Is evidence-based medicine overrated in family medicine?

YES — Ross E.G. Upshur MD MSc CCFP FRCPC C. Shawn Tracy
NO — Michel Labrecque MD PhD FCMF Michel Cauchon MD FCMF

YES. It might seem strange to purport that evidence-based medicine (EBM) is overrated. It has been described as a Copernican revolution in medicine, celebrated as one of the most important ideas of the 20th century, and considered the leading movement in modern clinical medicine. It is claimed to be the standard by which all medicine should be practised.[1] Surely arguing against EBM is akin to suggesting we return to the use of leeches and paternalistic authority.

Prima facie there is no argument against the claim that medicine should be evidence-based. It certainly seems preferable to alternatives: Whimsy-based? No-good-reason–based? The idea that good medical decisions should be based on evidence is at once uncontroversial and platitudinous. The fact that we are here presenting one side of a debate on the value of EBM for family practice reveals that EBM is far from uncontroversial and more than simply a platitude. Rather, it is a philosophy of clinical medicine. We will argue that the EBM model is overrated because of vagueness and incompleteness in its formulation; incongruence with the realities of family medicine; ubiquity and overexposure of the "brand"; and failure to meet its own standard.

Vagueness and incompleteness

The ubiquity of the term *evidence-based* would not be problematic if there were a clear definition of *evidence* in EBM. Unfortunately, there is not.[2] Rather, there is a reliance on a range of preferred clinical research designs for minimizing bias in measurement. If measurement were the entire task of medicine, this would not be a problem. The lack of serious attention given to other kinds of evidence in the EBM model and to the problem of how to apply evidence thoughtfully outside of its context of production reveals that EBM's theory of evidence is restrictive and incomplete.

If one seeks to characterize evidence produced by these research designs, one will quickly see that evidence is not synonymous with truth. Evidence is defeasible, meaning it can be overturned, it can be refined, and its status can be changed in light of new findings.[3] Given this dynamic and protean nature, it raises questions about what it means to base medicine on evidence. Basing medicine on evidence requires placing medicine on shifting sands rather than on a stable foundation. Closer attention to what we mean by the "evidence-based" metaphor is required.[4]

Incongruence with real-world family medicine

The stated steps of EBM give rise to an image of a patient that serves as a textbook problem from which to extract information. The clinician must then turn these data into a focused clinical question; search for studies and critique their validity and applicability; apply the average result to the patient; and evaluate the outcome. This seems on the surface to be a logical and cogent approach; however, many encounters in family practice do not yield clean, searchable questions. Integrating patient preferences and values is an integral component of family practice, but it comes at the end of the EBM process, despite the fact that the most important clinical question will usually be the normative one of what *should* be done for this patient?

Evidence-based medicine has been largely silent on the difficult task of integrating patient preferences and values. Consequently, contrasting movements such as *patient- or person-centred care* and *values-based medicine* have emerged as counterpoints to EBM to address this imbalance.[5] There are many aspects of family medicine in which a patient's illness has progressed beyond the current evidence; or the patient has been discharged by specialty care, yet still requires the attention of a physician.[6] This is becoming an increasing problem in the management of patients with comorbidities for whom the evidence base for care is almost nonexistent. As this is one of the fastest growing patient populations in family practice, the EBM approach will most assuredly be not only overrated, but largely irrelevant, if it retains its current structure.[7]

Ubiquity

There is a burgeoning range of activities that use the descriptor *evidence-based*. The phrase turns up in every facet of health care: nursing, dentistry, health policy, and public health. Evidence-based approaches have also seeped out of medicine into such domains as parenting and law (although it is not entirely clear how this squares with the long tradition of evidentiary reasoning in law). Marketers have seen the advantages of this label, so we have advertisements proclaiming evidence-based therapy!

There are now many varieties, indeed a vast ecology, of evidence-basedness, including a wide and divergent range of hierarchies ranking evidence and making recommendations. The terrain has become so populated a field guide is required to identify and distinguish legitimate evidence-based approaches from imposters.[8] With the ubiquitous use of the evidence-based nomenclature, it is nearly impossible for "real EBM" to live up to the hype.

Failure to meet its own standard

Despite numerous plaudits and widespread adaptation, the evidence for EBM itself remains scant. That we should simply believe it is the best approach is not by any means a persuasive argument, but in fact a retreat to the very dogmatism that EBM detests. Pointing out that other philosophies of medicine lack similar justification is not a positive argument. Evidence-based medicine has set a standard for evidence (the systematic review of randomized controlled trials) that it has not itself satisfied. The original manifesto of EBM recognized this problem and argued that EBM was more "fun," and expressed the opinion that it would lead to better patient care.[9] In fact, there is a good argument to be made that following evidence-based recommendations in some patient populations might result in unjustified prescribing, polypharmacy, and potential harm in complex and frail patients such as older adults. Belief trumps evidence, which is ironic, as that was precisely the criticism that the proponents of EBM originally leveled against the models that preceded it.

Conclusion

We have argued that EBM is overrated, but there are elements of EBM, now somewhat downplayed, that are essential to any form of clinical practice. For instance, the skills of critical appraisal are needed to navigate the information-rich and market-driven environment we inhabit as practitioners. Disciplined scepticism, context-sensitive reasoning, and humane attention to patient needs should be the skills we hold in highest regard. Evidence-based medicine is overrated in family practice precisely because it fails to teach these skills, and as a result they are underrated. Rather than evidence-based practitioners, we should be striving to create epistemically virtuous physicians.[10]

Dr Upshur is Professor in the Department of Family and Community Medicine and Dalla Lana School of Public Health at the University of Toronto in Ontario, and Medical Director of Clinical Research at Bridgepoint Health. **Mr Tracy** is Research Associate at Bridgepoint Health.

Acknowledgment

Dr Upshur is supported by the Canada Research Chair in Primary Care Research. The authors thank **Professor Paul Thompson** and **Mr Jonathan Fuller** for comments made on earlier drafts.

Competing interests

None declared

Correspondence

Dr Ross Upshur, Department of Family and Community Medicine, University of Toronto, 2075 Bayview Ave, Toronto, ON M4N 3M5; e-mail **ross.upshur@gmail.com**

References

1. Reilly BM. The essence of EBM. *BMJ* 2004;329(7473):991-2.
2. Haynes RB. What kind of evidence is it that evidence-based medicine advocates want health care providers and consumers to pay attention to? *BMC Health Serv Res* 2002;2:3. Epub 2002 Mar 6.
3. Upshur RE. Seven characteristics of medical evidence. *J Eval Clin Pract* 2000;6(2):93-7.
4. Upshur RE. If not evidence, then what? Or does medicine really need a base? *J Eval Clin Pract* 2002;8(2):113-9.
5. Miles A, Mezzich J. The care of the patient and the soul of the clinic: person-centered medicine as an emergent model of modern clinical practice. *Int J Pers Cent Med* 2011;1(2):207-22.
6. Upshur RE. The complex, the exhausted and the personal: reflections on the relationship between evidence-based medicine and casuistry. *J Eval Clin Pract* 2006;12(3):281-8.
7. Upshur REG, Tracy S. Chronicity and complexity. Is what's good for the diseases always good for the patients? *Can Fam Physician* 2008;54:1655-8.
8. Upshur RE. Evidence-based medicine, reasoned medicine or both? *J Eval Clin Pract* 2006;12(4):420-2.
9. Evidence-Based Medicine Working Group. Evidence-based medicine. A new approach to teaching the practice of medicine. *JAMA* 1992;268(17):2420-5.
10. Marcum JA. The epistemically virtuous clinician. *Theor Med Bioeth* 2009;30(3):249-65.

CLOSING ARGUMENTS — YES

Ross E.G. Upshur MD MSc CCFP FRCPC
C. Shawn Tracy

- Evidence is defeasible, meaning it can be overturned, it can be refined, and its status can be changed in light of new findings. Given this dynamic and protean nature, it raises questions about what it means to base medicine on evidence.

- Patients with comorbidities for whom the evidence base for care is almost nonexistent are one of the fastest growing patient populations in family practice. For them, the evidence-based medicine approach will most assuredly be not only overrated, but largely irrelevant, if it retains its current structure.

- Despite numerous plaudits and widespread adaptation, the evidence for evidence-based medicine itself remains scant.

- Disciplined scepticism, context-sensitive reasoning, and humane attention to patient needs should be the skills we hold in highest regard. Evidence-based medicine is overrated in family practice because it fails to teach these skills.

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