

Accreditation drives teaching: evidence-based medicine and medical education standards

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As evidence-based medicine (EBM) emerged as the cornerstone of clinical medicine in recent decades, it became clear that an associated change in medical education was required to ensure adequate coverage of the new skills that doctors would need. In response, medical educators sought to incorporate relevant EBM teaching into medical curricula at all stages. This led to the development of EBM education into a sub-field¹, straddling the vast fields of EBM and medical education. In recent years, there have been a variety of critiques of, and challenges to, EBM. For example, the dearth of tools that measure the impacts of EBM education on clinical practice and health outcomes suggest that there is much work to be done for those working in this area. Here we describe how assessment and accreditation may be used to advance EBM education.

An old adage in education is that ‘assessment drives learning’². The content and format of an assessment tells learners what topics are important (or unimportant) and the nature of the learning that will help them become ‘exam ready’. For example, including a large proportion of questions on atrial fibrillation in a cardiology exam implies that this condition is important within the discipline. Likewise, using a simulated clinical encounter for course credit indicates to students that their study should be oriented to clinical skills practice rather than reading textbooks in a library.

Given the importance of assessment in the educational process, it is crucial that EBM is adequately covered in assessments as well as teaching in order for it to be prioritised by learners as an area that warrants time and attention. Given that much EBM learning may take place in a self-directed manner rather than in formal educational programs, motivation through assessment may fortify the development of lifelong learning habits. A survey of practice and variation in EBM undergraduate teaching in UK medical schools showed that whilst the majority of schools teach core EBM topics, relatively few enable students to practice the skills or assess such skills³. Likewise, a survey of US and Canadian medical schools showed major variability in both curricular activities and formal

assessments of EBM topics⁴. Without due emphasis on the assessment process, learners may erroneously feel that EBM is a 'nice to have' rather than fundamental part of their education.

A consensus statement on "core competencies" in EBM has been developed⁵, although there has been controversy about the validity of such a 'competency-based' approach in medicine⁶. There have been instruments developed to assess EBM skills⁷, but without a common understanding of which EBM skills are mandatory, standardized measurement remains a significant challenge. This is in contrast, for example, with the field of clinical communication, where there has been wide agreement on the types of 'tasks' that can be used broadly by those involved in medical teaching and assessment^{8 9}.

Even more fundamental than the issue of assessment though, we argue, is a need for those involved in EBM education to consider the influence of accreditation. Just as 'assessment drives learning', accreditation standards and procedures drive teaching, as medical schools and their faculty must demonstrate continued compliance with accrediting agency policies. Indeed, in the same way that assessments have power over learners by impacting their ability to gain qualifications, certifications, and awards; accreditation has power over educational programmes' ability to be formally approved by regulatory authorities. Foregrounding EBM in education standards could thus be one of the most powerful ways to ensure its prominence in medical curricula.

A brief look at education standards in medicine shows the variability in how EBM content is represented. For example, in the UK, the General Medical Council sets out what newly qualified doctors from all medical schools must know and be able to do¹⁰. Although the 'Clinical research and scholarship' section of this document covers some EBM outcomes, this is the 26th of 26 chapters in the document, and conceptualises these outcomes as distinct topics rather than fundamental principles that apply to the 25 earlier chapters on topics such as patient safety, prescribing,

diagnosis, and communication with patients. Some may argue that EBM teaching is already widespread in the UK and does not need to be prioritized in standards, but others have drawn attention to unintended consequences of removing fundamental concepts from standards, which serve to articulate professional values, not merely serve as a guide to enforcement¹¹.

The World Federation of Medical Education (WFME) has developed standards for use across the globe, which are designed to *“provide a template for medical schools and other providers of medical education, and the agencies which accredit them to define institutional, national and regional standards”*¹². It is noteworthy, therefore, that three standards explicitly mention EBM and its importance (box 1)¹³. Such prominence may indicate that a greater emphasis is needed in EBM education around the world. Yet, despite the inclusion of some EBM concepts, the elements of EBM that relate to patient interactions, including risk communication and shared decision-making are not currently prioritised in WFME standards, and have previously been noted to be poorly integrated into EBM training¹⁴. Without these elements, students trying to learn EBM might be misled into believing that there is a ‘right answer’ to all medical problems without appropriately acknowledging the roles of uncertainty and patient preference inherent in most medical decisions. Further, WFME standards are only currently being applied to medical school accreditation and would not address maintaining and enhancing EBM skills throughout the continuum of a physician’s learning and practice. Without explicit standards for all areas of EBM, integrated throughout educational stages, physicians may be at risk of conforming to the description that Goldacre and Smeeth highlight when talking about modern preventive medicine: *“we are less like doctors and more like a life insurance sales team”*¹⁵.

EBM education has advanced considerably over recent years as its champions have in many parts of the world successfully lobbied for including relevant topics into curricula and its basic requirements into accreditation standards. However, if the next generation of the medical workforce is going to be

highly skilled in all facets of EBM and apply it effectively in their practice, more systemic and fundamental changes may be needed. It is therefore important for the EBM education community to maintain a clear focus on the tasks that the founders of EBM identified as being core areas for all clinicians to master¹⁶ and reinforce them through assessment and regulatory systems. Given their importance to the educational process and their influence on medical education leaders, accreditation standards may be an important area of focus in the years and decades ahead.

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¹ Finkel ML, Brown HA, Gerber LM, Supino PG. Teaching evidence-based medicine to medical students. *Medical teacher*. 2003 Jan 1;25(2):202-4.

² Wylie A, Boursicot K. Assessment drives learning: the case for and against formal health promotion in curricula. *Health promotion in medical education: From rhetoric to action*. 2010:111-7.

³ Meats E, Heneghan C, Crilly M, Glasziou P. Evidence-based medicine teaching in UK medical schools. *Medical teacher*. 2009 Jan 1;31(4):332-7.

⁴ Blanco MA, Capello CF, Dorsch JL, Perry GJ, Zanetti ML. A survey study of evidence-based medicine training in US and Canadian medical schools. *Journal of the Medical Library Association: JMLA*. 2014 Jul;102(3):160.

⁵ Albarqouni L, Hoffmann T, Straus S, Olsen NR, Young T, Ilic D, Shaneyfelt T, Haynes RB, Guyatt G, Glasziou P. Core competencies in evidence-based practice for health professionals: consensus statement based on a systematic review and Delphi survey. *JAMA network open*. 2018 Jun 1;1(2):e180281-.

⁶ Whitehead CR, Kuper A, Hodges B, Ellaway R. Conceptual and practical challenges in the assessment of physician competencies. *Medical teacher*. 2015 Mar 4;37(3):245-51.

⁷ Kumaravel B, Hearn JH, Jahangiri L, Pollard R, Stocker CJ, Nunan D. A systematic review and taxonomy of tools for evaluating evidence-based medicine teaching in medical education. *Systematic Reviews*. 2020 Dec;9:1-2.

⁸ Von Fragstein M, Silverman J, Cushing A, Quilligan S, Salisbury H, Wiskin C, UK Council for Clinical Communication Skills Teaching in Undergraduate Medical Education. UK consensus statement on the content of communication curricula in undergraduate medical education. *Medical education*. 2008 Nov;42(11):1100-7.

⁹ Makoul G. Essential elements of communication in medical encounters: the Kalamazoo consensus statement. *Academic medicine*. 2001 Apr 1;76(4):390-3.

¹⁰ Outcomes for graduates. General medical Council, 2018. Available: https://www.gmc-uk.org/-/media/documents/dc11326-outcomes-for-graduates-2018_pdf-75040796.pdf

¹¹ Whitehead C, Kuper A, Freeman R, Grundland B, Webster F. Compassionate care? A critical discourse analysis of accreditation standards. *Medical education*. 2014 Jun;48(6):632-43.

¹² World Federation of Medical Education <https://wfme.org/standards/bme/>

¹³ World Federation for Medical Education 2015a. Basic medical education WFME global standards for quality improvement <http://wfme.org/standards/bme>

¹⁴ Simons MR, Zurynski Y, Cullis J, Morgan MK, Davidson AS. Does evidence-based medicine training improve doctors' knowledge, practice and patient outcomes? A systematic review of the evidence. *Medical teacher*. 2019 May 4;41(5):532-8.

¹⁵ Goldacre B, Smeeth L. Mass treatment with statins. *BMJ*. 2014 Jul 22;349:g4745.

¹⁶ Guyatt GH, Meade MO, Jaeschke RZ, Cook DJ, Haynes RB. Practitioners of evidence based care: Not all clinicians need to appraise evidence from scratch but all need some skills.

Box 1 WFME Global Standards for Basic Medical Education¹² – Standards relevant to EBM		
Standard	Basic Standards	Quality development Standards
2.2 Scientific method	The medical school must throughout the curriculum teach <ul style="list-style-type: none"> - the principles of scientific method, including analytical and critical thinking - medical research methods - evidence-based medicine 	The medical school should in the curriculum include elements of original or advanced research
2.3 Clinical sciences and skills	The medical school must <ul style="list-style-type: none"> • in the curriculum identify and incorporate the contributions of the clinical sciences to ensure that students <ul style="list-style-type: none"> - acquire sufficient knowledge and clinical and professional skills to assume appropriate responsibility after graduation - spend a reasonable part of the programme in planned contact with patients in relevant clinical settings - experience health promotion and preventive medicine • specify the amount of time spent in training in major clinical disciplines • organise clinical training with appropriate attention to patient safety 	The medical school should <ul style="list-style-type: none"> • in the curriculum adjust and modify the contributions of the clinical sciences to the <ul style="list-style-type: none"> - scientific, technological and clinical developments - current and anticipated needs of the society and the health care system • ensure that every student has early patient contact gradually including participation in patient care • structure the different components of clinical skills training according to the stage of the study programme
6.4 Medical research and scholarship	The medical school must	The medical school should <ul style="list-style-type: none"> • ensure that interaction between medical research and education

	<ul style="list-style-type: none">• use medical research and scholarship as a basis for the educational curriculum• formulate and implement a policy that fosters the relationship between medical research and education• describe the research facilities and priorities at the institution	<ul style="list-style-type: none">- influences current teaching- encourages and prepares students to engage in medical research and development
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