

Guide to dental resources on the Internet Part 2: Evidence-based dentistry

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Web sites to help dentists keep up-to-date with advances in dentistry and to manage patients with complex needs and demands.

This article is the second in a series of articles on the subject of dental resources on the Internet. Keeping up-to-date with advances in dentistry and being able to manage patients who have complex needs and demands is a challenge for practising dentists. Dentists are inundated with information about new techniques, procedures, materials and products. The Internet is rapidly becoming a valuable source of information for all healthcare professionals, as well as for patients. However, information on the Internet can be uncontrolled and is generally unevaluated and seeking the relevant information can be time consuming, confusing and frustrating. Busy practitioners looking for evidence for patient care need resources that have been identified and validated if the Internet is going to be a practical tool for evidence-based dentistry. There are, however, a number of well-developed, highly credible and useful resources available online that provide evidence-based information.

Currently, many healthcare decisions are based principally on values and opinions – opinion-based decision-making. This is now changing. As the pressure on resources increases, decisions will have to be made explicitly and publicly. The healthcare decision-maker (*i.e.* anyone who makes decisions about groups of patients or populations) will have to practise evidence-based decision-making. Every decision will have to be based on a systematic appraisal of the best evidence available. First of all, the best evidence available relating to a particular decision must be found. Thus, as the pressure on resources increases, there will be a transition from opinion-based decision-making to evidence-based decision-making.

Evidence-based healthcare is an approach to decision-making in which the clinician uses the best evidence available to decide upon which treatment option best suits the patient. This article will focus upon evidence-based dentistry and the Web sites which we have found to be the most helpful for learning, teaching and practising evidence-based care.

The Cochrane Collaboration

The Cochrane Collaboration <www.cochrane.org> 'is an international non-profit and independent organisation, dedicated to making up-to-date, accurate information about the effects of healthcare readily available world-

wide. It produces and disseminates systematic reviews of healthcare interventions and promotes the search for evidence in the form of clinical trials and other studies of interventions'. A major product of the collaboration is the Cochrane Database of Systematic Reviews <www.nelh.nhs.uk/cochrane.asp> which is a rapidly growing collection of regularly updated, systematic reviews of the effects of healthcare, maintained by contributors to the Cochrane Collaboration. In systematic reviews evidence is included or excluded on the basis of explicit quality criteria to minimise bias. Data are often combined statistically, with meta-analysis techniques, to increase the power of the findings of numerous studies each too small to produce reliable results individually. The database is published in the Cochrane Library, which is freely available to NHS staff, patients and the public in England through the NeLH. The abstracts of the Cochrane Reviews can be browsed or searched and provide a valuable source of healthcare information.

The Cochrane Oral Health Group

The Cochrane Oral Health Group <www.cochrane-oral.man.ac.uk>, based in Manchester, 'aims to produce systematic reviews which primarily include all randomised controlled trials ... in oral health'. This Web site lists reviews and protocols relevant to

oral health and there are direct links to the abstracts. This Web site provides information about ways to get involved with Cochrane and also lists information about courses in evidence-based practice in dentistry.

Centre for Evidence-Based Dentistry

The Centre for Evidence-Based Dentistry <www.cebd.org> is a comprehensive Web site dedicated to developing and promoting evidence-based dentistry world-wide. This organisation, based in Oxford, is a central resource for dentists interested in evidence-based practice. It is well organised and has good links to other centres, books and journals, teaching tools, guideline sites, search sites and discussion lists. In the tools section, there are aids for teaching and learning evidence-based skills. This useful site also offers a link to the *Journal of Evidence-Based Dental Practice*.

Centre for Evidence-Based Medicine

Also based in Oxford is the Centre for Evidence-Based Medicine <www.cebm.net>. This extensive Web site provides authoritative information on a range of issues related to evidence-based healthcare and provides support and resources to anyone who wants to make use of them. Of particular interest here is the

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CATbank. 'The CATbank is a storage and retrieval facility for a collection of CATs (Critically Appraised Topics)'. A CAT is a document that is created in response to a clinical question. It summarises an individual item of evidence and presents the results in an easily understood form.

Evidence-Based Dentistry

Evidence-Based Dentistry <www.nature.com/ebd> is a joint publication of the British Dental Association and the Nature Publishing Group. It helps clinicians keep abreast of the best available evidence in the latest developments in various aspects of clinical dentistry. The review articles are summarised succinctly and are commented on by experts. Subscriptions to the journal include online access to all issues from 1988. Non-subscribers have access to abstracts online.

PubMed

PubMed <www.ncbi.nlm.nih.gov/entrez> is a service of the U.S. National Library of Medicine. It 'includes over 15 million citations for biomedical articles back to the 1950's. These citations are from MEDLINE and additional life science journals. PubMed includes links to many sites providing full text articles and other related resources.' The MEDLINE database is the primary component of PubMed, covering medicine, nursing, dentistry, veterinary medicine, healthcare systems and preclinical sciences. It includes references to articles from 1966 to the present. New citations are added weekly. The database has an easy to use, integrated, text-based search and retrieval system.

Bandolier

Bandolier <www.jr2.ox.ac.uk/bandolier> is 'an independent journal about evidence-based healthcare'. The electronic version has over one million visitors per month and is a source of high quality information for healthcare professionals and patients. The impetus behind *Bandolier* was to find information about evidence of the effectiveness of healthcare

interventions and to publish the results as simply as possible. Information comes from systematic reviews, meta-analyses, randomised trials and high quality observational studies.

CONSORT

The CONSORT statement <www.consort-statement.org> 'is an important research tool that takes an evidence-based approach to improve the quality of reports of randomized trials'. It provides guidelines for reporting the findings of a randomised control trial. It includes a 22-item checklist and a flow diagram which will enable readers to understand exactly what happened in a randomised control trial in a quick and organised way. The guidelines help the reader judge the eligibility and the relevance of the study's findings.

CASP

CASP (Critical Appraisal Skills Programme) <www.phru.nhs.uk/casp/casp.htm> is a UK project which aims to develop skills in critical appraisal of evidence about the effectiveness of the delivery of evidence-based healthcare. CASP offers workshops, introducing people to the ideas of evidence-based medicine, systematic reviews and the Cochrane Collaboration. There is also a network which aims to share ideas and good practice on how to find evidence of clinical effectiveness, critically appraise it and act on this evidence.

International Centre for Evidence-Based Oral Health

The International Centre for Evidence-Based Oral Health <www.eastman.ucl.ac.uk/iceph> is based at the Unit of Periodontology, Eastman Dental Institute, University College London. It is 'a research-based organisation developing the best evidence for prevention, diagnosis and treatment in oral healthcare with a particular interest in periodontal diseases and implantology'. This Web site provides several fully downloadable systematic reviews and other publications focusing on periodontology. The centre also

provides generic training in conducting systematic reviews in oral healthcare.

National Institute for Clinical Excellence (NICE)

NICE <www.nice.org.uk> issues guidance on current 'best practice' to the NHS. It issues 'recommendations on treatments and care using the best available evidence'. It has guidelines on wisdom tooth removal and dental recall frequency.

Scottish Intercollegiate Guidelines Network (SIGN)

A collection of evidence-based clinical guidelines <www.sign.ac.uk> all of which can be downloaded free of charge, covering a wide range of topics from all the medical specialties.

Netting the Evidence

Netting the Evidence <www.nettingtheevidence.org.uk> 'is intended to facilitate evidence-based healthcare by providing support and access to helpful organisations and useful learning resources, such as an evidence-based virtual library, software and journals'. The site is well organised into the relevant subject areas and links to each topic are available on each page.

SUMMARY

The Internet is an important source of information for all healthcare professionals; as well as for the consumers of healthcare. There are a number of well-developed, highly reliable and useful resources available online that provide excellent evidence-based information. Although these sites are good, there is still a need to work through these sites separately. Future developments may include the creation of a 'super-site' which contains all the relevant information to save trawling through several different sites.

The principles of evidence-based dentistry – finding the best information quickly when it is needed, assessing its quality and determining its relevance – will help clinicians to use their research evidence in making all their important everyday clinical decisions.