Author's response to reviews

Title: A clinically integrated Curriculum in Evidence-based Medicine for just-in-time learning through on-the-job training: The EU-EBM project.

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Author's response to reviews: see over
To the editor of BMC Medical Education

17 September 2007

Dear editor,

We herewith resubmit our manuscript 1526580991433066 named “A clinically integrated Curriculum in Evidence-based Medicine for just-in-time learning through on-the-job training: The EU-EBM project.”

We appreciate the valuable comments of the reviewers and have addressed all comments and suggestions in a revised manuscript. Attached to this cover letter is a point by point response.

We feel the comments have substantially contributed to the readability and quality of the paper, and hope this revised manuscript is now suitable for publication in BMC Medical Education. We are looking forward to your decision.

Yours sincerely,

On behalf of all co-authors,

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Reviewer 2, Heiner Raspe

Minor essential revisions:

The focus of the work is clearly on evidence-based clinical medicine, not health care and any mixing of the two perspectives should be avoided (e.g. p13, line 26)

Indeed, our work focuses mainly on evidence-based clinical medicine. The nomenclature on the subject varies however and the terms EBM or evidence based-medicine, EBH or evidence-based healthcare and EPB or evidence-based practice are used variously to mean something very similar depending on the context, namely:

Evidence-based medicine (EBM)
- The conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients (Sackett et al, 1996)

Evidence-based practice
- An approach to health care wherein health professionals use the best evidence possible, i.e. the most appropriate information available, to make clinical decisions for individual patients (McKibbon, 1998)

Evidence-based healthcare
- Extension of the application of the principles of EBM to all professions associated with health care, including purchasing and management (Centre for Evidence Based Medicine, 2000)

In our paper we predominantly used the term EBM, but in some phrases expanded the concept of EBM into daily clinical practice or healthcare. We did however mean the same thing when we used different wordings, i.e.

1) “An approach to health care that promotes the collection, interpretation, and integration of valid, important and applicable patient reported, clinician observed, and research derived evidence. The best available evidence, moderated by patient circumstances and preferences, is applied to improve the quality of clinical judgements” (McKibbon 1998)

2) “The process of systematically finding, appraising, and using contemporaneous research findings as the basis for clinical decisions. It follows four steps: formulate a clear clinical question from a patient’s problem; search the literature for relevant clinical articles; evaluate (critically appraise) the evidence for its validity and usefulness; implement useful findings in clinical practice” (Rosenberg and Donald, 1995).

Nevertheless, we fully agree with this reviewer that our curriculum is focussed on health care professionals involved in patient care. We therefore picked up his suggestions and have made
“PICO” may be too narrow a concept. Sackett added a “T” for time of measurements (Clinical Epidemiology, 3rd edition, p70) and P could be divided into person and his/her illness.

We acknowledge the existence of many types of structured questions, with corresponding formats on how to phrase the clinical question (e.g. 3 part (patient-intervention-outcome (AMA 2002), 4 part (patient-exposure-control-outcome (Richardson 1995), or 5 part (patient-intervention/exposure-comparator-outcome-time) (Haynes 2006). We feel that PICO is a general and currently well-accepted tool for framing clinical questions. As our pilot course has been developed around therapeutic questions, tuned to basic EBM teaching, we would like to retain to the use of PICO, instead of more complex concepts. Learners with a stronger interest in evidence-based health care can easily build on this simple concept. We have added these considerations now in the revised manuscript on page 8 lines 7-8.

In the last years it has become clear that the evaluation of effectiveness must, at least when “net benefit” is considered, incorporate evidence from sources other than RCT’s, e.g. non-interventional studies to assess burden and risks.

We fully agree with the reviewer. In fact, these considerations of the reviewer are covered and explained to the learner in Module 4 of our EU-EBM course, where we teach that RCT’s do not always provide all information necessary to assess risks and burden, and that one probably has to look for high quality non-randomised prognostic cohort studies as well. The content of this module can be viewed, if you wish, by entering the website (www.ebm-unity.org) -> courses -> login as a guest (password ebm_s06) -> ebm unity e-sessions -> module 4. We have made no revisions in the manuscript.

Discretionary revisions:

Will the access to all material be free? If not, what will be the conditions of use?

Our group has absolutely intended from the beginning that access to the course and course materials should be freely available to non-commercial / not-for-profit interested parties, as the project has been publicly funded by the European Union. We are currently drafting the conditions of use to prevent misuse (i.e. use of learning materials that were intended to be a free resource on a profit basis later). We have therefore made no revisions in the manuscript.

Reviewer 3. Fredric M Wolf

Major compulsory revisions:

In its current form, the paper provides insufficient detail regarding the innovative aspects of the curriculum, namely the learning/teaching methods that are referenced in Table 1, but are not described in any detail in the text. The information that is provided in more detail, e.g., the learning
objectives, the 5 modules/curricular content, and the assessment plan are similar to what is currently being done in many settings and is not particularly new or innovative. Details of the innovative aspects of the curriculum (namely the clinical setting, independent e-learning and one-to-one interaction with a tutor based on performed activities and assignments) are now covered in more detail on page 8, line 3 to 7; page 9, line 15 to page 10, line 20 and in figure 2 (screenshot of the e-learning platform) with explaining legend.

We would like to point out though, that we searched extensively as part of preparation of our grant application to seek for types of EBM courses available. Our discussion with participating experts has shown that clinically integrated teaching of EBM is currently not provided in Europe, which has also been confirmed by our scientific steering committee. To our knowledge, existing courses do not have a comparable format with continuous repetitive learning over a longer period, which includes small activities and individualised assignments to acquire skills and to deepen knowledge, standardised assessments at the end of each module and special emphasis on implementation of evidence in clinical practice. We are, however, interested if the reviewer could point out to us such courses in Europe that we might have missed in our assessment of the current provision.

Furthermore, one of the main innovations here is to get European countries work together in order to harmonize an integrated teaching of EBM, which has not been subject of any harmonization effort before.

As recently shown by Shaneyfelt et.al. (JAMA 2006; 296(9):1116-1127), there is a huge variety in instruments for evaluation of EBM teaching, with a lack of properly validated evaluation instruments. Our assessment is quite robust, as it is carefully developed matching questions to learning objectives. Most questions have been based on the validated Berlin (Frische et al., 2002) and Taylor et al questionnaires (Taylor et al., 2001). Our assessment goes beyond just knowledge and skills, and includes attitudes of learners also. As we do not measure behavioural changes we have added a statement on this in the discussion section, page 14, lines 20-23.

The section “Organization of the content and teaching methods” (p9) needs considerable amplification. Providing some examples would be very useful.

- What does the e-learning platform and module look like?
- What are some of the “minor activities where learners perform practical tasks”?
- What are examples of some of the assignments handed in to facilitators?

The section this reviewer is referring to has been rewritten (pages 9 to 10). Examples of the e-learning modules, activities and assignments have been added. A screenshot of one of the e-learning modules with explaining legend is now provided in figure 2.

The authors state “The educational strategy is summarized in figure 2”. (p.10). This figure references the SPICES model, but no detail of this is provided in the text. Examples of how the EU program implements elements of this model would be very informative.
We have rewritten the paragraph on the educational strategy of the course. Some examples of how our course implements elements of the SPICES model can now be found on page 10, line 23 to page 26 and page 11, line 3 and lines 7 to 10. Figure 2 the reviewer is referring to has become figure 3 in the revised manuscript.

**Minor essential revisions**

*It is stated that “An improvement on each of these four domains can best be achieved … “ (pp.5-6) but only three are mentioned: skills, attitudes, and behaviour (p.5). Do you mean to include “knowledge” as the fourth?*

The first of the four EBM domains (knowledge) is listed on page 5, line 27: “For successful implementation in practice, EBM knowledge would need to result in skills, attitudes and appropriate changes in behaviour”. We apologise for causing this misunderstanding.

*The results of the needs assessment survey will be reported elsewhere (p.7), but it would be helpful to provide a brief overview of the main findings while presenting details elsewhere.*

We have not yet carried out the analysis of the data in our survey, as we had some technical problems with the pooling of some of the national survey data. In order to define the educational goals for the project, we held an in-depth discussion among the experts who exchanged the current situation in their countries, together with input from the external steering committee. We tried to identify “universal” goals that should be met by all residents across Europe, independent of the country and the specific setting they are working in.

The phrase Dr. Wolf is referring to has been revised on page 7 lines 20 to 22.

*The Slawson and Shaughnessy paper was published in 2005, not 2006 as listed.*

This has been corrected in the reference list.

**Discretionary revisions**

*The curriculum assessment concerns evaluation of participants’ knowledge, skills, and attitudes” (p10). Is there a plan to measure behaviour change? If not, this could be referenced as a future need in the discussion section.*

The current assessment strategy indeed does not measure behavioural changes. We have added a statement in the discussion section (page 14, lines 22-25) as requested by the reviewer.

*In the abstract it is suggested to replace “is able to” by “is designed to” since this has not yet been shown. If it has been shown, it is not presented in this report nor referenced elsewhere.*

We agree with the reviewer, as the course is currently under evaluation. We have rephrased this sentence on page 4, line 3.
The reviewer asks whether it is better to say “The goal of the curriculum IS [rather than WAS] to develop … “ (p.6) since this goal is ongoing. We agree with the reviewer and have changed this on page 6 line 20)

End of reply.
References belonging to reply:


