

A clinician's guide to resources on evidence-based medicine

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Baylor Health Care System has always been dedicated to providing the highest quality health care. As we enter the next millennium, new ideas and strategies for health care improvement continue to be explored. Evidence-based medicine (EBM) is a concept that is being emphasized to improve patient care.

Physicians have typically practiced medicine under the guise of "traditional care." This usually involves basing decisions on the current standard of practice, which relies on colleagues, panels of experts, and other groups of decision makers. Decisions based on habits should be replaced with decisions based on objective research, which provides a scientific basis for treatment choices.

Today, there is a clear trend towards the use of EBM, in which clinical science helps the practicing physician formulate treatment plans. Of course, this does not mean that practicing medicine will be a more simplistic endeavor. Judgment based upon a patient's unique circumstances always plays a role in any decision. In actuality, EBM should be used as a guide in formulating treatment decisions and must never be automatically accepted. The prudent physician should carefully weigh sound evidence as it relates to a particular scenario, incorporate the data as appropriate given the myriad variables involved, and discuss the information openly with the patient to make decisions together on a particular treatment. Shared decision making becomes an integral part of this process.

An overwhelming amount of information is available to both patients and physicians. Interpreting scientific data can be a formidable chore that discourages objective, critical appraisals of the literature. Trying to discern what constitutes the latest evidence in a particular subject can be challenging.

In an attempt to promote an efficient, timely search of the literature, I provide a list of sources to help the clinician wade through the clutter of information to make the best possible treatment decisions. Most sources are on the Internet, as this is the easiest way to acquire pertinent information quickly. However, the Internet can provide its share of frustration, particularly with general Web searches, which frequently provide useless information. Many medical-based Web sites do not provide the data we seek or at best are of inconsistent quality.

Some "jewels" do exist, which have been found to help the clinician find the relevant data needed to practice EBM. These Web sites have been recommended through the help of Group Health Cooperative of Puget Sound (Washington), regarded as a world leader in EBM. The following sites have a common ap-

proach to acquiring, critically appraising, and integrating information for day-to-day practice.

WEB-BASED RESOURCES FOR OBTAINING EVIDENCE

1. **The Cochrane Library:** <http://updateusa.com/clibpw/clib.htm>

The Cochrane Library is a worldwide effort to make available critically appraised randomized controlled trials. Many studies are included in meta-analyses. The library makes use of information from a number of sources, including published reports available from databases such as MEDLINE as well as unpublished data. A password is required.

2. **Bandolier:** <http://www.jr2.ox.ac.uk/Bandolier>

Oxford has produced this monthly journal since 1994. Bandolier has a specialist subsite index and presents bullet points of EBM.

3. **Nation's Health Service [UK] Centre for Reviews and Dissemination:** <http://nhscrd.york.ac.uk/welcome.html>

This site allows search of 2 publicly available databases of structured abstracts: the Database of Abstracts of Reviews of Effectiveness (DARE) and the NHS Economic Evaluation Database (NEED). It is especially helpful for developers of clinical guidelines.

4. **Centre for Research Support:** <http://www.ceres.uwcm.ac.uk/frameset.cfm?section=trip>

This Web site contains the TRIP database, which allows simultaneous searching of 26 databases of hyperlinks from evidence-based sites worldwide. At present there are >10,000 links to evidence-based topics and >4000 reviews. This Web site is an excellent way to find critical systematic reviews as well as appraisals of individual studies.

5. **ACP journal club:** <http://www.acponline.org/journals/acpj/jcmenu.htm>

Through this site, the user has access to recent studies and reviews that warrant immediate attention. The club reviews >100 journals, selects articles according to certain criteria, provides a structured abstract for them, and adds a commentary by a clinical expert.

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6. UpToDate: <http://www.uptodate.com>

UpToDate is a clinical reference tool for internal medicine generalists and subspecialists. It offers thousands of original topic reviews written by experts. Each review provides detailed recommendations.

7. Clinical Evidence: <http://www.clinicalevidence.org>

The text version of *Clinical Evidence* has recently been made available to Baylor physicians, and print subscribers have access to the online version as well. *Clinical Evidence* summarizes evidence for a variety of clinical conditions. This user-friendly, practical resource is updated twice a year. It uses explicit methodology for selecting which evidence to summarize, identifies gaps in the evidence, and balances the benefits and harms of a particular intervention.

8. Traditional databases organizing the medical literature (e.g., MEDLINE)

To use traditional databases effectively, the clinical team poses questions and works closely with a librarian to refine search strategies and decide what databases to search. This approach requires critical appraisal before application to clinical practice. Two sites are used most frequently for searching:

Grateful Med: <http://igm.nlm.nih.gov/> This traditional access for MEDLINE is versatile, but assistance is frequently needed in addressing specific questions.

PubMed: <http://www4.ncbi.nlm.nih.gov/PubMed/clinical.html> This improved access to MEDLINE includes filters to search for answers to specific clinical questions—i.e., information about diagnosis, etiology, prognosis, and therapy.

WEB-BASED RESOURCES THAT SUPPORT EBM PRACTICE AND SKILLS

1. Nation's Health Service [UK] Centre for Evidence-Based Medicine: <http://cebm.jr2.ox.ac.uk/>

This center in Oxford promotes EBM and supports anyone who wants to make use of it. The toolbox feature on the site is particularly helpful; it provides resources such as a glossary of

EBM terms and a description of levels of evidence as well as assistance in applying calculations such as pretest probabilities and likelihood ratios. Overall, this site is considered excellent.

2. User's guide to the medical literature: <http://www.cche.net/principles/>

This site features the entire *JAMA* series on evaluating the medical literature. It has links to tools for improving EBM skills and describes approaches to critically appraising the literature.

3. New Zealand Guidelines Group—tools for guideline development: <http://www.nzgg.org.nz/tools.cfm>

This page explains the steps involved in developing clinical guidelines. It also has links to pages that discuss development of guideline teams, the benefits of developing new guidelines vs evaluating and adapting existing guidelines, and resources for critical appraisal.

THE FUTURE: PATIENT CARE SITES THAT PRESENT EVIDENCE

Web sites directed to patients that list evidence-based recommendations for a particular condition are beginning to emerge. This is the future of health care, as influenced by EBM and shared physician-patient decision making. The best example is the University of California San Diego mammography site (<http://mammography.ucsf.edu/inform/index.cfm>), which provides women with quantitative information about the benefits, harms, and uncertainties of mammography.

The role of EBM in shaping the drive towards a more informed patient and towards shared decision making with physicians is quite profound. As clinicians we must be able to adapt to these important changes since society demands that we do so. This will shift the focus away from a paternalistic relationship with patients towards a partnership. The physician is now a team leader, coordinator, teacher, and navigator. Patients develop a greater sense of involvement in and responsibility for their treatment. Objectively improved patient outcomes and an enhanced sense of satisfaction for both patient and physician are the ultimate results.