

Internet Resources for Practice and Teaching of Evidence Based Medicine

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INTRODUCTION

A recent issue of the British Medical Journal (BMJ) has published a list of 'sacred cows' that should be 'culled' immediately. Visitors to the BMJ website voted for the 10 most sacred cows in current practice of medicine and not unexpectedly, evidence based medicine (EBM) topped the list amongst the potential 43 targets. In a commentary that followed, one author remarked: "Medicine has its passing fashions, just like everything else. The problem is that people most closely caught up in a movement are also least likely to realise their true status as fashion victims⁽¹⁾." As sarcastic as it appears to be, there is some truth in the statement. EBM is the trendiest thing, the latest fashion in our evolving world, but it does not necessarily mean that this is the topic that we understand most.

What is it that makes the practice and teaching of EBM so difficult? The vast majority of us received our medical education at the time when EBM was still in the budding stage and its concepts were not so prevalent. Those of us who have tried to catch up with this new idea often gave up when faced with the daunting task of locating appropriate reading materials and resources. Being a new and fast-paced field, printed materials on the practice of EBM are hard to come by and those that are available become obsolete with astonishing rapidity, forcing us to look for alternative sources. Surprisingly, tremendous amount of information on EBM is available on the Internet. There are Internet sites dedicated solely to the practice and teaching of EBM and most of these are updated regularly. A number of well-known sites deal with theoretical foundation of EBM including its philosophical aspects. Others are in journal club format and contain critiques and reviews of articles published in reputed journals. Most of these sites allow visitors to recommend articles of their choice for critique and some even invite visitors to become reviewers. Others, mostly sponsored and maintained by government and professional organizations, contain lists of reviews, meta-analyses, guidelines, and best evidences. Those who are interested in teaching EBM will find useful teaching materials such as ready-to-show presentations. Finally, for those who prefer to participate in discussions, options are also available to join several Listserv groups.

I have compiled a selective list of Internet resources on EBM catered towards the needs of busy practitioners. These sites are chosen based on their usefulness and relevance of contents, easy browsability, and representativeness. The sites are categorised: a) General, b) Journals and journal clubs, c) Speciality-based, and d) Discussion groups. Sites that require subscription or commercial sites have not been listed.

GENERAL

Health Information Research Unit, McMaster

University: <http://hiru.mcmaster.ca/>

This is my usual starting point for Internet browsing on EBM and definitely one that I would recommend to use as a reference source. McMaster University can claim credit for inception of the concepts of EBM and its subsequent popularity. Some of the projects you will find useful include American College of Physicians' Journal Club (ACP Journal Club), best evidence (needs subscription), Evidence Based Medicine Project, and Guideline Appraisal Project. Also included in this site is a series of elegant articles on EBM that have appeared in the JAMA. Most of the other EBM sites also have links to this specific site.

Centre for Evidence Based Medicine (CEBM):

<http://cebm.jr2.ox.ac.uk/>

CEBM spearheaded the movement of EBM in the UK and maintains this site as a resource center. Readers will find topics like the CATbanks (Critically Appraised Topics), a glossary of terms used in EBM, two useful sections entitled 'How to Practice and Teach Evidence Based Medicine' and 'EBM Toolbox'. For the teachers in EBM it also has prepared scenarios and power point-based presentations. This site, along with the HIRU site, are probably the two most useful resources for teaching EBM.

Cochrane Library Data Base:

<http://hiru.mcmaster.ca/cochrane>

The Cochrane Library, synonymous with its rigorous standards in conducting meta-analysis and systemic reviews, also has an extensive home page on EBM. Readers can access this site to view abstracts of completed meta-analyses and reviews. These reviews and meta-analyses are

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updated quarterly to incorporate new evidences. Full-length texts are available only with subscription. Fortunately most of the health science libraries in Singapore have the full text versions on CD-ROM. Also ready to download from this site is Review Manager Software (RevMan) which can be used by serious readers interested in conducting reviews themselves.

National Guideline Clearing House (NGC):

<http://www.guideline.gov/>

The National Guidelines Clearinghouse (NGC) is jointly sponsored by the U.S. Dept. of Health and Human Services, Agency for Health Care Policy and Research (AHCPR) in partnership with the American Medical Association (AMA), and the American Association of Health Plans (AAHP). These guidelines deal with pure clinical practice as well as other patient care related areas. Almost all the well-known published clinical guidelines are available for viewing along with comparison materials. Also, readers are encouraged to recommend specific clinical guidelines of their interest, if not listed in this site, for inclusion.

New Zealand Guideline Group: <http://www.nzgg.org.nz/>

Browsing through this site will lead you to 'Tools for Guidelines Development and Evaluation' and to 'Critical Appraisal Resources'. The first contains elaborate step-by-step instructions on guidelines for development and also ways of evaluating guidelines that are in practice. This site allows you to register a guideline and to become a member of the discussion group. Critical Appraisal Resource is more like a collection of links leading to various Internet sites listing databases and softwares, resources for teaching EBM, and selected bibliographic references.

JOURNALS AND JOURNAL CLUBS

Journal Club: <http://www.journalclub.org/>

This journal club has been in operation since late 1995 and contains brief critiques and comments about research articles related to adult medicine. The sources of articles are mainly from the New England Journal of Medicine, Annals of Internal Medicine, JAMA and the Lancet. There is a built-in search engine for easy retrieval. Being in an interactive format, it allows readers to send comments to other members. This is probably one of the most widely visited Internet journal clubs. You can subscribe to this site free-of-charge and receive newly posted articles via email.

Evidence Based Journal Club:

http://PedsCCM.wustl.edu/EBJournal_club.html

This site contains peer-reviewed critical analyses of clinical trials pertinent to pediatric critical care medicine. The guidelines for review are derived from the McMaster University. You can send an email to the editors and

become a listed reviewer yourself or you may recommend an article of your choice for review. It also contains many important and interesting links to other EBM sites. For example, a click to the link "Resources for Practicing Evidence Based Medicine" will lead to a series of articles on critical appraisal of medical literature, basic statistics for clinicians, full text series of articles on systemic reviews and meta-analysis. This is one of my most frequently visited sites and I would highly recommend bookmarking this site.

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

Bandolier is produced monthly in Oxford University. It covers a wide range of topics of general medical interest and all issues are available on the Internet free of charge. The topics are easily retrievable and indexed nicely. The site also includes simple web-based tools for statistical methods like calculation of Number Needed to Treat (NNT) and some other teaching materials on EBM as well.

POEMs Patient Oriented Evidence that Matters:

http://www.infopoems.com/POEMs/poems_home.htm

This is a Family Practice oriented evidence based journal club. For each issue in POEMs, eight articles are chosen from eighty journals relevant to primary care practice. This site emphasizes reviewing those articles that deal with common or important primary care questions such as patient-oriented outcomes measures and quality of life care. On the downside, you need to subscribe to the Newsletter and need Adobe Acrobat Reader to view the sample newsletter.

SPECIALITY BASED

Centre for Evidence Based Mental Health:

<http://cebmh.warne.ox.ac.uk/cebmh/>

This site is dedicated to the practice of EBM applied to mental health. Topics related to psychiatry include collections of brief teaching scenarios for teaching EBM and a full-text version of guidelines from the Royal College of Psychiatry. General readers will also find this site useful especially the section entitled 'Toolkit'. This link will lead to 'How to set-up your own evidence based journal club' - a step-by-step guide to form a journal club in your own institute. A pull down menu allows you to get definitions and explanations of common terms used in EBM. It is also linked to Evidence Based Mental Health Journal and other web-based statistical tools.

Pediatric Evidence Based Medicine:

<http://depts.washington.edu/pedebm>

This is a web site devoted to pediatrics and related subspecialties. The site contains critically appraised topics as well as utilities of commonly used diagnostics tests. For example, the sensitivity, specificity, and likelihood ratio of finding bacteria during urinalysis in a catheterised specimen in symptomatic children with

fever (sensitivity 98%, specificity 94%, positive predictive value 41%, and likelihood ratio of positive test 16) can be found by just pulling down 'urine analysis' from the menu. The site is still under construction and allows readers to contribute critically appraised topics.

Evidence Based Nursing: <http://www.york.ac.uk/depts/hstd/centres/evidence/ev-intro.htm>

This site is owned by the University of York and is part of the national network of Centers for Evidence-Based Clinical Practice. This relatively new site is still under construction and contains fewer resources than other Internet sites. I am listing this site primarily because such exclusive EBM resource dedicated to the nursing profession is a rarity.

LISTSERV

Medical Education Listserv: <http://www.aamc.org/meded/software/start.htm>

This site is owned and operated by the Association of American Medical Colleges (AAMC), the apex body on medical education in the USA. The discussions concentrate on various aspects of medical education including EBM. This site is frequented by prominent experts in medical education and postings are rich and informative. To subscribe, follow the simple steps in this web address.

Evidence-Based-Health:

E-mail address: mailbase@mailbase.ac.uk

To subscribe, send the following as the sole content in

the body of message: *join evidence-based-health firstname lastname stop*. Replace 'firstname' and 'lastname' with your own name and leave the rest exactly the same. Also, leave subject line blank.

This is a busy discussion group, although some of the discussion may be centered around pure clinical issues. Nevertheless, the site is useful for EBM and enthusiasm of the subscribers is a plus point.

How to Teach EBM (especially medical residents):

E-mail address: listserv@health.nyam.org

To subscribe, send the following as the sole content of the body of message of your email: *subscribe EBMNY firstname lastname*. Replace 'firstname' and 'lastname' with your own name and leave the rest exactly the same. Also, leave the subject line blank.

This discussion group will be useful for those who are in teaching EBM especially in clinical practice. Participants can share their own experiences, materials and questions about teaching EBM with others.

I hope this short list will reduce the gap between our desire for knowledge and available resources and help readers get into the fun part of learning and teaching EBM. At the least, I hope we would not fall prey to being 'fashion victims'.

Happy browsing.

REFERENCES

1. Mark Pettierew. Sacred cows: To the abattoir! *BMJ*. 1998; (317):1720-1.



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