The occasional teacher. Part 3: incorporating evidence-based medicine in rural teaching

William Edward Osmun, MD, MClSc, CCFP
Department of Family Medicine, University of Western Ontario, London, Ont.

Lynn G. Dunikowski, MLS
Library Services, College of Family Physicians of Canada; Canadian Library of Family Medicine, University of Western Ontario, London, Ont.

Correspondence to:
Dr. William Edward Osmun, 22262 Mill Rd., Mount Brydges ON N0L 1W0; ted@smhc.net

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As medical knowledge increases exponentially, it is essential that family physicians develop ways to manage information and base their practices and teaching on the best available evidence. This is easier said than done. Physicians generate many questions in a day's work.[1] The biggest barrier to finding the answers to those questions is time. Even if time is available, the question may remain unanswered because of the way the question is formulated or because the physician does not believe an answer exists.[1,2] However, learners can be a real asset to your practice if you use their information management skills and ask them to find some of those answers for you. Often they will be better at it than you, or, much to your surprise, you may find they are not.

It is acknowledged that for most questions it is unrealistic to go to the original sources. Fortunately, there are many websites and search engines that do the work for us (Table 1). Some of these resources are available online free of charge; others will be accessible through university libraries and professional organizations. For example, the Canadian Medical Association provides its members with access to Ovid MEDLINE, Essential Evidence Plus and The Cochrane Library. Some provincial medical associations also provide free-acess websites for information. It will be necessary to obtain user names and passwords to log on to these sites.

It is important to explore the strengths and weaknesses of such resources with students. They should understand that there is a hierarchy of evidence, with (usually) randomized controlled trials (RCTs) or systematic reviews of RCTs at the top and unsystematic clinical observations at the bottom.[3] You will need to ask the learner where the information came from, what indications of bias there are and if the information pertains to your practice population. Point out that most research originates from tertiary care centres where the patients are highly selected. Rural populations may be poorer, less educated and have different baseline risks than their urban counterparts.

To avoid being swamped by information, make your questions specific. For example, do not ask the student to examine the evidence for screening for cancer, but rather for screening for thyroid cancer in populations living near nuclear power plants. The PICO (Population, Intervention, Comparison, Outcome) structure is a useful tool to formulate a clearly focused clinical question.[4] If possible, the question should pertain to a particular clinical case. Reassure the student that there is no right answer. If you ask a learner to do a search as homework, remember to ask them what they found and if it helped. Neglecting to do this will discourage the student from doing further searches.

If a question comes up in the clinic and you have access to a computer, see if you can answer it using the Internet tools at your disposal. A search on Google and TRIP (Turning Research Into Practice) can often provide a quick answer. Resources that require a little more time to navigate, such as *Clinical Evidence* or Essential Evidence Plus, can

Table 1. Internet resources for physicians

Resource	Access
PubMed MEDLINE	Free, pubmed.gov
Ovid MEDLINE	cma.ca, university libraries, subscription
Google/Google Scholar	Free, google.ca, scholar.google.ca
TRIP Database (Turning Research Into Practice)	Free, tripdatabase.com
CMA Infobase: clinical practice guidelines	Free, cma.ca
National Guideline Clearinghouse (US)	Free, guideline.gov
Clinical Evidence	University libraries, subscription
The Cochrane Collaboration	cma.ca, university libraries, subscription
Essential Evidence Plus	cma.ca, university libraries, subscription
UpToDate	University libraries, subscription

CMA = Canadian Medical Association.

also provide quick answers if you are familiar with the resource. Answering questions in the clinic reinforces the relation between learning and daily clinical activities.

Learners are often wedded to guidelines; after all, guidelines can provide rigid solutions to messy situations. Explain the importance of assessing the quality of guidelines — and all the evidence — to your learners. Point out your concerns where guidelines may be misleading or even wrong, and explain your reasoning. Help with assessing the quality of evidence available in several books and websites.[3,4,5] Make your learners aware of the difficulties in applying guidelines to individuals as opposed to populations. One of the most difficult lessons to learn in evidence-based medicine is how to integrate the best available evidence with clinical expertise and with the patient's preferences and values ... and this is where you can be a valuable role model.

If your local community has evidence-based continuing medical education, such as the Practice Based Small Group (PBSG) Learning Program,[6] be sure to attend with the learner. In witnessing the discussion, the student will come to a fuller understanding of the challenges in applying evidence-based medicine to every patient. This activity will help to set a pattern for lifelong learning.

Although we all aspire to practise evidence-based medicine, reality dictates that sometimes there is no clear answer to our clinical questions. In working with students and enlisting their aid, our practices will become more evidence-based, and the students will see themselves as contributing members of the health care team.

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