Newsletter of the International Society for Evidence-Based Health Care
Newsletter 9, October 2012

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 of the Society

- 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 EBCP
- 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.

Evidence-Based Clinical Practice Office
McMaster University, Canada

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Conference Report

Kameshwar Prasad

The **"First International Conference for Evidence-Based Healthcare"** (ISEHCON 2012) was organized by the Clinical Epidemiology Unit of All India Institute of Medical Sciences (AIIMS), New Delhi under the Chairmanship of Prof. Kameshwar Prasad, Director, Clinical Epidemiology Unit & Professor of Neurology at AIIMS, New Delhi. AIIMS is the premier medical institute of India and a leader in medical education, health research and healthcare, and always ranks first in all surveys amongst all the medical schools in the country.

The Conference was held at the India International Centre, New Delhi from 06 to 08 October 2012. This was the inaugural Conference of the International Society for Evidence-Based Healthcare. British Medical Journal (BMJ) joined it as its media partner. The conference was inaugurated by the Director General of Health Services, Government of India and the closing session of the conference was marked by the gracious presence of the Chairman, Board of Governors of the Medical Council of India, who delivered the closing speech.

The main objectives of holding this important conference of international importance were:

1. To create awareness about evidence-based approach in healthcare policy and practice among policy makers, guideline developers and healthcare practitioners in India.
2. To enhance the knowledge of participants about ongoing activities, prevalent policies and approaches based on evidence around the world in the field of healthcare.
3. To demonstrate the advantages of evidence-based approach in healthcare especially in resource constraint settings and while treating poor patients and also describe its limitations.
4. To enhance awareness of importance of teaching evidence-based healthcare in undergraduate and postgraduate medical education to ensure that graduating physicians are conversant with healthcare practice based on evidence.
5. To encourage medical colleges across India to interact with international experts and include evidence-based healthcare teaching in their curriculum.
6. To demonstrate the role of patient-centred approach based on evidence to policy makers and healthcare practitioners participating in the conference from India and abroad.

The Conference was attended by about 225 participants from India, Taiwan, Australia, USA, Saudi Arabia, Sweden, Canada, UK, South Africa, Italy, Switzerland, Indonesia, Japan, Netherlands, Spain, Iran, Bangladesh, Chile, Philippines, Oman, Qatar and 25 top class faculty members from around the world. The format of the conference included Interactive large group sessions, small group workshops, Case Studies, Group Work, and Poster Presentations. The conference had a rich and extensive Scientific Programme including a keynote Address, four plenary Sessions, eight scientific sessions, eight workshops, 38 oral Presentations, and 40 poster presentations. The participants discussed and analyzed issues related to implementation of Evidence-Based Practice and deliberated effective methods to implement evidence-based healthcare for improving the population health.

This ISEHCON 2012 provided an excellent opportunity to EBM enthusiasts to present their recent work, ideas and research at this International platform. This was a very stimulating international event, which provided an excellent opportunity to bring together experts, teachers, and practitioners in evidence-based healthcare to exchange ideas, information and most up-to-date experiences in implementing Evidence-Based practice to enhance population health across different regions and diverse cultures.

The Conference also had Pre-Conference Workshops on topics related to Evidence-Based Medicine. These workshops were conducted by the renowned international experts in the field of Evidence Based Medicine notably Dr. Gordon Guyatt from the McMaster University, Canada Dr. Paul Glasziou, former Director of Oxford

University's Centre for Evidence-Based Medicine, Dr. Trish Groves, Deputy Editor, BMJ and many more. These workshops were conducted on the following topics:

- Using "GRADE System" for developing evidence-based guidelines
- Systematic Reviews and Meta-Analysis
- Bringing Evidence to Healthcare Professionals- How to publish research (BMJ)
- An Evidence Based Framework for Effective and Sustainable System Change
- Evidence-Based Dentistry
- Evidence-Based Practice for Allied Health
- Evidence-Based Medicine Curriculum for UG/PG

It is noteworthy that the Conference was organized without any support (neither cash nor kind) from any Pharmaceutical company. The funding was mainly raised from delegate registration fee, from All India Institute of Medical Sciences, and support from various agencies of Government of India viz. Indian Council of Medical Research, Council of Scientific and Industrial Research, Department of Science and Technology, and Medical Council of India.

What was achieved?

More than the expected number of participants indicated the relevance of the conference and its themes. All the halls were full, in fact, chairs had to be added to several sessions. A curtain-raiser meet with the media, and television programmes enhanced the visibility of the conference, and highlighted the objectives and themes for the benefit of public. Front page headlines covering the themes of the conference in the main newspapers raised awareness of the issues among the public, professionals and the policy-makers alike.

The richness of the academic programme was evident from the huge attendance and interaction at the workshops and sessions. Two workshops were repeated on demand.

Common to all the events was the desire to move beyond knowledge as an end in itself, to foster awareness, understanding and strategic thinking designed to strengthen the utilisation of knowledge for the goal of Evidence Based Healthcare in resource constrained settings. Arising from the interaction with the wide number of groups and networks brought together at this conference, ISEHCON 2012 was able to establish increased linkages with a number of like-minded healthcare practitioners. A set of recommendations in the form of 'Delhi Declaration' was produced and presented by Dr Paul Glasziou, the Chairman of ISEHC Board in the closing session.

Evaluation

In the closing session, the participants filled up a response form with items asking them to rate their perception about the quality of the programme, learning activities, organization of, and presentations during the conference. It also asked whether their expectations from the conference were met and whether their attendance at the conference would prove useful. Overall, 90% or more participants rated the items positively.

Future steps:

The conference has generated demand for EBM workshops from different regions of the country. Those planning the workshops have already contacted the potential experts during the conference and will organize them in different parts of the country. The medical council of India is keen to consider introducing EBM in undergraduate and postgraduate courses across India. We have a plan to hold a workshop and a plenary session during the Cochrane colloquium 2014 likely to be held in Hyderabad, India. Overall, the conference proved influential in accelerating evidence-based health care movement globally, but more so in India.

International Society of Evidence - Based Health Care First Conference at New Delhi 6-8 October 2012

Paul Glasziou

Declaration

- The Society would like to thank the people of India for hosting the first Conference of the International Society for Evidence-Based Health Care. We especially wish to thank the All India Institute of Medical Sciences and Professor Prasad and his team for organizing this very successful first conference.
- To reduce the gap between research and clinical practice, the conference concluded that it is essential and feasible for the modern practice of health care to incorporate the principles and skills of Evidence-Based Health Care.
- To improve the effectiveness of health care delivery in different parts of the world, especially for lower and middle income countries, the Society is eager to harness the expertise within its networks to support the development of Evidence-Based Health Care, and to overcome the limited access to information which is as much a cause of inequities in health as limited access to health services.
- We agree with the proposal that the teaching, training and practice of EBHC should be incorporated in the health care services of India, including its introduction into the undergraduate and postgraduate curricula of all the medical colleges in India.
- Through its international panel of experts, the Society is committed to help with any assistance to establish the teaching, training, practice and monitoring of EBHC in India.

A New Initiative of the McMaster Evidence-Based Clinical Practice Workshop: The Clinical Practice stream

Jason Busse

The McMaster Evidence Based Clinical Practice (EBCP) Workshop began in 1982 (then called "How to teach critical appraisal"), and has historically focused on providing guidance for clinician educators interested in enhancing their skills for teaching the principles of evidence-based practice to others. Each year, however, there have been attendees whose focus was on acquiring the fundamentals of evidence-based practice. To meet this need, the 2012 EBCP Workshop launched an advanced clinical practice stream. The new initiative targeted at clinicians who wish to improve their clinical practice through enhanced skills in reading, interpreting, and applying the medical literature. This article describes our initial experiences with this Workshop stream.

Prior to the 2012 Workshop, Gordon Guyatt and the tutors discussed what concepts should be covered in the Practice stream, and decided we should survey clinicians who had enrolled in this stream and ask about their interests. We devised a list of 74 methodological topics and asked participants to endorse those in which they were interested. Most respondents endorsed all 74 items (we should have seen this coming) and so the tutors worked with their assigned groups on the first meeting of the Workshop to prioritize topics. For future workshops we may ask registered attendees to provide a brief list of their methodological topics of interest instead of providing them with an exhaustive list of options.

The Teaching stream of the Workshop uses problem-based learning, and there was some concern among tutors that the Practice stream attendees may want an entirely didactic approach. Tutors quickly learned, however, that attendees were interested in a hybrid approach – some didactic teaching to introduce or re-enforce concepts, but also assignment of homework and the opportunity to both engage in problem-based learning and to present on methodological topics. Practice stream attendees were largely receptive to

the idea that the best way to learn a methodological concept was to teach it to their Workshop colleagues. As opposed to the Teaching stream, the focus was more on presenter's understanding of the topic versus their teaching techniques. Furthermore, there were members who were eager to take on individual presentations, those that were more comfortable presenting in pairs or groups, and those who favoured participating in groups discussions but not taking part in a presentation themselves. All attendees wanted tutors or tutor-trainees to interrupt their presentation in order to clarify or correct material when appropriate.

We encouraged attendees to bring in research articles of their choosing, relevant to their clinical practice. This had two positive effects: 1) attendees were interested in the material under study, and 2) tutors had to think on the fly to assess articles they had not previously seen (versus relaying on packages prepared for the course) which provided a real time example of the process of critically evaluating an article.

In the Teaching stream it is typical practice to assign attendees material to prepare for the 1st class on the evening before the Workshop begins. We did not assign material to our Practice stream group, and the feedback after the course was that this was appreciated. However, after the introductory session in which methodological topics were prioritized, the group was very receptive to homework assignments, particularly when they involved applying a concept or critiquing an article (versus simply reading material).

The Teaching stream sets aside time each day for independent study, to allow participants time to work on their teaching presentation. Our group, and others, felt that this time was excessive for the Fundamentals stream, and suggested that at least some of this time would be better spent by having the tutors or tutor-trainees re-enforce concepts of particular interest.

The feedback from our group at the end of the Workshop was extremely positive, with some members noting they would not have signed up for the Workshop if not for the option of participating in the Practice stream. Some attendees noted their intention to sign up for the Teaching stream next year, and others relayed an interest in signing up for the Practice stream again as a refresher course on EBCP. Given the considerable interest and positive feedback, the Practice stream will be a permanent addition to the McMaster EBCP Workshop.

"The Great Diamond Hunt" – Fun Teaching GRADE to EBM Naïve Hospital Physicians

Per Olav Vandvik
Linn Brandt
Ingvil Sæterdal

I have been teaching physicians evidence-based practice for a decade. My experience with GRADE in guideline development has spurred me to introduce GRADE in all of my teaching activities, replacing traditional checklists for critical appraisal. This article reports how we, in February 2012, incorporated GRADE in critical appraisal of research evidence and development of treatment recommendations in a four-day workshop for 12 hospital physicians (10 consultants, 2 residents) naive to evidence-based practice.

The workshop combined interactive introductory lectures with group work and plenary sessions. Learning objectives in the workshop focused on practical skills for each step of the circle in evidence-based practice (question formulation, searching, critical appraisal, application in practice and evaluation). Physicians brought their own clinical questions to the table and each group selected questions to be answered during the workshop. Day 1 was spent on conceptual understanding of evidence-based practice, question formulation and searching for research evidence. Searching for answers to clinical questions has become a lot easier with the use of our McMaster PLUS pyramid search, a search engine freely available to all health personell in Norway (http://plus.mcmaster.ca/helsebiblioteket/Search.aspx). Each group identified relevant studies for their selected clinical questions, setting the scene for critical appraisal on day 2.

Day 2 focused on critical appraisal of systematic reviews and randomised controlled trials with GRADE methodology. In the introductory lecture I first presented a clinical scenario concerning the

effect of enteral feeding versus parenteral feeding in patients with acute pancreatitis. We translated the scenario into a PICO question together highlighting the importance of identifying all patient-important outcomes and quickly found a relevant recent Cochrane systematic review through our pyramid search engine. Then I introduced the concept of "diamond hunting" in systematic reviews: We hunt for quantitative summary effect-estimates (looking like diamonds in the forest plot) for patient important outcomes and need to determine our confidence in those estimates (GRADE definition for quality of evidence). Then I showed the forest plot for mortality (RR 0.50, 95% CI 0.28-0.91) and asked participants to discuss the results with their neighbour and consider what factors that could affect their confidence in the estimates. During a 20-minute discussion all five factors relevant for quality assessment in GRADE emerged and we also calculated relative and absolute risks using a 2 x 2 table. Physicians intuitively questioned the quality of the meta-analysis and underlying trials (risk of bias through lack of blinding), number of patients included in the studies (imprecision), possible inconsistency between trials (heterogeneity), applicability in Norway (indirectness) and if any negative studies had not been published (publication bias). After 75 minutes of intense interaction I congratulated them with having identified a system that we call GRADE, left the last 20 slides of my presentation (outlining the GRADE methodology) unshown and sent them to work in groups.

In the following session each group assessed the systematic review they had identified and made a GRADE evidence profile (for at least one outcome) to be presented in the plenary session. Each group included a facilitator familiar with GRADE methodology who elected to use GRADEpro for this exercise. The group work and plenary session provided an excellent opportunity to discuss methodological issues related to GRADE factors. In the next session each group assessed a randomised controlled trial with GRADE (for a clinical question where only one RCT was available) and made another evidence profile that was discussed in the plenary session. This second round nicely reinforced methodological issues related to GRADE.

Day 3 focused on how to make clinical practice guidelines with GRADE methodology and how to critically appraise existing practice guidelines. The introductory lecture presented how GRADE facilitates a systematic and transparent process for moving from evidence to recommendations through integration of benefits and harms, quality of evidence, patient values/ preferences and resource considerations. Each group was then charged with developing a recommendation for the clinical question of acute pancreatitis. This was a deliberate choice as the Cochrane systematic review used GRADE and presents a Summary of Findings table for all patient important outcomes. The plenary session revealed that groups judged GRADE factors differently. Through revisiting the evidence profiles and discussing the four factors to consider when moving from evidence to recommendations we reached agreement for a strong recommendation for nasojejunal feeding in patients with acute pancreatitis with low to moderate confidence in the effect-estimates for patient important outcomes. Participants identified a need to change practice, as most patients with acute pancreatitis in Norway probably do not receive nasojejunal feeding. Have a look at the Cochrane review if you are curious (Al-Omran, et al. Enteral versus Parenteral Nutrition in Acute Pancreatitis. Cochrane Database of Systematic Reviews 2010, issue 1). The absolute effects on mortality (79 fewer per 1000), multiple organ failure (156 fewer per 1000), operative interventions (181 fewer per 1000) and sepsis (190 fewer per 1000) are quite impressive.

The rest of the workshop included critical appraisal of practice guidelines, diagnostic studies and a session about statistics where we covered relative and absolute effects and confidence intervals in depth. Informal evaluation indicates that incorporating GRADE worked well in this workshop format.

The workshop is followed by two months of clinically integrated learning and a 1-day seminar on how to integrate evidence-based practice with quality improvement and patient safety initiatives. Physicians are now working on their own clinical questions, going through each step of the evidence-based practice circle and documenting the process in a work-file. To what extent they succeed with using GRADE when being on their

own will become evident when, this coming spring, we meet for the final one-day seminar.

(Teaching material available at request)

What Has the EBCP Workshop Done For Me? A Proposal to Better Understand the Educational, Research, and Policy Impact of the McMaster EBCP Workshop

Christopher R. Carpenter

Like Las Vegas, does what happens in Hamilton stay in Hamilton? I doubt it. The McMaster Evidence Based Clinical Practice (EBCP) Workshop began in 1982 (then called "How to teach critical appraisal"). Every June since then, hundreds of participants have trekked to McMaster University to absorb new and evolving ideas that they could bring back to their home institutions to teach their learners how to practice Evidence Based Medicine (EBM). Some of these attendees became energized proponents and returned as Tutor-Trainees or Tutors. Furthermore, many EBCP attendees subsequently sent their colleagues or trainees to McMaster to produce 2nd and 3rd generation learners. Many more prior attendees undoubtedly developed EBM work products and/or teaching techniques within their regional or professional communities. Unfortunately, too many of these valuable innovations remain undisclosed to the broader EBCP world.

This year while serving as a Tutor in one of the emergency medicine EBCP small groups, I compiled a list of accomplishments inspired by the McMaster EBCP Workshop within my specialty based solely upon memory. Here is the short version with hyperlinks and credit to the EBCP-attendee innovators who developed these work-products:

1) EBM Websites

a. Washington University Archives (archived on TRIP) and EBM Toolbox [Chris Carpenter]
b. Indiana University [Tony Seupaul, Ben Hunter]
c. Eastern Virginia Medical School [Charlie Graffeo]

2) Independent Continuing Medical Education (CME) events

a. BEEM [Andrew Worster] – BEEM also has original EBM research and dozens of EBM topic reviews & editorials.
b. Evidence Based Diagnostics [Carpenter]

3) Organized Medicine CME Events – lectures presented at national meetings

c. Evidence Based Diagnostics: The Good, The Bad, & The Ugly, Society for Academic EM, Chicago 2012 [Carpenter]
d. Beyond Journal Club: Knowledge Translation in GME, Society for Academic EM, Chicago 2012 [Seupaul, Lang, Carpenter]
e. Knowledge Translation Consensus Conference – daylong consensus conference May 2007 with entire peer-reviewed issue of *Academic Emergency Medicine* devoted to KT in Nov 2007. [Lang]

4) New Peer-reviewed Series

f. *Academic Emergency Medicine* Evidence Based Diagnostics – includes interactive websites to facilitate Bayesian decision making and Shared Decision Making with patients that are being developed in conjunction with Wiley-Blackwell and Washington University. [Carpenter] (http://pmid.us/21843213)
g. *Journal of Emergency Medicine* – topic reviews with EBM teaching point [Sam Keim] (Example 1 http://pmid.us/19097732, Example 2 http://pmid.us/22123173)

5) Original EBM research manuscripts

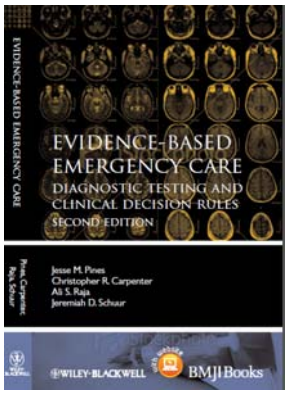
h. BEEM Rater instrument reliability and validity trials – tool and mechanism to funnel practice-changing or practice-enhancing research information to busy clinicians.

[Andrew Worster, Chris Carpenter] (http://pmid.us/22092904)

i. Incorporating EBM Into Graduate Medical Education [Charles Graffeo, Carpenter] (http://pmid.us/21199085)
j. Graduate Medical Education and Knowledge Translation – contains a much more illustrative KT pipeline than that presented during one of the large group sessions [Seupaul, Carpenter] (http://pmid.us/17967963)
k. Compilation of KT Strategies and Nomenclature Across Disciplines [Carpenter] (http://pmid.us/22203646)

6) Textbooks

l. Evidence Based Emergency Care: Diagnostic Testing & Clinical Decision Rules [Chris Carpenter]



m. Evidence Based Emergency Medicine [Eddy Lang]

7) Textbook chapters

n. "Teaching Lifelong Learning Skills: Journal Club and Beyond" in Rob Rogers' Practical Teaching in Emergency Medicine, 2nd Edition (2012, in press) [Carpenter]

8) Non-peer reviewed series – many physicians do not read the peer-reviewed literature or EBM books so their only exposure to these concepts are through trade journals. Here are a few examples of attempts to reach clinicians through this medium.

o. What is EBM? [Worster]
p. What is the Cochrane database? [Worster]
q. Secrets to Healthy Skepticism [Carpenter]
r. Overcoming the Medical Information Overload [Carpenter]
s. Topics reviewed using EBM methods
   i. Performing & Analyzing LP [Seupaul]
   ii. Therapeutic Hypothermia [Carpenter]
   iii. End Tidal CO2 monitors [Carpenter]

9) Social Media

t. Twitter (@ emjclub) [Carpenter]
u. Facebook [Brian Cohn]

Undoubtedly, my attendance at the 2004, 2010, and 2012 McMaster EBCP Workshops changed the trajectory of my career. My official title at Washington University is "Director of Evidence Based Medicine" and I have lectured around the United States and Canada on this topic over the last 5-years. More importantly, I have forged friendships and proliferative professional associations through my EBCP colleagues.

The EBCP faculty would like to learn what innovations you developed following your attendance at prior workshops. We know how busy you are, so we will plan to organize a 5-minute web-based survey to gather this information. If the innovations are as prominent and exciting as expected, we will proceed with three ideas intended to jumpstart the concepts of recognizing past attendees' post-EBCP experiences into learning lessons for current attendees:

1) A new large group didactic lecture highlighting these ideas/resources at each year's McMaster EBCP Workshop.
2) Annual "poster sessions" during the McMaster EBCP Workshop to encourage current or prior attendees to present workshop-inspired products.
3) An online repository to web-based resources that are byproducts of the McMaster EBCP Workshop.

If you have additional ideas about how to identify, organize, or highlight the "fruit" of prior workshops, please contact me at carpenterc@wusm.wustl.edu. The link for the survey: https://wucrtc.qualtrics.com/SE/?SID=SV_7VctbMtZFDAFLqB
I will plan to send the survey by November 30 and the results will be shared in a subsequent Newsletter of the International Society for Evidence-Based Health Care.

Rio Workshop Addresses Organizational Use of Evidence

Suzana Alves da Silva
Maria Elisa Cabanelas Pazos
Peter Wyer

The Rio Evidence Based Clinical Practice Workshop began in 2006 with the participation of tutors from McMaster University and elsewhere in North America. The teaching model used in the Rio workshop is similar to the model that has been used for years at McMaster, but with an emphasis on the social constructivism of Paulo Freire.[1] From the outset, participants were encouraged to work with their own problems. With this approach it was possible over the last few years to encourage participants to reflect on their own issues more critically, using a systematic approach to identifying priorities and formulating questions before conducting search strategies and critical appraisal of resulting literature.

The Rio workshop has from its inception aimed to address the health system on the organizational and policy level. As noted in Figure 1, many Rio Workshop participants operate primarily in the area of management and within Brazilian health ministries, represented by Health Secretary Offices, Regulatory Agencies and other Public Institutions. It is a common practice in Brazil for health professionals to perform multiple activities such as managerial roles in addition to clinical care. Table 1 illustrates this variety of roles for the 2012 Rio workshop participants, who believed that they could apply knowledge gained in the workshop to different areas (Figure 2).

2012 participants perceived the workshop very helpful in enhancing their understanding of concepts of evidence-based medicine that are essential to the use of scientific information in their professional activities (Table 2).

The Department of Science and Technology of the Brazilian Ministry of Health has incorporated principles taught at the workshop in policy development. These include the use of questions structured in PICO format for therapeutic and diagnostic issues to facilitate health technology assessment throughout their work teams all over Brazil.[2, 3]

This accumulated experience over the last 5 years led us to enhance the content of the 2012 Rio workshop to address issues of guidelines and hospital based health technology assessment. We believe that the implementation of evidence-informed decision making in health care organizations may be enhanced through dissemination of the core concepts of EBCP.

Table 1: 2012 Rio Workshop participants' principal professional roles

Professional role	None	Some	Mostly
Individualized care	27%	36%	37%
Health Management	18%	18%	64%
Policy Maker	27%	23%	50%
Educational activities	9%	55%	36%

Table 2: 2012 Rio participants' perception on how much the workshop enhanced their knowledge on different topics:

Topic	Not at all	Very little	Little	A lot	Extremely
Problem delineation	0	0	8%	79%	13%
Structured questions	0	0	10%	64%	26%
Search strategy	0	3%	10%	72%	15%
Critical appraisal	0	0	8%	59%	33%
Interpretation of results	0	0	13%	64%	23%
Applicability	0	0	8%	64%	28%

Figure 1: Distribution of participating institutions from 2009 to 2012.

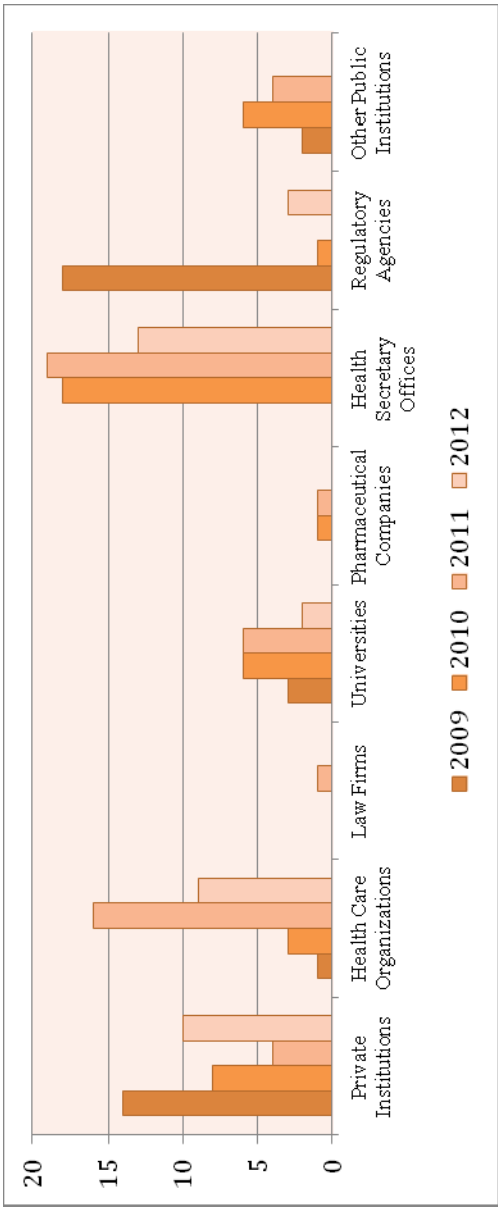
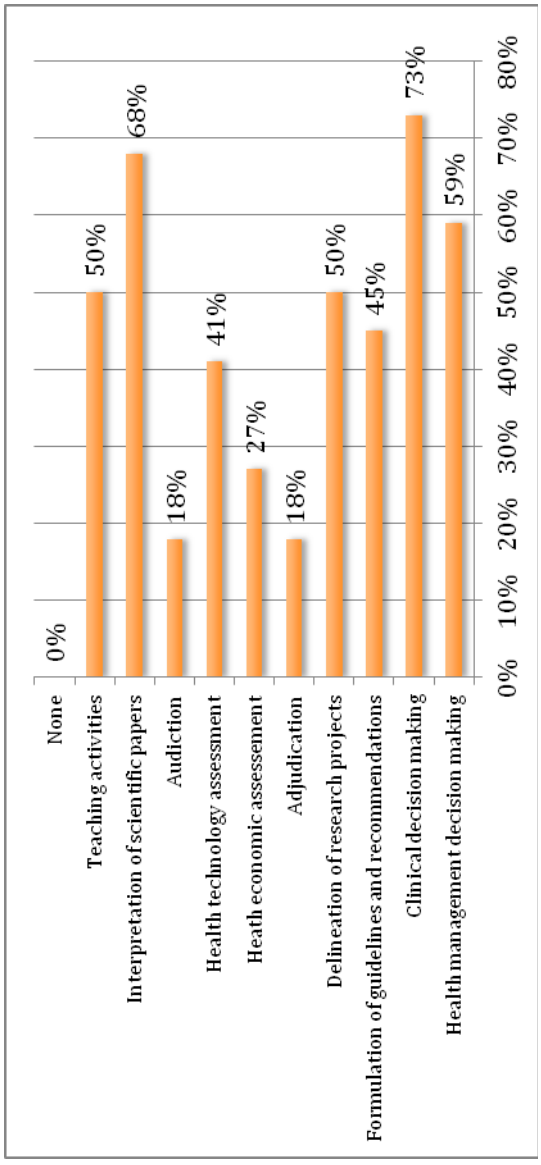


Figure 2: 2012 Rio participants' perceived ability to use knowledge acquired in the workshop to various clinical and administrative tasks.



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Crafting and Disseminating Consumer Messages on Sugary Drinks

Lynda Corby

A strategic initiative for the British Columbia Ministry of Health is to support, through public awareness and education, healthy eating practices that contribute to reducing the incidence of chronic disease. The excessive consumption of sugary drinks by children often replaces intake of healthier drinks and contributes significantly to caloric intake, which in turn may contribute to childhood obesity. Although many factors contribute to obesity, to address the alarming trend of childhood obesity, respected national and international agencies are engaged in trying to reduce the consumption of sugary drinks.

While the relationship between excess energy intake from sugary drinks and adult obesity is less clear, there is evidence linking sugary drinks to chronic disease such as type 2 diabetes, hypertension and coronary heart disease in adults.

Sipping on sugary drinks throughout the day can also harm the teeth, leading to dental caries and dental erosion. Making healthy food choices, limiting sugary drinks and snack foods, using proper flossing and brushing techniques and having regular dental check-ups are important preventive measures to support dental and general health.

To support the development of consistent core/common messages focused on reduction of sugary drinks among teens and adults, the BC Ministry of Health collaborated with Dietitians of Canada.

Project Objectives

To develop a series of evidence-based, common/core motivational messages regarding sugar-sweetened beverages that:

- Support parents and teenagers in understanding that reduction of sugary drinks is important for their own health and that of other family members
- Inspire parents and teenagers to make positive changes in their choice of beverages for themselves and their families in settings that include the home, school, recreation facilities and eating out (including the work place)
- Were written in plain language appropriate for a range of socio-economic and educational backgrounds. Messages were to be short and focused, practical, inspirational, action-oriented, do-able and within the control of the target group
- Were focus tested for comprehension and likelihood of the message to motivate / inspire action

An Advisory Committee consisting of representatives from the BC Ministry of Health, Dietitians of Canada, The BC Pediatric Society, a policy/education consultant, and Health Canada was established to guide and provide feedback during the message development process.

Two focus groups of dietitian practitioners were recruited from the greater Vancouver area to validate the messages from an evidence perspective and for their practicality for use in education programs. Participants for 4 English-speaking consumer focus groups – 2 parent groups with at least one teenage child, and 2 teenage groups (age 14-17 years) - were also recruited to test the validated messages.

A series of consumer fact sheets was developed based on the feedback from the focus groups. To facilitate wide dissemination of the key messages and to enable health intermediaries to customize the fact sheets for different audiences – parents, teens, adults and seniors – a Fact Sheet Generator web-based tool http://bcfsg.dietitians.ca was created in collaboration with Dietitians of Canada. Data from users of the Fact Sheet Generator indicate high ratings of satisfaction on the key messages (97% very satisfied), the photographic images (98% very satisfied) and on the FSG overall as a tool (93% very satisfied).

EBM Teaching Tip: Explaining Type 1 and Type 2 Errors

Juan Pablo Domecq Garces
Gabriella Prutsky
M. Hassan Murad

EBM learners need to understand the concepts of type 1 and type 2 errors to better realize the limitations of evidence and interpret biomedical research findings. Standard definitions are provided in statistics textbooks[1] and are included in Box. Nevertheless, many alternative and more simplified definitions exist and are used to teach learners who don't deal with these concepts frequently. Type 1 and 2 errors have been called "failing to believe the truth" and "believing a falsehood"; respectively. They have also been called "false positive" and "false negative"; among other names.

Type I error:

- The probability of rejecting a true null hypothesis.
- Usually denoted by the Greek letter α (alpha).
- Equals the predetermined acceptance level of significance of a test.

Type II error

- The probability of rejecting a true alternative hypothesis.
- Usually denoted by the Greek letter β (beta).
- Relates to the power of a study (1- β)

In this article, we present another approach that we find more simple, practical and intuitive. As described in Figure 1 and 2, the two errors are explained using the analogy of a near-sighted (myopic) person trying to look at 2 stars in the sky.

It is easier to start by explaining type 2 error first. In Figure 1; the two stars are in fact different; however, for a near-sighted person, they both look the same and he is unable to discriminate between them (type 2 error). In Figure 2; the two stars are in fact identical; however, the person has a stained lens that makes him think one of the stars is different from the other (Type 1 error). One can take this analogy further and explain the concept of power. A "higher power" prescription of the lenses may simulate an increased ability to detect a true difference; or increased power.

We believe the knowledge of these concepts has important clinical implications to those applying EBM to their practice. It is important that they know studies on occasions can demonstrate erroneous findings. Multiple testing and fishing expeditions for significance is an example of type 1 error. On the other hand, small and underpowered studies may miss a true signal (type 2 error) and their results should not be interpreted as if a signal did not exist.

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1. Murad MH, Shi, Q. Basic concepts in biostatistics. In: Varkey P. Mayo Clinic Preventive Medicine and Public Health Board Review. Oxford University Press; 2010. P 3-12.
2. Shermer M. The Skeptic Encyclopedia of Pseudoscience 2nd volume; 2002. p. 455.

Figure 1

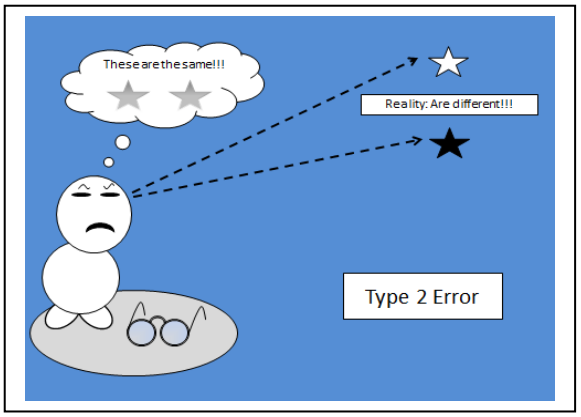
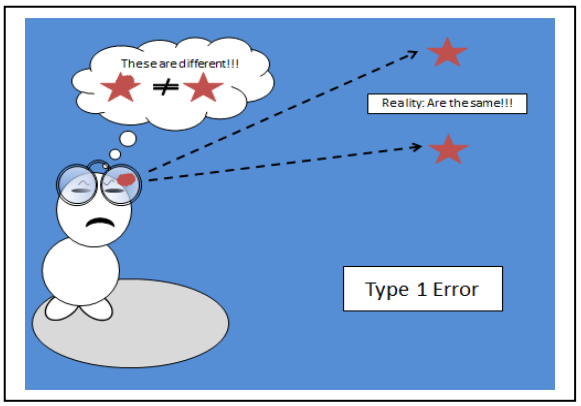


Figure 2



Editorial Dissent

Gordon Guyatt

Garces and colleagues offer an imaginative, amusing, and engaging approach for anyone misguided enough to try and teach type 1 and type 2 errors to clinical learners.

Yes, I believe it is misguided to introduce these concepts, and I personally never do so. Rather, I suggest clinician users of the medical literature ask the question: was the study big enough? They can answer this question by determining whether the confidence interval crosses the threshold between an effect large enough to warrant administering an intervention and an effect too small to warrant administering an intervention.

The confidence interval approach to precision and the uncertainties generated by insufficient sample size are presented in a chapter in the Users' Guide to the Medical Literature[1]. A more sophisticated discussion that puts the approach in the context of GRADE has appeared recently in the Journal of Clinical Epidemiology.[2]

Can anyone make good use of Garces and colleagues compelling way of presenting type 1 and type 2 error? Most certainly - students learning how to do research, and in particular those planning clinical trials. For clinicians using the literature to guide clinical practice, the alternative focusing on confidence intervals is far more relevant and informative.

1. Guyatt G, Walter SD, Cook D, Wyer P, Jaeschke R. Confidence Intervals. In: Guyatt G, Rennie D, Meade M, Cook D, editors. *The Users' Guides to the Medical Literature: A Manual for Evidence-Based Clinical Practice.* 2nd ed. New York, New York: McGraw-Hill, 2008.
2. Guyatt GH, Oxman AD, Kunz R, Brozek J, Alonso-Coello P, Rind D, et al. GRADE guidelines 6. Rating the quality of evidence--imprecision. *J Clin Epidemiol* 2011;64(12):1283-93.

A Proposed Guidance for Handling Trial Participants with Missing Data in Meta-Analyses of Dichotomous Outcomes

Elie A. Akl
Gordon H. Guyatt

Background: Systematic reviewers including all randomized participants in their meta-analyses need to make assumptions about the outcomes of those with missing data. They also need to address the extent to which missing data increases the risk of bias.

Objectives: To provide systematic review authors with guidance on dealing with participants with missing data for dichotomous outcomes.

Methods: We conducted a systematic survey of the methodological literature regarding "intention to treat" analysis. We also used an iterative process of suggesting guidance and obtaining feedback to arrive at a proposed approach.

Results: We consider here participants excluded from the trial analysis for “non-adherence” but for whom data are available, and participants with missing data (Figure 1). Non-adherent participants excluded from the trial analysis but for whom data are available should in most instances be included in the meta-analysis, and in the arm to which they were randomized. For participants with missing data, systematic reviewers can use a range of plausible assumptions in the intervention and control arms (Figure 2). Extreme assumptions include the worst case scenario. Less extreme assumptions may draw on the incidence rates within the trial (e.g., same incidence in the trial control arm) or in all trials included in the meta-analysis (e.g., highest incidence among control arms of all included trials). The primary meta-analysis may use either a complete case analysis or a plausible assumption. Sensitivity meta-analyses to test the robustness of the primary meta-analysis results should include extreme plausible assumptions (Figure 2). When the meta-analysis results are robust to extreme plausible assumptions, inferences are strengthened. Vulnerability to extreme plausible assumptions

suggests rating down confidence in estimates of effect for risk of bias.

Conclusions: Currently there is no guidance for systematic reviewers to judge extent of risk of bias due to missing data. Our proposed approach consists of an initial complete case analysis followed by sensitivity analyses using progressively more stringent assumptions to evaluate confidence in estimates of effect. Our team is working on a 3-year research project to evaluate this and other approaches in order to suggest a formal guidance for the Cochrane Collaboration to adopt for its handbook.

SOURCE Evidence-based Surgery Program update

Sylvie Cornacchi
Achilleas Thoma

The Surgical Outcomes Research Centre's (SOURCE, Department of Surgery, 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 on how to find, assess and incorporate evidence from the surgical literature into their practices. Currently 15 articles have been published in CJS (visit www.cma.ca/cjs to obtain your free article copy).

List of new published articles in the last year:

1. Thoma A, Cornacchi SD, Farrokhyar F, Bhandari M, Goldsmith CH. Users' guide to the surgical literature: How to assess a survey in surgery. Can J Surg 2011; 54(6): 394-402.
2. Cadeddu M, Farrokhyar F, Levis C, Cornacchi SD, Haines T, Thoma A. Users' guide to the surgical literature: Understanding confidence intervals. Can J Surg 2012; 55(3):207-11.

List of articles currently in preparation:

1. Coroneos CJ, Voineskos SH, Cornacchi SD, Goldsmith CH, Ignacy TA, Thoma A. Users' guide to the surgical literature: How to evaluate clinical practice guidelines.

Hamilton Workshops for McMaster Faculty

SOURCE has also developed an interactive EBS Workshop based on the article series. The workshop consists of small group tutorials lead by trained surgeon tutors on the various topics covered in the EBS articles (tutors: Dr. Achilleas Thoma, Dr. Charlie Goldsmith, Dr. Forough Farrokhyar, Dr. Luis Braga, Dr. Michelle Ghert, Dr. Mohit Bhandari). The group held EBS workshops for the Faculty in the Department of Surgery 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 and meta-analyses (Feb 2009), power and sample size (Feb 2010), decision analysis (Feb 2011), and randomized controlled trials in surgery (Feb 2012). We are planning another workshop on February 13, 2013 on the topic of surveys in surgery.

EBS Workshop for Practicing Surgeons and Residents

In May 2012, SOURCE held an EBS workshop for surgeons and residents of all specialties at King Faisal Hospital & Research Centre in Jeddah, Saudi Arabia. Drs. Thoma, Goldsmith, Braga and Farrokhyar travelled to Jeddah to tutor the 3-day intensive workshop which covered 6 articles, each tackling a particular topic in research methodology. Forty-two residents and faculty attended this successful event.

For more information about SOURCE and the EBS program, visit our website at www.fhs.mcmaster.ca/source/ or contact Manraj Kaur at 905-522-1155 ext. 35874 or Sylvie Cornacchi at cornacs@mcmaster.ca.

Special thanks to Dr. Charlie Goldsmith, Dr. Roman Jaeschke and Dr. Gordon Guyatt for lending their editorial expertise to our series articles. Our appreciation also goes to Dr. Deborah Cook for her kind encouragement.

A Clinical Practice Guideline for the Care of Septic Patients in Resource-limited Settings.

Jason P. Fedwick
Eddy S. Lang

Sepsis is a leading cause of death worldwide, in the United States alone, approximately 750 000 cases of sepsis are diagnosed each year and severe cases carry up to a 50% mortality rate. Although not well studied, the largest burden of sepsis likely occurs in the developing world. Over 80% of the world's population lives in low to middle income countries and studies from these areas report mortality rates from severe sepsis in excess of 80%.

Encouragingly, early goal directed therapy (EGDT), the prompt administration of antibiotics, fluids, vasoactive medications and blood products to meet specific physiologic goals, decreases sepsis mortality. The Surviving Sepsis Campaign released clinical practice guidelines in 2004 and 2008 and compliance with their recommendations has demonstrated improved outcomes[1]. However, it remains unclear which specific components of early goal directed therapy are responsible for the decrease in mortality.

Complicating matters further, the benefits of EGDT and the feasibility of EGDT implementation has been called into question. Less than 2% of surveyed anesthetists working in Africa would be able to implement these sepsis guidelines in their entirety and a significant proportion lacked consistent access to intravenous fluids, broad spectrum antibiotics, oxygen and monitoring equipment [2].

Sepsis guidelines that are relevant and feasible for patients in poorer regions of the world are needed. To this end, the International Federation of Emergency Medicine in collaboration with Guidelines International Network plans to develop clinical practice guidelines for the care of septic patients in resource-limited settings (further information on these organizations can be found at www.ifem.cc and www.g-i-n.net).

The Guidelines International Network has set rigorous standards for high-quality guideline development that are feasible for modestly funded groups to follow [3]. Members from the International Federation of Emergency Medicine will use these standards to appraise existing guidelines and adapt them for use in resource-limited settings. In addition, this collaboration will draw upon the international ADAPTE Collaboration's systematic approach to adapt guidelines produced in one setting for use in a different context (www.adapte.org) as well as the AGREE II instrument to evaluate existing guidelines (www.agreetrust.org).

Clinical practice guidelines can be used to track quality metrics such as compliance with recommendations, time to diagnosis, timing and adequacy of first fluid bolus and antibiotic initiation and to evaluate changes to mortality and morbidity. This initiative will generate contextually appropriate practice guidelines that will meet local needs with specific consideration of minimal resource requirements.

1 Dellinger, R. P. *et al.* Surviving Sepsis Campaign: international guidelines for management of severe sepsis and septic shock: 2008. *Critical care medicine* 36, 296-327, doi:10.1097/01.CCM.0000298158.12101.41 (2008).
2 Baelani, I. *et al.* Availability of critical care resources to treat patients with severe sepsis or septic shock in Africa: a self-reported, continent-wide survey of anaesthesia providers. *Crit Care* 15, R10, doi:10.1186/cc9410 (2011).
3 Qaseem, A. *et al.* Guidelines International Network: toward international standards for clinical practice guidelines. *Annals of internal medicine* 156, 525-531, doi:10.1059/0003-4819-156-7-201204030-00009 (2012).

RAPADAPTE: A Rapid Guideline Adaptation Method for Clinical Guideline Development

Mario Tristán
Anggie Ramirez
Brian S. Alper

Policymakers and guideline developers need strategies to develop comprehensive reliable guidelines with limited resources. A specific need in Costa Rica stimulated creation of a rapid variation of the ADAPTE method and was found to produce a comprehensive, current, evidence-based guideline in less than six months.

In response to increasing incidence and mortality of breast cancer during the last ten years in Costa Rica, government authorities urgently requested the development of a national clinical practice guideline for the treatment of breast cancer in July 2010, and specified an expectation for completion within six months.

The approach to guideline development in use by the public health care service provider (CCSS) was to adapt previously published guidelines (the ADAPTE process) and classify evidence and recommendations using the GRADE system (Chacon, H. CCSS DDSS –AAIP 472-2010). The ADAPTE process allows reduction of overall effort compared to creating a clinical practice guideline without considering other guidelines, but was not achievable in the six-month timeframe.

To meet this challenge a group of four professionals and two assistants modified the ADAPTE approach in three ways:

1. Instead of appraising a large number of guidelines to identify the optimal guidelines to adapt, a small number of candidate guidelines were considered until key guidelines were found which provided an adequate set for quality and scope. Guidelines that were selected included the defined clinical questions and had a score equal to or higher than 80% (per domain) on the Appraisal of Guidelines for Research and Evaluation (AGREE II) instrument.
2. Instead of conducting comprehensive evidence searches for each clinical question, high-quality evidence databases were used that have previously conducted systematic evidence searches and critical appraisals. The databases used for this guideline were DynaMed (EBSCO Publishing) and EBM Guidelines (Finnish Medical Society Duodecim). Additional evidence searching was done when the collection of evidence and guidelines used were inadequate or inconsistent for addressing the clinical questions.
3. Stakeholder review was expedited by providing evidence-supported recommendations (with direct summarization of underlying evidence) and using the Rand/UCLA appropriateness method (Brook R, 1995. RAND Corporation, USA) for the validation of the expert panel recommendations. The first two consultations were made by electronic media, with the participation of 64 professionals from eight different disciplines (oncology, surgery, radiotherapy, primary care medicine, nursing, psychology, and nutrition)

The resulting clinical practice guideline was organized around nine clinical questions and including 90 recommendations. In addition to the main version for health care professional, a pocket version and a patients' version were created.

The guideline produced was rated highly on measures of comprehensiveness, currency, acceptance, and efficiency. Upon presentation to the community of guideline developers at the Guidelines International Network (G-I-N), there was a substantial demand for summarizing the RAPADAPTE (Rapid Guideline Adaptation) methodology derived from this experience in an English publication for others to validate its use in other settings. We hope to publish this methodology soon.

Canada's Evidence-Informed Healthcare Renewal (EIHR) Portal

Sue Johnston

A new portal added to the Health Systems Evidence website is providing easier, faster access for health system policymakers and stakeholders to find policy-related information focused on healthcare renewal in Canada.

Canada's Evidence-Informed Healthcare Renewal (EIHR) Portal is a continuously updated repository of policy-relevant documents including jurisdictional reviews, stakeholder position papers, and intergovernmental communiqués, and provides 'one-stop-shopping' for the many types of documents that can support healthcare renewal.

The portal's integration with Health Systems Evidence recognizes the importance of having access to context-sensitive, policy-relevant documents to supplement global, synthesized research evidence on how to strengthen or reform health systems, or how to get cost-effective programs, services and drugs to those who need them. Documents in the portal are coded to allow users to easily identify other related information in Health Systems Evidence, creating a single point of access to the ever-growing body of evidence related directly and indirectly to healthcare renewal.

Health Systems Evidence is the world's most comprehensive, free access point for high-quality evidence on health systems, and the addition of the portal enhances its value to policymakers, stakeholders and researchers throughout the world. Together, the two resources contain nearly 5,000 documents.

The EIHR portal, managed by a collaboration between the McMaster Health Forum and the Canadian Institutes of Health Research, was developed using a stakeholder-driven process as opposed to a researcher-driven process. Contents of the portal are updated regularly with new documents provided by 18 members of the EIHR Roundtable, a group formed last fall that includes ministries of health, research funding agencies, professional associations and other organizations from across Canada involved in healthcare renewal.

The portal allows users to search either broadly or for specific types of information based on priority areas or type of document. Search parameters in the portal can also be combined with topics, search terms and limits provided in Health Systems Evidence. A video tutorial and several documents about the portal are available on the website to help users navigate its functionality. The portal is available in both English and French.

The establishment of the EIHR portal for Canada reflects a growing interest in many countries, particularly low- and middle-income ones, to establish 'clearinghouses' for context-sensitive, policy-relevant documents.

John Lavis, director of the McMaster Health Forum who led efforts to establish both Health Systems Evidence and the EIHR portal, is using his experience to support other countries in efforts to establish their own portals containing relevant research evidence and policy-related documents.

Through the Evidence-Informed Policy Network (EVIPNet), which operates through the World Health Organization, a small network of teams from countries such as Cameroon, Ethiopia, Malawi and Uganda is receiving guidance through workshops and other activities to learn how to best establish portals that will aid in health systems decision-making in those countries.

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