

1. Introduction

The concept 'evidence-based medicine' was first used by David Sackett and colleagues at McMaster University in Ontario, Canada, in the early 1990s. It means

'...the integration of best research evidence with clinical expertise and patient values.'¹

Thus the aim of evidence-based practice (EBP) is to improve the quality of information on which decisions are made.



EBP provides resources to help health professionals find the best-quality information to answer their clinical questions. Without these resources, health professionals become overloaded with information, and don't have the time to appraise all the current material published.

In 1972, Archie Cochrane, a British epidemiologist, became concerned that most decisions about interventions were based on an unstructured selection of information, of varying quality.

When making choices at home, such as what car to buy, we usually do some background research, for example ask friends, look at car magazines, watch television programmes about cars, etc. We don't have all the answers, not as professionals and not as human beings. We may have gut instincts to guide us, and these can be useful. But you cannot base your choice on gut instinct. Intuition based on professional expertise is part of the evidence-based practice concept, and can be applied to patient care, as long as it is supported by the best available research evidence.

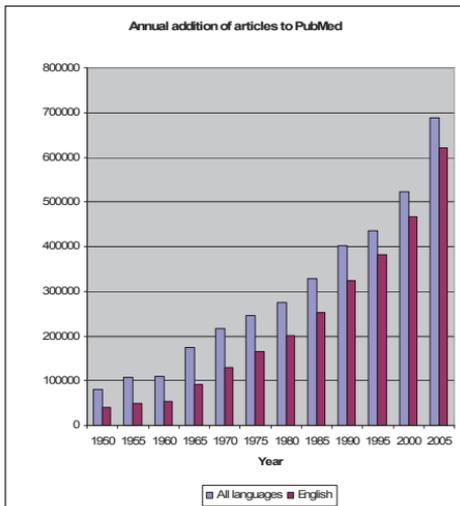
Why search?

Searching skills are a necessity for all clinicians who want to stay up to date with best practice. Given the vast increase in research publication and the improved access to research via open access journals, health professionals

1 Sackett DL, Strauss SE, Richardson WS, Rosengerg W, Haynes RB. *Evidence-based Medicine: How to Practice and Teach EBM*. Edinburgh: Churchill Livingstone, 2000.

2 Searching Skills Toolkit

need to know where and how to find the best evidence. In 1999 there were an estimated 32 000 medical journals around the world;² the medical literature expands at a rate of 7% per year, doubling approximately every 10–15 years.³ Currently 400 000 articles are added to the biomedical literature each year.⁴



Of note, 50 years ago the majority of research was published in languages other than English, whereas currently almost 90% of articles are published in English.

Open access resources, such as Biomed Central (www.biomedcentral.com), provide access to 190 peer-reviewed journals covering a range of health-related specialities.

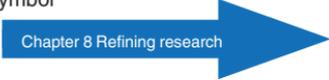
Reading and reviewing all the literature is not feasible for anyone, let alone busy health professionals. There is a range of resources available to help health professionals find the relevant information they require, but some sources contain better-quality information and should be targeted first.

- 2 Library and Information Statistics Unit. *Library and Information Statistics Tables, 1998*. Loughborough, UK: University of Loughborough, 1999.
- 3 Price DS. The development and structure of the biomedical literature. In: Warren KS (ed.) *Coping with the Biomedical Literature: A Primer for the Scientist and Clinicians*. Praeger, 1981.
- 4 Davis DA, Ciurea I, Flanagan TM, Perrier L. Solving the information overload problem: a letter from Canada. *Med J Australia* 2004;180(6 Suppl.),S68–S71.

Evidence-based practice requires time and a resource investment as there is so much research to read to inform practice. The aim of this Search Skills Toolkit is to show you the tools for finding the best available evidence faster and more efficiently.

The toolkit has been divided up into chapters covering the basic skills and information you need to know to be an effective searcher. You may wish to work through the chapters in order, but for a quick overview we recommend starting with Chapter 2. This chapter outlines where to go to conduct a health information search, depending on how much time you have, what type of publication you require or the specific topic area. Where appropriate, references are given directing you to the essential chapters you need to read.

When you see this symbol



Chapter 8 Refining research

it is directing you to more information in another chapter.

This note is alerting you to sites we have found particularly useful and would definitely recommend.



Keeping up to date

You probably meet your current information needs by a variety of strategies:

- Toss a coin (may be useful if there are only two options and you already know both).
- Guess, fine if you have the confidence, but what if you're asked to justify your decision?
- 'Do no harm', i.e. don't try anything dangerously innovative!
- Remember what you learned during your professional training, which was considered optimum treatment 10 years ago.
- Ask colleagues (but if you ask three people, you may well get three opinions, so who is correct?).
- Textbooks: how old are your textbooks and how decayed was the material in them when you bought them?
- Browse journals: getting better, but which ones do you choose?
- Searching bibliographic databases.

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Apparently doctors use some two million pieces of information to manage patients. Textbooks, journals and other existing information tools are not adequate for answering the questions that arise: textbooks are out of date, and 'the signal to noise' ratio of journals is too low for them to be useful in daily practice. When you see a patient you usually generate at least one question; more questions arise than a doctor seems to recognize. Most questions concern treatment, some are highly complex. Many questions go unanswered, the main reason being lack of time. Doctors very rarely consider using formal electronic searches.

Consider how you currently keep up to date

- Write down one recent patient problem.
- What was the critical question?
- Did you answer it? If so, how?



Reflect on how you learn and keep up to date. How much time do you spend on each process? Activities usually identified include: attending lectures and conferences, reading journals, tutorials, textbooks, guidelines, clinical practice, small group learning, study groups, electronic resources and speaking to colleagues and specialists. There is no right or wrong way to learn, but it is impossible to keep up to date with all the latest advances. One way to overcome the information overload is to use a push and pull strategy.



The 'push' method is the information we gather from the variety of sources that we receive across a wide spectrum of topics. This could be lectures, seminars, reading journals and magazines, or listening to Richard and Judy. To improve on this technique you should consider reading some pre-appraised source material. An example is the EBM journal or Clinical Evidence, this will cut down the time you spend allowing for more leisure activities.

The second method is the 'pull' technique, whereby you keep a record of the questions you formulate using the PICO principle (see page 38), and then 'pull' information as you need it. Clinical Evidence can be used for this sort of information gathering, but the use of a formal literature search would be more useful in obtaining an answer.

