

Newsletter of the International Society for Evidence-Based Health Care

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Evidence-Based Clinical Practice Office,
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www.ebm.mcmaster.ca



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University of Oxford, UK
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The International Society for Evidence-Based Health Care

Welcome to the first issue of the newsletter of the International Society for Evidence-Based Health Care. The Society's newsletter, growing out of the annual McMaster Evidence-based health care newsletter, will now be issued four times a year and distributed via the McMaster, CEBM (Oxford), and EBHC email lists. It will contain the usual news, tips, and teaching materials but will be broader in scope to cover the global interests of the Society. We will also be accepting some longer articles, and over the longer term aim to have a Society journal.

The Society was prodded into existence by Kameshwar Prasad who sensed that many EBM enthusiasts around the world felt isolated and wanted more and better communication with others working to apply the principles of EBM at the bedside or in the clinic. Inside this issue you will find an article by Kameshwar setting out the purpose and structure of the Society. Briefly, the Society exists to foster and promote EBHC globally. Over the next few years, the international founding board will work to enhance communication among EBM-oriented folk in all countries around the globe. In addition to this newsletter that we hope will evolve into a journal, we will establish a website, host local and regional conferences, and explore other means to promote EBM. We will endeavor to keep most materials and member benefits free or low cost. To achieve that goal, we will rely on EBMers worldwide to contribute materials and to the committees of the Society. We will update you in future issues about membership of the Society, and volunteering for the work on committees.

The newsletter will initially be coordinate by the CLARITY group at McMaster and the Centre for Evidence-Based Medicine in Oxford, but we hope to expand that over the next few years. The newsletter will be distributed free. If you have contributions for future issues, or things you would like to see then please feel free to contact Paul or Gordon.

Paul Glasziou, Gordon Guyatt & Carl Heneghan for the Society of Evidence-Based Health Care

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EDITORIALS

New Research Developments in Evidence-Based Practice

Extensive Evaluation of Four Patient Reported Functional Outcome Instruments on Measurement Properties Validity, Reliability, Responsiveness in Patients with a Hip Fracture

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Summary

In orthopaedic and trauma surgery, it has been standard practice to assess patient's outcome with imaging studies and physical examination. These assessments however, may or may not represent an accurate reflection of outcome from the patients perspective; specifically, the feelings/opinion and wellbeing of the patient may not be captured by these measures. Nowadays, outcome after orthopaedic surgery is increasingly focussed on patient-important outcomes provided, ideally, by the patients themselves. Outcomes such as pain and disability, which are highly relevant for the patients, are typically assessed by patient reported outcome (PRO) instruments.

In patients with hip fracture various PRO instruments are used to assess functional outcome; however, their relative performance has not been evaluated. In this study, we will assess the measurement properties of 4 commonly used PRO instruments for measuring functional outcome among patients with hip injuries: the Oxford Hip Score (OHS), Lower Extremity Measure (LEM), Hip disability and Osteoarthritis Outcome Score (HOOS) and Western Ontario and McMaster Osteoarthritis Index (WOMAC).

Guidelines to assess measurement properties were recently formulated by the COnsensus-based Standards for the selection of health Measurement Instruments ([COSMIN](#)) group. Terminology, definitions, and a taxonomy of the relationships of measurement

properties of Health Related – Patient Reported Outcomes have been published by the COSMIN group(1). Our study will use the COSMIN guidelines to examine the measurement properties of four PRO instruments in patients with hip fracture . The goal of our study is to determine which of the four patient reported outcome instruments is best to use for evaluating patients functioning after hip fracture.

Our study will start in the beginning of October 2010, and we will recruit patients for nine months. A maximum number of 180 patients will be included. Patients will be included from two university affiliated teaching hospitals in Amsterdam

Reference:

1. Mokkink LB, Terwee CB, Patrick DL, Alonso J, Stratford PW, Knol DL, et al. The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status measurement instruments: an international Delphi study. Qual Life Res 2010 May;19(4):539-49.

Universal Access to Evidence: A Clarion Call

Su May Liew

Department of Primary Health Care, Oxford University

Sir Muir Gray said, "In the 19th century health was transformed by clean, clear water. In the 21st century health will be transformed by clean, clear knowledge." I agree. And I also believe that just like clean water, access to evidence should be a fundamental right. Yet, access to published literature, which is critical to the practice of evidence-based medicine, varies considerably between countries.

In the UK, I have easy access to evidence; however, in Malaysia, I have great difficulty accessing journals even within universities. I believe that the practice of Evidence-Based Medicine (EBM), internationally, will only be possible if all clinicians have access to the published literature.

There have been some encouraging steps in this direction. For example, the Cochrane Collaboration provides free access to its' collection of reviews for low-income countries with a gross national income per capita of less than \$1000. However, there are many countries such as Malaysia, with a gross national income per person of approximately \$3,300, that do not meet this criteria but are challenged to provide healthcare

providers with access to the medical literature. In countries such as Malaysia, the evidence-based practise movement is often in its infancy and ready access to evidence is critical to fostering this paradigm change. Including raising awareness of the need for developing skills to locate, appraise, and apply evidence. For instance, our EBM workshop at the University of Malaya in Kuala Lumpur initially had difficulty in persuading clinicians to participate. Clinicians from one department only participated after their external examiner realised that the postgraduate students could not do a proper critical appraisal.

My first encounter with EBM was because of AsiaLink: a research project funded by the European Commission to improve clinical epidemiology and EBM knowledge and skills in Malaysia and Indonesia. 5 doctors from Malaysia and 5 from Indonesia were given the opportunity to do a doctorate in either Utrecht University in Netherlands or Oxford University in UK. Previously, I had been a sceptic about EBM; already too busy as a clinical senior lecturer, I believed that I was practising and teaching medicine appropriately. I also believed that the principles of EBM could not help me, other than to add to my guilt for not reading more journal papers.

I attended my first EBM workshop in Oxford in April 2008 as a sceptic. This workshop changed my views about EBM, and I have subsequently completed a systematic review, organised and facilitated more than 10 EBM workshops, and helped to train more than 200 persons in EBM. I am also an active member of both the Julius Centre of Clinical Epidemiology and Evidence-Based Medicine, University of Malaya and the Centre for Evidence-Based Medicine, Oxford University. My EBM-related activities were possible through access to the medical literature, which I was able to retrieve with far greater ease through my connections in the UK than in my home country of Malaysia.

Thresholds for access to Cochrane should first be lowered to allow more countries free access. However, the eventual aim is for universal access to evidence. We should monitor usage of evidence sources. It should not just left to governments or institutions to institute change. There should be a global Cochrane support group that is set up to track access to Cochrane reviews. Free access can then be allowed to countries where there is demand for evidence but have difficulties paying for Cochrane usage. This can be reviewed periodically. It's time for people who believe in EBM to be pro-active. This is a clarion call.

International Society for Evidence-Based Health Care: Mission, Vision, and Structure

Kameshwar Prasad

Professor of Neurology and Director, Clinical Epidemiology Unit; All India Institute of Medical Sciences, New Delhi, India

Interest in Evidence-Based Health Care (EBHC) is still growing and spreading from country to country. However, those working in the field often feel isolated from others, particularly when EBHC is new to a country. I felt so when introducing EBHC at both an institutional and national level in India. The need for an organized picture of the role of EBHC in the world and force of an international organization to take it forward was clear. It was in this context that a small group of us has been discussing the need for an International organization to connect people working in the area of EBHC around the world. The newly constituted International Society for Evidence-Based Health Care (ISEHC) has the following mission, vision, and objectives, activities, principles and structure.

Mission

The mission of the International Society for Evidence-Based Health Care is to develop and encourage research in evidence-based health care and to promote and provide professional and public education in the field.

Vision

The society is inspired by a vision to be a world-wide platform for interaction and collaboration among practitioners, teachers, researchers and the public to promote EBHC. The intent is to provide support to frontline clinicians making day-to-day decisions, and to those who have to develop curricula and teach EBHC.

Key objectives

- To develop and promote professional and public education regarding EBHC;
- To develop, promote, and coordinate international programs through national/international collaboration;
- To develop educational materials for facilitating workshops to promote EBHC;

- To assist with and encourage EBHC-related programs when requested by an individual national/regional organization;

- To advise and guide on fundraising skills in order that national foundations and societies are enabled to finance a greater level and range of activities;
- To participate in, and promote programs for national, regional and international workshops regarding EBHC;
- To foster the development of an international communications system for individuals and organizations working in EBHC-related areas;

To improve the evidence systems within which health care workers practice.

Activities

To help achieve these objectives, the Society would undertake a number of activities including:

1. Develop and promote professional and public education regarding EBHC through workshops and developing educational materials for facilitating such workshops;
2. Hold regular national and international society meetings; and encourage regional networks;
3. Provide forums for communication, including a journal and newsletter, a website and internet-based discussion forums;
4. Develop and promote research in all aspects of EBHC.

Principles

1. The Society will be a separate entity and not a subgroup of any existing organization;
2. The Society title will include Evidence-Based Health Care (not Medicine) to incorporate medical, nursing, public health, and allied health disciplines;
3. At least half of the board members will be clinically active.;
4. The Society will prioritize communication and open dissemination of information through an international conference (in addition to regional conferences), a newsletter, a journal, and an email listserv;
5. The Society will be open to anyone interested in its purpose;
6. The Society membership costs will be kept low, to allow wide international participation.

The following is an abbreviated version of the proposed full by-laws of the Society. The full list will be available soon for comments.

STRUCTURE: MEMBERS

1. Categories and Qualifications. The 'ISEHC' shall be structured to involve individual members and group members as well as member organizations. Hence there shall be five (5) categories of Members (collectively referred to as the "Membership") which are as follows:

Organizational members: Organizational members are classified in one of two categories.

- a) Societies / regional societies/working groups
- b) EBHC Support organizations

(c) Individual Members:

(d) Affiliate Members.

(e) Honorary Members.

Officers

The officers of the society shall be: President, one Vice-President, Immediate Past-President, Treasurer, Secretary and two members at large (7).

(a) A minimum number of 12 Board members will be elected every four years by individual members (category c) (50%), EBHC Support Organizations (category a) (25%) and societies / regional societies (category b)(25%);

(b) Every 4 years the Board will elect the Vice president, Secretary, Treasurer and members at large.

COMMITTEES

1. Executive Committee. The Board of Directors, by resolution adopted by a majority of the directors then in office, may establish an Executive Committee, which shall have and may exercise the authority of the Board in the management of the business and affairs of the ISEHC during intervals between meetings. Members of the Executive Committee shall include, but are not limited to, the President, immediate Past-President(s), the Vice President, Secretary, Treasurer and two Members-at-Large.

2. Other Committees. The Board of Directors, by resolution adopted by a majority of the directors then in office, may designate other committees that it deems beneficial to the management of the ISEHC such as a Publication Committee and Fundraising Committee. The Committees shall establish rules of procedure for the conduct of meetings. The Committees shall keep minutes of their proceedings and shall report to the Board of Directors on actions taken.

Related topic areas

The society's work will focus in the area between production of evidence resources and clinical practice, including facilitating the production of evidence resources. Specific topics of interest include:

- clinical research methodology
- clinimetrics,
- systematic review methodology,
- information science,
- decision psychology,
- applied statistics,
- guideline development methodology,
- knowledge translation methods
- practice-based change, and quality improvement

Interest groups

It is envisaged that several interest groups will develop within the society to promote specific activities to promote their respective fields. These may include:

- Evidence-based dentistry
- Evidence-based nursing / health promotion
- Evidence-based clinical medicine
- Evidence-based surgery
- EBHC in undergraduate education
- EBHC in postgraduate education
- Ethics and EBHC
- Evidence-based pharmacy
- Guideline development and implementation
- Health technology assessment
- Patient information and patient empowerment

This is only a draft which has input from some members and will be further refined with input from other members and readers of this newsletter. These sections will form part of a larger document that will serve as the constitution and bylaws of the society. Suggestions to improve these sections are welcome.

THE FOUNDING BOARD MEMBERS are: Kameshwar Prasad (India), Gordon Guyatt (Canada), Paul Glasziou (Australia), Carl Heneghan (UK), Ken Kuo (Taiwan), Nino Cartabellotta (Italy), Jose Emparanza (Spain), Hilda Bastian (Germany), Lubna A. Al-Ansary (Saudi Arabia), Hossam Hamdy (UAE), Dave Davis (Canada), Sally Green (Australia), Regina Kunz (Switzerland), Peter Tugwell (Canada), Tony Dans (Phillipines), Mahmoud El Barbary (Saudi Arabia).

The Evolution of Cancer Drug Funding Decision-Making in Ontario

Scott Gavura

Director, Provincial Drug Reimbursement Programs, Cancer Care Ontario

Prescription drug costs have emerged as one of the biggest challenges to Canadian medicare programs, with spending climbing by over 10% annually for the past 25 years. As drugs are not included under the Canada Health Act, each Canadian province has unique programs to support access to treatments, while trying to manage growing expenditures.

In Ontario, Cancer Care Ontario administers the New Drug Funding Program (NDFP), which provides funding for injectable cancer drugs through a network of hospitals and provincial cancer centres. As the costs and utilization of cancer drugs has increased, the path to reimbursement for new cancer drugs has changed considerably. While remaining grounded in evidence-based reviews, economic factors are now explicitly integrated into the consideration process, and the locus of decision-making has moved, from local hospitals to national initiatives that aim to improve the quality and consistency of decision-making.

The 1990s: Fixing the Patchwork

The early nineties was a period of great stress in the cancer system. While oral cancer drugs were covered by the provincial drug benefit program, hospitals struggled to offer new, expensive intravenous cancer therapies from their global budgets. Each hospital made its own decisions about which drugs would be offered to patients, based on its own evaluation of the drug. When it became obvious that access to treatments varied based on a hospital's ability to pay, there was recognition that a new funding model was necessary. The arrival of paclitaxel (Taxol) for breast and ovarian cancer, which set a new record for patient treatment costs, was the impetus for a completely new strategy for cancer drug funding.

In 1995 the Taxol Program was launched, providing patient-specific drug funding for patients that satisfied evidence-based criteria for use. Patients could be treated in any participating facility – the money followed the patient. When the program expanded in 1997 to cover new and emerging cancer drugs, the New Drug Funding Program at Cancer Care Ontario (CCO) was born. A Policy Advisory Committee (PAC) was established to provide funding recommendations to government, based on evaluations of funding requests

from clinician-led Disease Site Groups and supported by what would become the Program in Evidence-Based Care (PEBC). The PEBC's rigorous approach ensured that each drug considered for funding was accompanied by a systematic review and practice guideline.

The 2000s: Integration

In the early 2000's, the Ontario Ministry of Health and CCO began discussing a new approach to deliver more coordinated funding decisions about cancer drugs. Given the growing importance of oral cancer therapies, and the continued financial pressures on the NDFP, a new strategy was sought to maximize value-for-money in the system and ensure funding stability. The Ministry's decision-making process was comprised of a Drug Quality and Therapeutics Committee (DQTC) that considered the clinical and pharmacoeconomic arguments for submissions for oral and subcutaneous cancer drugs initiated by pharmaceutical companies. The PAC process lacked a formal pharmacoeconomic evaluation, but incorporated clinical practice guidelines and the leadership of clinical experts in the prioritization of funding requests for intravenous drugs. There was no formal coordination of evaluations, and neither process took a disease-based approach to funding.

In 2005, the DQTC-CCO Subcommittee (now Committee to Evaluate Drugs (CED)-CCO subcommittee) was established to enhance the review of all cancer drugs (injectable and oral), incorporating a review of clinical and pharmacoeconomic evidence, as well as practice guidelines developed by the PEBC. Disease Site Groups, as well as pharmaceutical manufacturers, could make funding requests through this new process. Recommendations from the Subcommittee flow to the CED, where cancer drugs are considered from the perspective of the broader health system. Final decisions for all cancer drugs are now made by the Executive Officer of Ontario Public Drug Programs, and funding flows to the relevant program that reimburses the drug.

This integrated process has supported significant government investments in cancer drug funding. The NDFP has grown from reimbursing 6 drugs for 8 indications in 1997/98, at a cost of \$8 million, to reimbursing 25 drugs for 58 indications, at a cost of about \$200 million, in 2009/10. The NDFP database is now a valuable resource to study the real-world utilization of cancer drugs, and is supporting ongoing evaluations of funding decisions.

Looking Forward: A National Collaboration

While the consistency and rigour of provincial decision-making has been enhanced by the CED-CCO process,

there continues to be significant differences between provinces in cancer drug access. In 2007, Ministries of Health and provincial cancer agencies from across Canada began discussing the potential for a national review process for cancer drugs. The Common Drug Review (CDR), established in 2003, explicitly did not review intravenous cancer drugs, and follows a process that does not incorporate clinical practice guidelines, in contrast with Ontario's process, and other provincial approaches to cancer drugs. To support early collaboration, the CED-CCO Subcommittee formed the basis of an interim Joint Oncology Drug Review (iJODR), where all provinces currently receive the recommendations of the CED-CCO evaluation process, and then make their own funding decisions.

In early 2010, a formal decision was made to proceed to replace iJODR with a permanent pan-Canadian Oncology Drug Review (pCODR), a national commitment to improve the consistency of cancer drug decision-making across Canada. Anticipated to launch in early 2011, pCODR builds on Ontario's experience in evaluating cancer drugs, keeping all elements, including a rigorous evidence review. Once implemented, pCODR will ensure that all provinces make funding decisions based on a common evaluation of the clinical and cost-effectiveness data supporting a cancer drug.

As we look towards the launch of pCODR in 2011, it's worthwhile reflecting how cancer drug therapy decision-making has evolved in the past 20 years. From local decisions, to national endeavours, change has been driven with the goal of improving the way decisions are made, and translating those decisions at the patient level into best clinical practices.

EVENTS

How To Teach Evidence Based Clinical Practice Workshop – 2010

Deborah Maddock

EBCP Workshop Co-ordinator, McMaster University

The 17th Annual "How to Teach Evidence Based Clinical Practice" Workshop was held in June 2010. This popular workshop sponsored by the McMaster University Department of Clinical Epidemiology & Biostatistics was attended by 93 participants from Argentina, Brazil, Chile, Colombia, Pakistan, Qatar, Saudi Arabia, Thailand, The Netherlands, USA and Canada.

The objectives of the workshop are to advance critical appraisal skills and to learn how to Teach Evidence Based Clinical Practice (EBCP). The workshop is offered as a one week intensive course with participants learning in small groups led by highly experienced clinical epidemiologists. The format of the workshop includes large and small group sessions, individual study time, and opportunities for each participant to lead teaching sessions.

The new addition of several interest small groups as part of the programme was well attended leading to more rewarding exchange of ideas and discussion. Several suggestions for future interest groups will be part of the program for 2011.

Each small group consists of two tutors, one tutor trainee and a qualified medical librarian. In addition to training in clinical epidemiology, tutors are clinically trained and represent a variety of different disciplines, thereby bringing different approaches and perspectives to the small group atmosphere. The tutor trainee programme provides an opportunity for individuals to advance their EBCP teaching skills to become a full tutor and/or to facilitate tutoring at their primary institution. More emphasis for additional training and opportunity for learning will be part of the tutor trainee programme for 2011.

Involvement of a librarian as part of the important tutor team was very well received and provides access to an important resource. Both basic and advanced searching strategies are introduced as part of the small group process to show clinicians and health care workers how to narrow searches and access the best evidence. Informatics sessions are provided and led by librarians in a computer laboratory setting offering a “hands-on” opportunity to conduct searches of electronic databases.

A multi-purpose EBCP learning tool entitled “Roadmap – Website” was introduced this year and provided the participants a preview of expectations prior to the week. Feedback from the workshop week was well received to enhance the use of this optional tool for future years.

The popular social activities in light and relaxed settings offered throughout the week allow for networking with other attendees. As in previous years constructive feedback received from tutors, tutor trainees, librarians and participants continues to provide insight into how to improve future workshops.

We are happy to announce that the 18th “How to Teach Evidence Based Clinical Practice” workshop at McMaster University will be held from Sunday June 5 – Friday June 10, 2011. Registration for the next workshop began September 20, 2010

As the workshop proves to be highly popular, we encourage “on-line registration” at the following website address <http://ebm.mcmaster.ca> A brochure advertising the workshop is also enclosed with this newsletter detailing instructions for “on-line registration”. We are very much looking forward to seeing you at the 18th EBCP Workshop in June 2011.

Evidence-Based Medicine (EBM) for Clinical Researchers

**M. Hassan Murad, MD, MPH
Victor, M Montori, MD, MSc**

Knowledge and Encounter Research Unit
Mayo Clinic, Minnesota, USA

This fall marks the second year that the Mayo Graduate School will offer a course on evidence-based medicine (EBM) for clinical researchers. Traditionally, researchers have focused their training on epidemiology and research design to generate evidence. Evidence users (clinicians, decision makers, patients and their advocates) use EBM principles to interpret, appraise, and apply the evidence (Figure 1). Evidence users may be challenged to apply the results of clinical studies because of poor methodological quality or limitations of the study design. For example, the available evidence is often derived from studies of highly selected populations that use surrogate outcomes of indirect relevance.

The purpose of our course is to teach EBM principles to researchers, as opposed to teaching it to evidence users, with a focus of applying these principles to clinical study design (Figure 2). We believe that if researchers better understand the perspective from which end users interpret their data, they will be more likely to design studies that generate valid, relevant and applicable data.

Our course is available to students enrolled in the Masters of Science program at the Mayo Clinic, who are typically researchers, clinicians-scientists or clinical fellows pursuing graduate medical education training. Our course has no didactic component but rather a workshop format with weekly discussion themes. Each student is evaluated by their peers who review two essays prepared by each student in which they apply EBM principles to clinical study designs in their field of interest.

Our biggest difficulty to this date has been to clearly communicate the purpose of the course to the students who often find it difficult to imagine that their research, by design, may not meet the needs of evidence users.

In part, this may be due to student's focus on their study as the 'next step' in building knowledge, i.e., focusing on the needs of researchers, rather than clinicians and patients. We would welcome feedback from readers of the newsletter with expertise in teaching EBM regarding any suggestions on addressing this challenge.

As someone who teaches clinicians 'how to teach', I find these memory aids both extremely useful and very popular with adult learners. The well-known 'Teaching on the Run' program, designed to improve the quality of teaching by clinicians (2), makes good use of many such memory aids. For example, a key element of quality teaching is appropriate *planning* of the teaching session. A memory aid which I have found valuable for adult learners, and which they report extensive use when planning their own teaching sessions, is:

1. Set
2. Dialogue
3. Closure

This mantra describes the 3 planning components of all teaching sessions, whether large or small group. Namely, 'Set': what you should do *before* the session; 'Dialogue': what you will do *during* the session; and 'Closure': how to *end* your session effectively. To expand on each of these components, 'Teaching on the Run' uses the mnemonic: ROLE (for 'Set'); QUEST (for 'Dialogue'); and REST (for 'Closure'), as follows:

Set: ROLE:

R = *Roles*: Think about what you, the trainer will do, what you want the learners to do, and how to best utilise clinical examples.

O = *Objectives* (or outcomes) you hope to achieve from the session. These should be relatively simple, and achievable in the available time.

L = *Linkages* to prior learning (or future learning). This linking is a key element to effective adult learning.

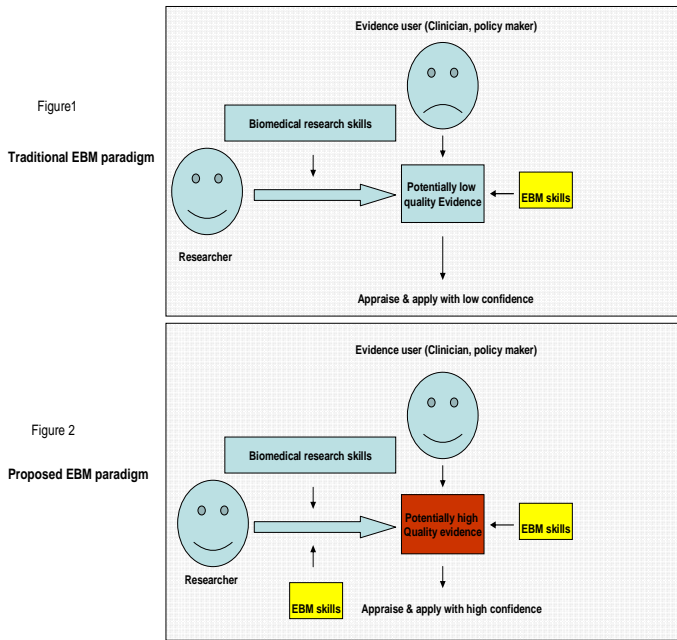
E = *Environment*. Consider how you will arrange seating, will noise be an issue, privacy, and what about planned breaks?

Dialogue: QUEST

Q = *Question*. Use them often. Combine both open & closed questioning. This ensures your session is interactive – not passive.

U = *Understanding*. Check frequently that all your learners are keeping up with you. Use questioning to confirm – for large groups incorporate short quizzes or Multiple Choice Questions. Have regular mini-reviews of what you have covered so far.

E = *Eyes*. Maintain eye contact with all your learners – especially if using visual aids.



TEACHING AND PRACTICE TIPS

Using Mnemonics When Teaching Evidence Based Health Care (EBHC)

Craig Mellis

Sydney Medical School, University of Sydney, Australia

While some see memory joggers as childish – in reality, we all use them. Who doesn't use the well-known rhyme to check how many days in the month? And who didn't learn the 12 cranial nerves (ie, O, O, O, T, T, A, F, A, G, V, A, H) without the aid of a simple ditty?

Given their widespread popularity, not surprisingly, medical education is awash with numerous simple mnemonics or memory aids. A recent example arose from the 2005 McMaster EBHC workshop, the '6Ts for planning and evaluating a teaching session', and now widely used in that workshop (1).

S = *Stimulation*. Ensure the material you are teaching is clinically relevant and/or immediately applicable. Maintain a high level of personal enthusiasm and energy throughout the session.

T = Timing. A typical problem for trainers is trying to *cover too much material*. Make sure you finish on time, that you have allowed adequate time for questions, and for your *strong closure*. It doesn't matter if you don't cover *everything* you had planned - but it is important to close a teaching session effectively.

Closure: REST

R = Review. Do it regularly throughout the session – and especially at the *end*. The level of engagement by adult learners is greatest at the beginning, and at the end of your session – make use of this engagement!

E = Educational script. AKA 'homework' - recommend your learners reflect on what you've covered, and provide any suggested reading for the next session.

S = Summary – ideally supply a one page handout summarising the key issues of your session. Hopefully, by looking at the handout after your session, your learners will *reflect* on the material covered. This reflection is essential for the development of their learning.

T = Take home message or 'Pearl'. Crucial – this must not be omitted but keep it brief.

In summary, the beauty of this memory aid - the mantra: "*set/dialogue/closure*", with the expansion on each component as a mnemonic: "*ROLE / QUEST/REST*", is that it covers many of the key elements of effective adult learning. Importantly, it avoids the trainer having to know the pedagogic theory, and it allows use of this information in a simple, practical way.

Try incorporating this strategy next time you plan a teaching session!

References:

1. Cook D et al: "6Ts teaching tips for evidence-based practitioners." ACP Journal Club, 2008, 148: A9
2. Lake FR, Ryan G: "Teaching on the run tips: Planning a teaching episode." Medical Journal of Australia, 2004, 180:643

What are your BestBets? An interview with Kevin Mackway-Jones

(Interview done by Paul Glasziou on March 2010 at BMJ editorial meeting in London).

Professor Kevin Mackway-Jones is an Accident and Emergency Physician in Manchester and is probably best known for setting up BestBETS, a collection of critically appraised topics in Emergency Medicine.

Paul: Could you tell me a little bit about your clinical setting.

Kevin: I work in two emergency departments: the Manchester Royal Infirmary and the Royal Manchester Children's Hospital, both in inner city Manchester. It is a very busy University teaching hospital emergency setup. We take everything from aardvark bits to zebra kicks in a day. I tell my students if they can't find something in my department that interests them then they are doing the wrong thing. It is a very varied, very busy department, with many consultants, many middle grades and many junior doctors.

Paul: Can you tell me how you got involved with Evidence-Based Medicine?

Kevin: About 15 years ago - I had been a consultant for a couple years - I was thinking how are we going to make life a little more interesting here and how am I going to incorporate that into teaching my juniors. It became obvious that a lot of the medicine we were practicing was authority based or belief based as opposed to evidence based. I saw an opportunity to both help myself move to a more evidence based practice but also help my juniors. So we set up a critical appraisal journal club. That did not last long. After about 6 weeks we were all bored silly with going through a single paper each week, but it struck us that we could go to the next step and come along with a clinical problem - something that was causing us a problem. Usually it was the orthopedic surgeons causing us problems: they would say to us "you do this" and another would come and say "no you do this". In other words we getting conflicting clinical advice and that was the starting point. We would say what is the right answer what does the literature say. As a group we started doing that and from that came a bit of a structure and we called this BestBETS.

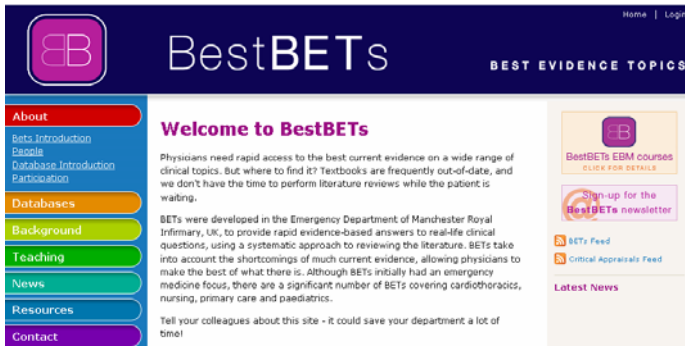


Figure 1: Webpage for BestBets – www.bestbets.org

Paul: Can you tell me about the birth of BestBETS and how that's developed?

Kevin: BestBETS came about in the mid 90's we were thinking about how to formulate our thoughts around the clinical problems we identified. We started off thinking we would do some clinical appraise topics: run it through the numbers needed to treat and we will quickly understand exactly what it is we have to do here. But pretty soon it became obvious that the literature in emergency medicine did not support that type of analysis so we had to come up with another model and that model was BestBETS. We first published in the late 90's where we could share with others people the outcomes of our evidence based reviews.

Paul: Can you describe the process required to publish in BestBETS.

Kevin: The first thing is to have an area of interest. I always tell my trainees to do evidence based reviews in an area that interests you, not necessarily intellectually, but certainly of clinical interest. For a problem maybe I say they should do this and someone else tells them they should do that, and they wonder what it is they should do. So the first thing is to identify the problem. We then help them structure the search terms, so we almost give them an educational prescription but not quite. Once they've formulated the question they do the search get the papers appraise the papers and then come up with a clinical bottom line that we can all use. After we have been through a fairly informal but fairly structured peer review process through our journal club.

Show key to symbols

BET Title
● Admission not needed for uncomplicated sternal fractures
● Steroids in lateral epicondylitis.
● No difference between oral and nebulised steroids in croup
● IVRA (Biers block) is better than haematoma block for manipulating Colles' fractures
● Cardiac monitoring not needed in household electrical injury if the patient is asymptomatic and has a normal ECG
● Management of fractures of the neck of the fifth metacarpal
● Oral non steroidal anti-inflammatories in ankle sprain
● Physiotherapy in acute lateral ligament sprains of the ankle
● No evidence for either Collar and cuff or sling after fracture of the clavicle
● No evidence for early manipulation of nasal fractures
● No evidence for either curettage or silver nitrate for pyogenic granulomas on the hand
● Nasal diamorphine in children
● Antibiotics are indicated following dog bites
● Analgesia in biliary colic
● First anterior shoulder dislocations should be immobilised for at least 3 weeks
● Nebulised ipratropium bromide is not indicated in bronchiolitis.
● Operative repair is best for an acutely ruptured achilles tendon
● Glue is better than sutures for facial lacerations in children
● Vomiting is not an accurate discriminator for serious head injury in children
● Tap water is an adequate cleansant for minor wounds
● Bypass is better than external rewarming after hypothermic cardiac arrest
● Cricket pad splint is better than plaster cylinder for first patellar dislocation

Figure 2: Sample list of topics on the BestBets website.

We have a web site www.bestbets.org where you can register and you can publish your papers on line. We have a quality assurance on the web site. But the BestBETS may also published in a number of journals: my journal – the Emergency Medicine Journal, ICBTS - The Cardiothoracic Best Bets, the British Journal of Urology, Archive Diseases of Childhood, so on. A number of journals have taken up the concept of BestBETS. The concept is that not all questions can be answered by a Cochrane review. What you need to do is go out and find out what the evidence is and present it in a way that a practitioner can interpret themselves. So what we do very carefully in the BestBETS is when we find the papers that give the best evidence we then extract the relevant data and put it into a tabular form so that any practitioner can come along and not just be told what to do, because that to me only replaces the authority of the consultant with the authority of someone who says they are an evidence based practitioner, but they can actually read the data and decide for themselves what they think the evidence is and how strong the evidence is and what they think it shows them.

Paul: If people who are not at the Manchester infirmaries wanted to get involved with this around the world what is the process for them?

Kevin: There are a number of things they can do. They can go online and we have many contributors from around the world who as individuals have contributed

BestBETS from many different specialties we have BestBETS in physiotherapy, pediatrics and many different specialties from individuals who are evidence based people who want to contribute to this. They register online and contribute to us. But also around the world there are a number of evidence based journal clubs who use BestBETS as we do at the Manchester Royal infirmary they use BestBETS as the structure for their evidence based journal club we have contributors particularly from Cincinnati and Melbourne who have done just that.

Paul: *Can I ask about how you would like things to unfold for the future?*

Kevin: I would like things to keep going I think it is very interesting in the real world when you have a new idea it is very easy to get it up and running actually keeping it going is always a difficulty and I want people's enthusiasm to stay there clearly from my perspective I'd like the funding to keep coming in and that's always a struggle as everyone knows. But keeping the enthusiasm for BestBETS going and my particular interest and it's not a new interest for me but my particular interest at the moment is to make sure we concentrate more on rational clinical examination and look at the evidence based in my specialty and other specialties around rational clinical examination. I think it is very interesting that people are always interested in therapy but they don't think about the steps before you need to decide on the therapy. We really have to get to grips with this some of those diagnostic problems. My specialty is a diagnostic specialty and not really a therapeutic specialty and we need to get the evidence base in diagnostics.

Paul: *I think many people will agree with you on that and I wish you all the best in that endeavor. Thank you for your time today*

Kevin: Thanks Paul

(The full interview, and other interviews with EBMers can be found at: <http://www.cebm.net/index.aspx?o=4648>)

ORIGINAL ARTICLES

The Impact of Facilitating Physician Access to Relevant Medical Literature on Outcomes of Hospitalized Internal Medicine Patients: A Randomized Controlled Trial

Ariel Izcovich, Carlos Gonzalez Malla, Martín M. Diaz, Matías Manzotti, Hugo N. Catalano.

Hospital Alemán. Buenos Aires. Argentina.

There is little high quality evidence on the usefulness of facilitating access to the medical literature for improving clinically relevant outcomes in hospitalized patients. Most of the existing evidence comes from non-randomized trials¹ and hence has a high risk of bias. We conducted a randomized controlled trial to assess the impact of facilitating physician access to the medical literature on patient outcomes.

Between 03/01/2010 and 07/31/2010 all clinical questions that emerged from the morning rounds at the Internal Medicine Service of the German Hospital in Buenos Aires were recorded. All patients admitted to internal medicine between these dates were randomized by tossing a coin to two arms, intervention (facilitation of physician access to the medical literature) and control (care as usual).

One physician with expertise in searching the medical literature reviewed questions raised in the morning rounds relevant to those patients in the intervention arm only, and performed a literature search in order to acquire current evidence. The retrieved articles were sent by email to all the members of the medical team who were unaware of the patient's assigned arm. For particularly relevant questions posed by attending physicians (defined by the physician who performed the search), hard copies of retrieved studies were provided to the professionals involved in the care of the specific treatment arm patient who motivated the question.

Primary end points were: 1) a composite outcome of death or transfer to intensive care unit, 2) length of hospitalization, 3) readmissions during the study period. A subgroup analysis was planned for those patients whose physicians had received hard copies of retrieved studies.

We included 809 patients with a mean age of 66 years (95% CI 65-67 years) without significant differences between intervention and control groups. 407 patients were randomized to the intervention arm and 402 to

control; 151 patients generated at least one question: 78 in the intervention arm and 73 in the control arm. There was no significant effect on our composite outcome (relative risk [RR] = 0.96; 95% CI 0.6 to 1.4), readmissions (RR = 1; 95% CI 0.6 to 1.4), or the length of hospitalization (6.3 days in intervention arm vs. 6 days in the control; $p < 0.25$). Our subgroup analysis of patients whose physician's had received hard copies of retrieved studies showed a positive trend for our composite outcome (risk difference 14 % (IC95% 5-23 %) vs. 8 % (IC95% - 7-22 %) test for subgroup differences , inverse variance, $p = 0.01$).

Our study did not find an effect of facilitating physician access to the medical literature for hospitalized internal medicine patients; however, an a priori subgroup analysis suggests that providing hard copies relevant literature may result in clinical benefits. Our intention is to use these results in designing future studies.

Reference:

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COMMENTARY

Paul Glasziou

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Director of the Centre for Research in Evidence-Based Health Care, Bond University

Some years ago Sharon Straus asked the challenging question "What is the E for EBM?"[1] While there are many good arguments and indirect evidence, there have been few direct attempts to answer this question using a randomized trial - the "gold standard" for intervention evidence. This trial by Izcovich and colleagues is a laudable attempt, and I look forward to seeing the full publication. However, before interpreting this study we need to know more about two things: the EBM processes and the statistical power of the study.

"EBM" is not a single standard process. Different specialities and different individuals have adopted and adopted the principles of EBM to different degrees and in vastly different ways (Listen to the podcasts on www.cebm.net/index.aspx?o=4648 to hear some examples of this diversity of processes). The EBM style of Izcovich and colleagues has some similarities with the "evidence cart" approach that Sackett used in Oxford[2],

but with some important differences: they answer fewer questions (1 question per 5 patients compared to Sackett's 2 questions per 3 patient - a 3-fold difference), the search was done AFTER the ward round rather than during it (when the decisions are being made), and there appeared to be no team discussion of the evidence, but only a passive delivery of evidence. In Sackett's approach searches altered about 1/3 of decisions made during the ward round. The process measures needed to assess any style of EBM are similar to those of the steps of EBM: how many questions were asked? How often was good evidence found? How often were decisions changed? How often were those decisions implemented? These process measure is not mentioned in the abstract, though hopefully the full article will give some further details.

A crucial problem with any direct RCT approach to assess any variety of "EBM" is the statistical power of the studies. Essentially, if we require big studies to answer important treatment questions, we require even bigger studies to detect whether EBM - which results in an incremental use of evidence-based treatments - improves outcomes such as mortality. To see this imagine two wards with only patients with myocardial infarction: Ward A uses aspirin routinely whereas Ward B never uses it. To detect the 25% relative risk reduction would require thousands of patients enrolled. But if Ward B - the less "EBM" ward - uses it half the time, then it would take 4 times the sample size to detect a difference. And if 1/3 of such decision were changed by evidence, then we would need a study 9 times larger than the primary study.

So measurement of processes and adequate power are important to answer the question directly, as Izcovich and colleagues have done. We should applaud such attempts. But we should also ask if this is the right question? Instead we might ask what is the best way to improve the use of good evidence in clinical practice? The "evidence cart" approach is one, but there are many others. For example, an cluster trial of intensive implementation of guidelines for the management of malaria showed a 50% relative risk reduction in in-hospital mortality[3]. A randomized trial of inserting evidence statement into hospital discharge letters[4] showed a 11% absolute increase in GP adherence to discharge medications - a Number Needed to Write of 9! Comparative studies are needed to assess different approaches, and need to account for the processes measures mentioned, but also the learning that occurs long-term, not just the immediate outcomes. As Straus concluded: "... it may be too soon to tell if evidence-based medicine changes clinical performance and outcomes because advocates think that it requires lifelong learning, and this is not something that can be measured over the short term."

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Outcomes in Survivors of High Mortality and Morbidity Neonatal Trials: Which Denominator?

Robin Whyte

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Neonatal intensive care is characterized by high rates of mortality and of serious morbidity in survivors, such as severe neurodevelopmental impairment. In making choices in perinatal care, it is customary to first consider the risk of death, and then to evaluate the risk of long term morbidity among survivors. This makes sense when discussing the option of non-intervention, where non-intervention results in almost certain early death, and where the consequences of survival can therefore be attributed to opting for survival.

In randomized trials the unit of randomization is the infant at enrolment, often at birth. As morbidity in survivors competes with mortality as an outcome, it is conventional to express the primary outcome as a composite of mortality or morbidity. Mortality and morbidity (usually in the form of several morbidities) endpoints are usually expressed as secondary outcomes. Mortality uses total infants randomized as the denominator. Morbidities are often expressed with

survivors as the denominator. This may lead to difficulties in interpretation, as in the following example. The TOBY trial¹ compared hypothermia with normothermia for infants with severe perinatal asphyxia. 323 infants were randomized of whom 27% died. There was a modest, but non-significant, reduction in the primary composite outcome of death or severe neurodevelopmental impairment: relative risk (RR) 0.86 (95% CI 0.69, 1.07)*, and almost no difference in death alone: RR 0.95 (95% CI 0.66, 1.36). Severe neurodevelopmental deficits were present in 23% of all infants enrolled and in 31% of survivors. If the denominator for analysis is all infants enrolled, RR for severe neurodevelopmental outcome is 0.76 (95% CI 0.51, 1.14); if the denominator is survivors, the RR is very similar; 0.74 (95% CI 0.51, 1.09). The stability in relative risk is a consequence of the close similarity in rates of survival in the two arms of the trial; the similarity in the size of confidence intervals reflects the opposing effects of an increase in event rate and a reduction in the size of the denominator. However, had there been a major effect on mortality, for example with a relative risk of 0.34, with the same numbers of infants with severe neurodevelopmental outcome as in the original trial, there would have been a marked reduction in risk if analyzed on a per survivor basis (RR 0.53 (95% CI 0.36, 0.77)). This effect would have been produced by the reduction in numbers of survivors in the normothermia arm. If analyzed by number of infants enrolled, the result obtained would have been identical to that of the original trial.

The statistical assumptions underlying the analysis of events by survivor are suspect when the unit of randomization was not the surviving infant. The last five published multicentre randomized controlled trials in neonatology used a composite primary outcome of death or major morbidity, but expressed morbidity per survivor. In the presence of unequal rates of mortality, analysis of outcome by survival may be misleading. Clinicians involved in neonatal intensive care, and in other areas in which mortality is a serious competing endpoint, should be aware of this issue.

*Confidence intervals were recalculated and are unadjusted

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TOOLS

The "Grades of Recommendation, Assessment, Development, and Evaluation"

Gordon Guyatt

Professor, McMaster University

(GRADE) approach provides guidance for rating quality of evidence and grading strength of recommendations in health care. The approach is catching on: Wide dissemination over 50 organizations worldwide, many highly influential, have endorsed and are using GRADE.

The published literature includes a number of articles describing the GRADE approach, of which the most comprehensive is a 6-part series published in 2008 in the BMJ[1-6]. The audience for articles that have appeared up to now are the clinician consumers of GRADE. In a new series, which will be appearing in the Journal of Clinical Epidemiology over the next year, the GRADE working group provides detailed guidance for those responsible for using GRADE to produce this output: systematic review and health technology assessment authors, and the guideline panelists and methodologists who provide support for guideline panels. So, if you've ever been involved in producing a systematic review, or helping create a clinical practice guideline (or might be in the future) consider reading on.

This series, which provides guidance for each step in the application of GRADE, will include 20 articles (see Table). The first introduces GRADE and its use in systematic reviews, guidelines, and health technology assessment, as well as presenting the final product of the GRADE approach to collecting and summarizing evidence: the evidence profile and summary of findings table. The second shows how GRADE uses the patient/intervention/comparator/outcome (PICO) framework for structuring a clinical question, and its approach to defining critical, important, and less important outcomes. The last of the three introductory articles presents GRADE's definition of quality of evidence (confidence in effect estimates). This third article provides the rationale for randomized trials beginning as high quality evidence, and observational studies as low quality in GRADE's four-category system or quality rating (high, moderate, low and very low). It also introduces five categories of reasons for rating down quality of evidence, and three categories of reasons for rating up quality of evidence.

The subsequent five articles – the 4th to the 8th in the series – address the five categories of issues that may result in rating down the quality of evidence: risk of bias, publication, imprecision, inconsistency, and indirectness. The 9th article deals with possibilities of rating up quality of evidence from observational studies. The 10th article deals with special considerations in assessing risk of bias when the outcome is resource use (cost).

The 11th to 13th articles deal with issues in summarizing the evidence. Every body of evidence has limitations, and when to rate down quality for a particular outcome, and how much, is a major challenge. Further, because the GRADE approach rates quality of evidence separately for each outcome, it is frequently the case that quality differs across outcomes. Deciding on an overall quality of evidence across outcomes is therefore challenging. The 11th article in the series addresses these issues. The 12th and 13th articles address details regarding the production of evidence profiles and summary of findings tables, the 12th dealing with binary endpoints and the 13th with continuous variables.

The 14th article addresses a particular challenge that the working group has faced: how to rate quality of evidence for diagnostic tests within the GRADE framework. The 15th and 16th articles deal with moving from evidence to recommendations and whether to classify recommendations as strong or weak (alternative terms for the latter are weak, discretionary, or contingent). The current plan for the final articles in the series includes one dealing with the special challenges that observational studies present and two presenting the GRADE working group's perspective on group process, variations of GRADE, and possible developments of GRADE in the future.

The series provides suggestions for approaching a host of methodological issues. Some of the approaches are innovative: innovations include how to deal with surrogate endpoints; criteria for judging limitations as a result of imprecision; criteria for evaluating the credibility of a sub-group analyses; judging quality of evidence for diagnostic tests; and summarizing the magnitude of effect for continuous variables. Thus, along with understanding GRADE, readers of the series will deepen their understanding of how to use the medical literature to improve their patient care.

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Table: GRADE Journal of Clinical Epidemiology Series – list of articles

Introductory articles

1. Introduction and Summary of Findings tables
2. Framing the question and deciding on the importance of outcomes
3. Rating the quality of evidence – introduction

Rating Quality of Evidence

4. Rating the quality of evidence – risk of bias
5. Rating quality of evidence – publication bias
6. Rating the quality of evidence – imprecision (random error)
7. Rating the quality of evidence - inconsistency
8. Rating the quality of evidence – indirectness
9. Rating up the quality of evidence
10. Rating the quality of evidence for resource use

Summarizing the evidence

11. Summarizing the quality of evidence for individual outcomes, and across outcomes
12. Preparing Summary of Findings tables - binary outcomes
13. Preparing Summary of Findings tables - continuous outcomes

Diagnostic tests

14. Applying GRADE to diagnostic tests

Making recommendations

15. Going from evidence to recommendations - the meaning of strong and weak recommendations
16. Going from evidence to recommendations - determinants of a recommendation's direction and strength
17. Going from evidence to recommendations - resource use

GRADE and observational studies

18. Special challenges in using observational studies

Concluding articles

19. Group processes, variations of GRADE and further developments of GRADE part 1
20. Group processes, variations of GRADE and further developments of GRADE part 2

Health Systems Evidence: A Continuously Updated Repository of Syntheses of Research Evidence about Health Systems

John Lavis, Kaelan Moat

Professor, McMaster University

Imagine any of these scenarios:

Scenario 1: A ministerial task force urgently needs information about the effects of various physician-payment options on quality of care.

Scenario 2: A local health authority seeks information about alternative healthcare delivery models for rural communities.

Scenario 3: A research-funding agency needs to identify what's known about implementation strategies to support national policy priorities.

The [McMaster Health Forum](#) is now able to offer support for these and many other situations through [Health Systems Evidence](#) (HSE), a continuously updated repository of syntheses of research evidence about governance, financial and delivery arrangements within

health systems, and about implementation strategies that can support change in health systems. HSE contains details about policy briefs, overviews of systematic reviews, systematic reviews, and protocols of systematic reviews relevant to health systems, as well as links to user-friendly summaries of syntheses, scientific abstracts, and full-text reports (when freely available). The syntheses address a broad range of questions, including those about the effectiveness of particular options for strengthening health systems.

Health Systems Evidence can save health system managers and policymakers a great deal of time by helping them to rapidly identify a synthesis of the best available research evidence on a given topic that has been prepared in a systematic and transparent way, the year that the search for studies was conducted, the quality of the synthesis, the countries in which the studies included in the synthesis were conducted, and the key findings from the synthesis.

Health Systems Evidence is a collaboration between the McMaster Health Forum and three partners: McMaster University's [Program in Policy Decision-making](#) (which identifies and codes reviews about health system arrangements), the [Canadian Cochrane Centre](#) (particularly the Policy Liaison Office, which supports the use of syntheses, and Health Systems Evidence in particular, by health system managers and

policymakers), and [Rx for Change](#) (which identifies and codes reviews about implementation strategies).

Health Systems Evidence is updated monthly.

In addition to the **search function** available via the McMaster Health Forum, a **Health Systems Evidence Service** alerts subscribers monthly to newly identified syntheses of research evidence. The service currently covers five specific topics that have been the focus of stakeholder dialogues conducted by the Forum - strengthening primary healthcare, supporting chronic pain management, optimizing diabetes management, strengthening chronic disease management, and rural health. The email alerts include essential details about each newly-identified synthesis, plus links to one-page summaries.

Archived issues are available. A new general service listing all newly-identified syntheses added to HSE each month will be available soon.

AGREE II: Launched and Online

Douglas Badenoch

Minervation Ltd, Edinburgh, UK

This article reports on the Appraisal of Guidelines for Research & Evaluation (AGREE) II- the new standard for practice guideline development, reporting, and evaluation (1).

The AGREE Next Steps Consortium* came together with the objectives of strengthening the measurement properties of the original AGREE Instrument, refining the items, and improving the supporting documentation to help users implement the instrument with more confidence.

What's new in AGREE II?

Key changes from the original version include a new 7-point response scale to replace the original 4-point scale, modifications to half of the original 23 items, which are grouped into the original 6 quality domains, and a newly restructured User's Manual to help guide users on how to more confidently implement the instrument.

Carry out AGREE II appraisals Online

The official home of the AGREE II is the AGREE Enterprise Website. We invite you to visit our newly

redesigned website (www.agreetrust.org) to access the new AGREE II.

New features of the website include:

1. a "My AGREE" platform where a personal account can be created to complete AGREE II appraisals online and to manage your own library of practice guideline appraisals;
2. new on-line training tools to assist AGREE II users to apply the tool;
3. a discussion forum for ongoing communication.

All features are freely accessible.

Translations

The French and the Dutch translation of the AGREE II are already available on the website (see Resource Centre). We would like to encourage translation of the AGREE II in other languages. The translation protocol can be found on the Resource Centre of our website.

We hope you will find the AGREE II useful in your guideline evaluation and development work. We welcome your feedback on the AGREE II and the new AGREE website (agree@mcmaster.ca).

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1. Brouwers M, Kho ME, Browman GP, Burgers JS, Cluzeau F, Feder G, Fervers B, Graham ID, Grimshaw J, Hanna S, Littlejohns P, Makarski J, Zitzelsberger L for the AGREE Next Steps Consortium. AGREE II: Advancing guideline development, reporting and evaluation in healthcare. *Can Med Assoc J.* 2010. Available online July 5, 2010. doi:10.1503/cmaj.090449

UK Prostate Link: A Web Portal to Critically-Appraised Health Information About Prostate Cancer

Douglas Badenoch,

Minervation Ltd, Edinburgh, UK

Introduction

This paper reports the development, application and preliminary testing of an appraisal instrument for the large-scale, systematic assessment of the quality of web information about prostate cancer. The UK Prostate Link website can be found at: www.prostate-link.org.uk

Prostate cancer is an area in which web information is particularly problematic. Compared with information about other common types of cancer, it is hard to find, there is a lack of co-ordination and some resources are of poor quality.¹

The UK National Audit Office showed how poorly prostate cancer compared with other cancers in terms of information provision at the point of care.² Furthermore, Black and Penson have highlighted issues with balance and coverage of sites.³

For these reasons, we were commissioned by a coalition of charities to develop a website that signposted the best quality information on prostate cancer across a range of websites.

What did we learn from other approaches?

Web projects are more successful if they involve end-users right from the start.⁴ For this reason we began by consulting potential users on what they wanted to see in a quality rating instrument. We already know that good quality information can improve the quality of life of

cancer patients⁵. We also know that around 70% of prostate cancer patients end up using information that has been derived from the net.⁶ Recent evidence further suggests that web-based decision aids may improve decision-making by prostate cancer patients.⁷

It is not just patients who use information. For health professionals, there is good evidence to suggest that electronic information has the greatest impact where the sources are full-text, evidence-based, and incorporate user-friendly summaries.⁸⁻¹⁰

The details of our literature review can be found on the UK Prostate Link website.¹¹ Our conclusion was that any quality criteria must address:

1. Accessibility (Can users get access to the information when they need it?)
2. Usability (Can users find what they need from the resource?)
3. Reliability (Is the information provided of good quality)

Our approach borrows heavily from the methods of Evidence-Based Health Care (EBHC) and uses a checklist score to generate a quality ranking of relevant web sites.

What are our quality criteria?

We assess the quality of information against the following criteria:

Usability and accessibility items:

1. Is the site accessible without a login?
2. Does the site conform to web Accessibility standards?
3. Is the site design clear and transparent?
4. Is the site design consistent from one page to another?
5. Can users find what they need on the site?
6. Is the format of information clear and appropriate for the audience?

Reliability items:

7. Is it clear who has developed the web site and what their objectives are?
8. Does the site report a robust quality control procedure?
9. Is the page content accurate and balanced?
10. Is the page updated regularly?
11. Does the page cite relevant sources where appropriate?

Each web page is scored with these 11 items using a scale of 0 to 3, where:

0 = Never; 1 = Sometimes; 2 = Mostly; 3 = Always.

The ranking algorithm doubles the weight of the Reliability scores, resulting in a score from 0 to 48, and then calculates a percentage quality score. This score is used to rank the quality of web sites providing information on prostate cancer.

How did we validate this approach?

The principal aim of the quality score was to rank the order of search results. Therefore, we tested its validity with a blind comparison of the rank order produced by two different assessors. The assessors looked at forty websites and used the instrument to rank their quality. This produced a highly significant correlation, with a Spearman Rank Order coefficient of 0.611, $p < 0.00001$, suggesting that the correlation between the scores was highly significant. This tells us that our approach has good inter-rater reliability.

We have also evaluated this approach in hands-on usability testing and other face-to-face sessions with site users. This has led us to believe that the main limitation of this approach is usability and not validity.

"I found the information very comprehensive and gave plenty of details. It also pointed out possible risks and side effects. I particularly liked the fact that information is sourced from many different organisations.."

UKPL User, User Research, December 2009.

[Get the full report of this user research](#)

Other features of the site

The project has addressed a number of key issues in providing information about cancer.

Relevance: People affected by prostate cancer need information at particular points in time that is relevant to their current circumstances.¹² Therefore, we have developed customised "sets" of information to match these specific points. Each set corresponds to a question that has been asked of us by our end-users. More questions will be added as we receive them via our website.

Transparency: This ambitious undertaking is not without its pitfalls. In particular, it is important to be transparent about our assessments, so a detailed scorecard is provided for every page we assess.

Updating: The site is updated monthly according to a rolling schedule. We visit the target sites and check for new and updated content. Any changes are then uploaded to the UKPL site. Some information providers send us notifications of new content. These requests are prioritised within the updating schedule.

To date, the project has indexed and assessed around 1,800 web pages from 59 websites on 150 topics.

Conclusion

We believe that this project deploys a valid assessment of information quality as an effective aid to search engine ranking and a practical approach to the problem of information overload. We further believe that the model could be extended to other areas of health care, subject to:

- Further testing of internal and external validity
- Training of assessors
- Provision of adequate editorial supervision

We are always keen to hear what people think of the site, and we welcome feedback from readers to talk@minervation.com. Thank you for your time.

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GROUPS

Diagnosis: Driving from Evidence-Based Clinical Practice to Research

Lorena Cifuentes, Claudio Vera, Luz Letelier

Pontificia Universidad Católica de Chile

There is a tremendous gap between the quality and quantity of evidence available for therapeutic versus diagnostic clinical decisions. The relative lack of primary diagnostic studies in many health areas has resulted in few existing systematic reviews of diagnostic studies. By contrast, there are currently thousands of published and ongoing systematic reviews in therapy. (For example, In the Cochrane Library: > 6,200 systematic reviews for therapeutic interventions and 2 for diagnostic interventions)

In an effort to reinforce and improve research in the diagnostic field in Chile, a group of members of the Evidence-based Medicine Unit at the Pontificia Universidad Católica de Chile applied and received a grant from the Chilean National Funding for Health Research and Development to create a "Research Methodology Programme in Diagnostic tests". The objective of this programme is to provide clinical researchers with the necessary methodological knowledge and skills to develop high-quality projects in the diagnostic area. We began this initiative with 2 courses, the first one has recently finished and the

second one will start in April 2011. Every course lasts 8 weeks; 2 weeks of lectures and 6 weeks of online work. An interdisciplinary educational and research team oversee the programme, including 18 faculty involved with diagnostic research in our institution: 6 members of Evidence-based Medicine Unit, 3 faculty of the Department of Clinical Laboratory, 1 PhD statistician, 1 Master in Public Health, 1 consultant in Research Ethics, 2 Psychiatrists, 1 faculty of the Department of Radiology, 1 faculty of the Centre for Clinical Research, 1 Master in Clinical Epidemiology, and 1 Master in Medical Education.

The programme includes 3 units:

1. Theory of the Development of clinical research in diagnostic tests.
2. Evaluation methods of different diagnostic tests.
3. Development of a fundable Research Project

The course begins with a session about how to develop a well-structured research question in diagnosis, then goes through the different types and designs of diagnostic studies, how to evaluate existing tests and ends with the development of a research protocol in the framework of local funding options. We include a critical appraisal workshop in the second Unit where the participants have the opportunity to analyze existing literature.

At the end of the first Unit, participants present their proposed research question and tutors rank each proposal. During the next 5 weeks participants develop projects that are ranked highly following the guidelines of the Chilean National Funding for Health Research and Development. Each proposal is assigned a final mark by a tutor and co-tutor.

As a guidance for some of our lectures we mainly used the following textbooks:

1. Hulley SB., eds. Designing clinical research. 3rd ed. Lippincott Williams & Wilkins 2007.
2. Knottnerus JA., Buntinx F. The evidence base of clinical diagnosis. 2nd ed. Willey –Blackwell 2009.
3. Guyatt G., eds. Users' guides to the medical literature. 2nd ed. McGraw Hill 2008.

Currently, we are analyzing participants' written evaluation of the first course. In the near future, we will follow-up with participants in order to establish if they were able to successfully apply for funding with the diagnostic research proposals they developed during the course or for other diagnosis-related projects. We are hopeful that our course will facilitate high-quality research in the area of diagnostic studies. Our ultimate purpose is to promote the development of new

diagnostic tests and improved use of existing tests to improve patients' care.



Evidence-Based Medicine in the Gulf, Giant Steps on the Road

Mazen Ferwana

Co-director of National & Gulf Center for Evidence-Based Health Practice

Evidence-based medicine (EBM) in the Gulf region goes back to at least 1999 when champions in Oman, Bahrain and the Kingdom of Saudi Arabia (KSA) started to introduce the concept through lectures and courses. In 2004, a big breakthrough occurred when the National and Gulf Center for Evidence Based Health Practice (**NGCEBHP**) was established. That establishment was achieved with the help of Prof. **Gordon Guyatt** and his colleagues in CLARITY at McMaster University. The center aims to disseminate the knowledge and skills of EBM not only in Saudi Arabia (where it is located) but also throughout the Gulf and the Middle East. In the following year (2005), the first PAN Arab Congress of EBM was held with contributions by more than 16 Arab countries, and resulted in the establishment of the Arab federation of EBM with the head office currently located in Cairo under the bylaws of the Arab League. The Gulf Cooperation Council Minister of Health Executive Office played a vital supportive role in this movement that has resulted in several achievements in many countries. The NGCEBHP has trained more than 5000 participants through more than 70 courses and workshops in a span of 6 years. Several national and regional conferences were also held on yearly basis. Other specialized training programs were provided for the first time in the region such as Clinical Practice Guidelines development, Qualitative Research Methods, Teaching EBM for undergraduates, GRADE, Training the Trainers, Decision analysis, Knowledge Translation, and the Comprehensive Systematic Review course.

Among the center's achievements are the publication of 4 Cochrane Reviews, 10 Cochrane protocols, and 3 Clinical Practice Guidelines (CPGs). The center has

successfully integrated EBM into Postgraduate residency training, and the health care authority has made EBM training mandatory in all residency programs across the KSA. Near-future projects include the implementation of EBM into the healthcare system (Embedding The Evidence or ETE), CPG synthesis, and Fellowship, Master Degree and PhD programs.

The Center has established collaborative relationships with 13 EBM working groups in the KSA (including the very active Jeddah group and Bahamdan Chair) and with important centers in the region including the Arabian Gulf University EBM center (Bahrain), Sharjah University in United Arab Emirates, and Sultan Qaboos University EBM Center (Oman). Collaboration with international organizations is also very active and the most recent one was the Memorandum of Understanding with the Joanna Briggs Institute (Australia). The NGCEBHP is recognized by GCC ministers of health as ***the referral center of EBM in the KSA & the Gulf region.***

Job Opportunity

NGCEBHP is currently a part of King Saud University for Health Sciences and looking for recruiting a new ***HEAD for Scientific Section.*** The center is searching for a PhD awarded professional with good experience in EBM who is willing to join the center's team in Riyadh. S/he will participate in the undergraduate and postgraduate EBM educational programs for health care professional and conduct and support research activities. The position also involves assisting in the development of EBM pathways and guidelines and the development of the EBM protocols and proposals, coordinating and monitoring the ongoing scientific and clinical practice projects in NGHA. Excellent tax-free salary, free housing accommodation and other benefits will be provided. Also there are vacant positions for M.Sc. awarded candidates for the positions of lecturers. Interested applicants can contact the Center via email ebm@ksau-hs.edu.sa or visit the website www.ngcebhm.org

Promoting Evidence-Based Clinical Practice in Urology

Philipp Dahm, MD, MHSc on behalf of the Evidence-Based Urology Working Group

Associate Professor of Urology, Associate Residency Program Director & Director of Clinical Research, Department of Urology, University of Florida

The Evidence-Based Urology Working Group (<http://evidence-based.urology.ufl.edu>), a truly international group of urologists from across the globe, was founded at the University of Florida in 2008 to promote evidence-based clinical practice among urologists through education and research. Early efforts to provide urology-specific resources included publication of the Users' Guide to the Urological Literature as well as an annual introductory course held at the American Urological Association (AUA) annual meeting now for six consecutive years. Since the last newsletter, we have the following exciting developments to report:

- **Evidence-Based Medicine Teaching in Residency:** The AUA Core Curriculum released earlier this year delineates the essential knowledge that can be expected from a urology resident in an Accreditation Council for Graduate Medical Education (ACGME) accredited program. For the first time, evidence-based medicine will be a specific component of this curriculum: A chapter with the title Evidence-Based Medicine and Clinical Trials among other topics addresses the domains of therapy, harm, prognosis, diagnosis, and review articles and specifies the relevant learning objectives for residency programs. The Evidence-Based Urology Working Group also has representation in the ACGME Milestones Group that is defining what level of competency should be expected at a given level of training.
- **Evidence-Based Reviews in Urology:** In 2009, the AUA launched a continuing medical education program called Evidence-Based Reviews in Urology (EBRU), a web-based program to teach practicing urologists critical appraisal skills. The basic framework is that of a structured online journal club that uses articles that are of good methodological quality and highly relevant to the practice of urology. Materials from the Users' Guide will be posted alongside as suggested reading for a total of 8 articles posted monthly from October through May. In its inaugural year, this program attracted over three hundred participants. Going forward in its second year the program will also target residency program directors as a convenient way to teach

critical appraisal skills. Residency program directors can sign up their residents as a group and receive information on their residents' pre- and post-tests to assess learning success.

- Evidence-Based Urology in Practice: *BJU International* has taken a leadership role among urology journals in promoting the principles of evidence-based clinical practice. Since 2009, this journal has published a total of 15 review articles that address core EBM evidence-based medicine concepts such as intention-to-treat, completeness of follow-up and stopping early for benefit in the context of clinical scenarios taken from the day-to-day practice of urology. In light of the tremendous success of this series, *BJU International* will republish the entire series in a supplemental issue that is expected to serve as an excellent resource for urologists interested in evidence-based medicine.
- Evidence-Based Urology Textbook: In late 2008, Wiley Publishers approached the Evidence-Based Urology Working Group about a urology edition in the successful "Evidence-Based" series. This hardcover book that covers the entire spectrum of urology in over 40 chapters is unique in that it addresses focused clinical questions using a systematic, evidence-based approach. Introduced with a foreword by Gordon Guyatt, the book has stimulated much interest in the urological community selling over 300 copies in the first three months.

In conclusion, after six year of continued efforts, considerable progress has been made in promoting evidence-based clinical practice in the urological community. The members of the Evidence-Based Urology Working Group, many of them trained at the Evidence-Based Clinical Practice Workshop, remain indebted to the McMaster faculty for their leadership and inspiration.

Resources for Training in Evidence-Based Behavioral Practice (EBBP)

¹Bonnie Spring, PhD, ABPP,

²Molly Jean Ferguson, MPH

¹Professor of Preventive Medicine, Psychology, and Psychiatry; Behavioral Medicine Director & Co-Program Leader for Cancer Prevention, Northwestern University

²EBBP Program Manager, Department of Preventive Medicine, Northwestern University

The Evidence-Based Behavioral Practice (EBBP) Project was commissioned in 2006 by the National Institute of Health's Office of Behavioral and Social Science Research (OBSSR). The project's goal is to bridge the gap between behavioral medicine research and practice by harmonizing and upgrading evidence-based practice across health professions.

The EBBP Project team is comprised of a multidisciplinary Council, Scientific Advisory Board, Practitioner Advisory Council (PRAC), and a panel of expert consultants. Led by Bonnie Spring, Ph.D. at Northwestern University in Chicago, Illinois, USA, the Council for Training in Evidence-Based Behavioral Practice includes representatives from medicine, nursing, psychology, public health, and social work. Using a team science approach, the EBBP Project identifies training gaps and creates learning resources to facilitate research to practice translation. Professionals from relevant health disciplines collaborate to learn, teach, and implement evidence-based practice.

EBBP entails making decisions about how to promote healthful behaviors by integrating the best available evidence with practitioner expertise and other resources, and considers the characteristics, state, needs, values and preferences of those who will be affected. This is done in a manner that is compatible with the environmental and organizational context. The figure below shows the Three Circles Model of EBBP (Satterfield et al., 2009; Spring & Neville, 2009).

Three Circles Model of EBBP



The EBBP Project has launched seven online training modules that can be found at www.ebbp.org/training.html. The 7 modules are:

The EBBP Process: Learn and conduct the steps of the EBBP process with a simulated client and/or community.

Searching for Evidence: Learn the strategies for choosing and using EBBP information tools.

Introduction to Systematic Reviews: Learn how to evaluate and conduct a Systematic Review.

Critical Appraisal: Learn about the critical appraisal of studies that attempt to determine whether an intervention works.

Randomized Control Trials: Learn what randomized controlled trials (RCTs) are and the basics of how to design and conduct them.

Shared Decision-Making with Individual Clients: Learn about the shared decision-making process as a practitioner working with individual clients. You will work through cases and attempt to balance the best available evidence with client preferences and resources in a clinical setting.

Collaborative Decision-Making with Communities: Learn about the collaborative decision-making process as a public health practitioner working with communities. You will work through a case from the point of view of a public health program manager working in a local health department.

The modules are freely available for learners and teachers. Continuing education credits are currently available for psychologists, physicians, and nurses, and will be available shortly for social workers.

For more information about the EBBP Project, visit the project website at www.ebbp.org. Please contact Molly Ferguson, the EBBP Program Manager, at m-ferguson@northwestern.edu with any questions/comments.

SOURCE Evidence-Based Surgery Program Update

¹Achilles Thoma, ²Teegan Ignacy

¹Clinical Professor and Head Division of Plastic Surgery Departments of Surgery and Clinical Epidemiology and Biostatistics, McMaster University, ²EBS Program Manager, Department of Surgery, McMaster University

The Surgical Outcomes Research Centre (SOURCE, McMaster University) Evidence-based Surgery (EBS) Working group continues to develop its "Users' Guides to the Surgical Literature" article series that is being published in the Canadian Journal of Surgery (CJS). Each article is prefaced with a surgical scenario, and the series is intended to educate surgeons and residents regarding how to find, assess and incorporate evidence from the surgical literature. Currently 13 articles in this series have been published in CJS and 2 have been submitted for publication (visit www.cma.ca/cjs to obtain a free article copy).

Recent series articles published:

1. Dijkman B, Kooistra B, Bhandari M. (2009) "Users' guide to the surgical literature: how to work with a subgroup analysis." Can J Surg 52(6): 515-22.

List of articles currently submitted to CJS for publication:

1. Thoma A, Farrokhyar F, Bhandari M, Goldsmith CH. Users' guide to the surgical literature: how to assess a survey in surgery.
2. Cadeddu M, Farrokhyar F, Levis C, Thoma A. Users' guide to the surgical literature: how to assess confidence intervals.

Watch for future articles on practice guidelines and continuing surgeon education.

SOURCE has also developed an interactive EBS Workshop based on the article series. The workshop consists of small group tutorials led by trained surgeon tutors on the various topics covered in the EBS articles (tutors: Dr. Achilles Thoma, Dr. Charlie Goldsmith, Dr. Forough Farrokhyar, Dr. Mohit Bhandari). The group held EBS workshops for the Faculty in the Department of Surgery at McMaster University on the topics of economic analysis (Nov 2006), randomized controlled trials in surgery (May 2007), health-related quality of life (Jan 2008), systematic reviews & meta-analyses (Feb 2009) and power calculation & sample size (Feb 2010).

The next workshop for faculty is planned for February 9, 2011 on the topic of decision analysis.

In August 2010, Dr. Achilles Thoma and Dr. Mohit Bhandari were invited to the "Evidence-based Plastic Surgery: Transforming the Specialty" Symposium in Colorado Springs attended by the leaders and journal editors in the field of plastic and aesthetic surgery. The aim of the symposium was to strategize how to further incorporate evidence-based practice within the specialty. Several milestones were achieved including the requirement that the Level of Evidence, which speaks to the methodological quality of the research, be provided for all presentations at national meetings and conferences and in journal publications. There was a push to increase the volume of Level I and II Evidence, while decreasing the volume of Level III and IV Evidence publications in plastic surgery related journals over the next 5 years. Dr. Bhandari was the keynote speaker at this event.

This year SOURCE is holding an EBS Workshop for Plastic Surgeons, November 26, 2010 at the Royal Botanical Gardens in Hamilton, ON. We hope to further encourage the incorporation of EBS into the field of plastic surgery using surgical examples of relevance to plastic surgeons. Following the success of this workshop, SOURCE hopes to hold workshops for other surgical subspecialties.

For more information about SOURCE and the EBS program, visit our website at www.fhs.mcmaster.ca/source/ or contact Teegan Ignacy, EBS Program Manager at ignacyta@mcmaster.ca, 905-522-1155 x 35874.

Special thanks to Dr. Charlie Goldsmith, Dr. Roman Jaeschke and Dr. Gordon Guyatt for lending their editorial expertise to our series articles.

Offering the McMaster Evidence-Based Clinical Practice Workshop in French

Guylène Thériault

Family Medicine Residency Teacher
McGill Teaching Unit Gatineau

Although initially offered in English only, both the McMaster Evidence-Based Clinical Practice (EBCP) and Oxford CEBM Workshops now offer the course in Spanish in response to interest by Spanish-speaking clinicians. This initiative has been highly successful and workshop organizers have recently developed material

to support a French-language group, which will be overseen by the author, Eddy Lang and Genevieve Turcotte. A French version of the conference brochure, detailing this opportunity, has been distributed to selected individuals in Quebec, Canada and in France.

The sustainability of a French-speaking EBCP Workshop group will be dependant on participation by clinicians, and we would encourage interested parties to contact the author directly by email (guylene.theriault@ssss.gouv.qc.ca). Individuals who could assist in disseminating information on the workshop among French-speaking professionals are also encouraged to contact the author directly.

We believe that there is a great value to providing the EBCP Workshop in French, with unique French-language modules. Not the least of which will be the opportunity to expand opportunities for participation in the workshop. Currently, there is active debate as to how best incorporate the principles of Evidence-Based Medicine into clinical practice, and even how best to translate the term into French. The currently accepted term is "Médecine factuelle" that translates into "Factual medicine" which is less meaningful than the English term.

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MAILING LIST

We would like to keep our mailing list as up to date as possible. If you are planning to move, have moved, or know someone who once received the newsletter who has moved, please e-mail maddock@mcmaster.ca or write your new address here and send to Deborah Maddock, CE&B, HSC 2C12, McMaster University Health Sciences Centre, 1200 Main Street West, Hamilton, ON L8N 3Z5, Canada. Thank you!

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SIGN UP A COLLEAGUE!

If you would like to encourage a colleague to attend the workshop next year, please e-mail maddock@mcmaster.ca or write the address here and send to Deborah Maddock, CE&B, HSC 2C12, McMaster University Health Sciences Centre, 1200 Main Street West, Hamilton, ON L8N 3Z5, Canada. Thank you!

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HOW TO TEACH EVIDENCE-BASED CLINICAL PRACTICE

Sunday, June 5th to Friday, June 10th, 2011
REGISTRATION BEGINS September 20, 2010

Come to McMaster, the birthplace of evidence-based health-care, to join other clinician educators interested in communicating the concepts of evidence-based clinical decision-making to their clinician learners. The workshop accepts clinicians from a wide variety of backgrounds; there are typically groups in internal medicine, pediatrics, emergency medicine, surgery, family medicine, gastroenterology, a Spanish group and a French group. This international workshop caters to all those interested in medical education, and may be of particular interest to program directors, chief residents, hospitalists, and educators with a focus on continuous quality improvement/quality assurance.

The EBHC workshop is aimed at clinicians, physicians, nurses, pharmacists, occupational and physiotherapists, dentists, chiropractors and other health-care professionals - who wish to go beyond simply learning evidence-based clinical practice (EBCP) and advance their skills in communicating EBCP concepts. The workshop uses small-group formats for participants to practice their skills. Participants should be prepared to practice their own teaching in the small group format.

What is Evidence-Based Clinical Practice / Evidence-Based Medicine?

Evidence-based clinical practice is an approach to health-care practice that explicitly acknowledges the evidence that bears on each patient management decision, the strength of that evidence, the benefits and risk of alternative management strategies, and the role of patients' values and preferences in trading off those benefits and risks.

Why Are Evidence and Values or Preferences Important?

Daily, clinicians confront questions about the interpretation of diagnostic tests, the harm associated with exposure to an agent, the prognosis of a disease in a specific patient, the effectiveness of a preventive or therapeutic intervention, and the costs and clinical consequences of many other decisions. Both clinicians and policy makers need to know whether the conclusions of a systematic review are valid, and whether recommendations in practice guidelines are sound. The tradeoffs between risks and benefits are often finely balanced. Patients with differing values and preference will make different choices.

Members of the Department of Clinical Epidemiology and Biostatistics at McMaster University, in collaboration with other colleagues trained in both medicine and in clinical epidemiology, have developed a set of common sense strategies to assist in the critical appraisal of evidence. They have also developed approaches to explicitly considering values and preferences in clinical decision-making, thereby encouraging the practice of EBCP.

Workshop Objectives

- To help participants advance their critical appraisal skills, and their skills in acknowledging and incorporating values and preferences in clinical decision making
- To help participants learn how to teach EBCP using a variety of educational models

Workshop Format

The workshop is offered as a one-week intensive course. Participants will be learning in small groups led by clinical epidemiologists and practitioners from McMaster and other institutions. The workshop will consist of small and large group sessions, individual study time and opportunities for workshop participants to lead teaching sessions using their own ideas, materials, and reflecting their own experiences.

Workshop Participants

Some course participants will come with a basic understanding of the principles of EBCP. These individuals will be as interested in deepening their understanding of these principles as they are in learning new teaching strategies. Other participants will have extensive experience and a deep understanding of the principles, and will be coming to advance their teaching skills. Still others will have intermediate skills. To accommodate everyone's needs, we will try to create a number of groups with different emphases.

Workshop Materials

Prior to the workshop, participants will have access on-line to educational materials that include literature on teaching critical appraisal and EBCP, the small group learning format, and a set of clinical problems. We expect participants to familiarize themselves with this material in advance of the workshop and to arrive prepared to role-play teaching settings that they have encountered and in which they wish to improve their performance.

Tutorial Group Selection Syllabus

The following will help you select the appropriate level of tutorial group for you:

Category A

You feel there are important gaps in your understanding of the principles of critical appraisal. You often feel uncertain of yourself when teaching, and wonder whether you've got it right when you critically appraise an article or whether you've missed something important. You are looking for a tutorial group in which a substantial amount of the time is spent on understanding critical appraisal.

Category B

You are comfortable with critical appraisal issues, but don't consider yourself expert. You have done a fair bit of teaching in the area, and are looking for a tutorial in which some time will be spent on content issues, but the majority of the time will be spent on evidence based teaching techniques.

Category C

You have lots of experience and expertise, perhaps with formal training in clinical epidemiology or a related field. You are looking for a tutorial in which the overwhelming proportion of the time is spent on teaching evidence based clinical practice.

Travel, Facilities and Accommodation

The workshop will be held in McMaster University's Health Sciences Centre. Upon confirmation of a definite placement in the workshop, you will receive a formal letter, access to the website and email copies of the Planning and Logistics Guides and background and introductory materials will be provided with general information regarding specifics of the workshop, accommodation and travel. **TRAVEL AND ACCOMMODATION ARRANGEMENTS ARE THE RESPONSIBILITY OF THE REGISTRANT.** Modest accommodation is available on campus. Other accommodations are available in city hotels, 10-30 minutes away by foot, bus or car.

Cancellation Policy

A refund will be returned, minus \$100.00 administrative fees for a cancellation up to May 5th, 2011. There will be **NO** accepted refunds after May 5th, 2011 (one month prior to the workshop).

Registration Fees

	Cdn \$*	US \$*
One member from institution	\$3000	\$2900
Two members from institution	\$2500 each	\$2420 each
Three or more members from institution	\$2000 each	\$1935 each

*Includes 13% Harmonized Sales Tax (HST # R119-035-988). Tuition includes all workshop materials, photocopying services, access to computer literature searching and dinner on the first and last evenings.

- Acceptance in the workshop will be **confirmed by letter**. If you have not heard about your placement by February 1st, 2011, please contact our office.
- Deadline for registration is May 16, 2011.

Please return the completed application form and registration fee (North American registrants please send cheque or money order; non-North American registrants please send international money order drawn on a USA or Canadian bank).

PLEASE MAKE THE REGISTRATION FEE

PAYABLE TO **McMASTER UNIVERSITY**, and send to:

Monica Owen

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Please direct any inquiries to:

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Registration can be done on-line at:

http://ebm.mcmaster.ca/online_registration.html

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|---|---|
| <input type="checkbox"/> Emergency Medicine | <input type="checkbox"/> Pediatrics |
| <input type="checkbox"/> Family Medicine | <input type="checkbox"/> Spanish-Speaking |
| <input type="checkbox"/> French-Speaking | <input type="checkbox"/> Surgery |
| <input type="checkbox"/> Internal Medicine | |

Address: _____

City: _____

Province: _____

State: _____

Postal Code: _____

Country: _____

Telephone: _____

Fax: _____

Email: _____

Please fill in the following essential information!

Which Tutorial Group Would Best Meet Your Needs?

- Category A:** A group focusing primarily on principles of critical appraisal and EBCP.
- Category B:** A group focusing more or less equally on principles of critical appraisal and on teaching EBCP.
- Category C:** A group focusing primarily on teaching EBCP.

Language Comprehension: In an effort to optimize your participation in the workshop, we would appreciate your response to the following questions. Please mark the paragraph that best applies to you.

- Highly fluent in English.** Can follow and participate fully in a conversation with many people when they are speaking quickly and interrupting one another.
- Fluent in comprehension and speech in English.** Can understand fully and speak fluently, but have some difficulty in a group when people are speaking quickly and interrupting one another.
- Fluent in comprehension in English,** except in groups when people are speaking quickly and interrupting one another. Some hesitation in expression, as English vocabulary is limited.
- Not completely fluent** in either comprehension or speaking in English