2. *MedNexus* — www.mednexus.com/

Many different services, some of them for a fee: discussion forums, products, article searches, slide preparation, speaker's bureau. Library services include searches, bibliographic references, proof reading.

3. *The Interactive Patient* — <http://medicus.marshall.edu/medicus.htm>

This is the CME- certified education site using case studies. The user examines the patient interactively and picks up a diagnosis, and a treatment plan. His choices are then evaluated and results sent via e-mail.

4. *Case Notes* — www.leads.ac.uk/htbin/bionet/wwwcases/0/start/

The site with an interactive programme using forms that lead the visitor through case presentations. One has several options of what to do, for example, taking a history, doing lab tests, or X-rays. Very good for students to give them a feel for the clinical exam.

5. *Polish Society of Cardiology, Warsaw Section* — www.ptk.waw.pl/

The site containing excellent information on cardiology in Poland, with guidelines, diagnostic proceedings, etc.

6. *Nadcisnienie.med.pl (Hypertension)* — www.nadcisnienie.med.pl/

Internet site of the Polish Society of Hypertension. Included there are the latest statements and guidelines of PTNT and other societies. Handouts on how to self-measure blood pressure are also given, along with information on nutrition, norms of BP, etc. Visitors may ask questions.

Medline

Huge databases like Medline or Cancerlite are the most powerful tool for obtaining data on publications for the majority of doctors at academic centres. Addresses listed below contain best implementations of medline on the Internet:

1. www.medscape.com/

2. www.healthgate.com/

3. www.kfinder.com/

Medical Projects on the Internet:

1. *Visible Human Project* —

http://www.nlm.nih.gov/research/visible/visible_human.html

The National Library of Medicine of USA, in collaboration with several other institutions has developed the Visible Human. This is a series of cross-section images of a cadaver at 1 mm intervals. Also included are CT and MRI images that coincide with these cross-sections. The entire image set for the Visible Human is 15 Gb in size, and can be bought as a set of CD-ROM disks from NLM. The project includes also links to several excellent anatomy sites worldwide, many of them being interactive.

2. *Human Genome Project Internet Resources* —

http://dbwww.gdb.org/gdb/docs/genomic_links.html

The Service concerned with the Human Genome Project which focuses on creating a map of the whole human genome, the task impossible to perform without Internet. The site contains WWW servers for each chromosome, and a searchable database of genetics and genetic disorders.

3. *The German Health Net (das Deutsche Gesundheits Netz)* —

www.weba.com/

This network offers advanced techniques of telemedicine; the visitor could conduct an arthroscopy procedure performed in Munich via internet while standing at the console at Medica'96 show.

Pharmaceutical Companies

A totally separate group of medical websites is created by pharmaceutical companies. These sites are dominated mainly by information on the drugs produced. However, in order to make them less commercial in character, the sites are continuously enriched with information for people concerned about their health. Also covered are prevention and health promotion along with some description of the commonest diseases. Pharmaceutical companies are often sponsors of other non-commercial websites as well. Several examples of such services are given below:

1. *Pfizer Pharmaceuticals* — www.pfizer.com/

2. *Novartis* — www.novartis.com/

3. *Roche* — www.roche.com/

4. *Glaxo-Wellcome* — www.glaxowellcome.co.uk/home.html

5. *Servier* — www.servier.fr/