Author's response to reviews

Title: Teaching trainers to incorporate evidence-based medicine (EBM) teaching in clinical practice: the EU-EBM project.

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Author's response to reviews: see over
Reviewer's report
Title: Teaching trainers to incorporate evidence-based medicine (EBM) teaching in clinical practice: the EU-EBM project.
Reviewer: Jo L Dorsch
Reviewer's report:

I applaud the wide-reaching impact that the work these authors are doing will have on promoting EBM education. However, some revisions are required.

Major Compulsory Revisions
1) I feel that this paper does not substantially add to the information presented in the authors' Nov. 2007 publication, "A clinically integrated curriculum in EBM for just-in-time learning through on-the-job training: the EU-EBM project." Although I realize that additional modules have been added since the 2007 report, the background, rationale, and processes are the same and therefore redundant in this paper. In fact, the details that I was seeking as I read the current submission, I found in the 2007 paper.

We have acknowledged this comment and have since rewritten the abstract, methods and results section with focus on the difference in participants in the current project who are clinical teachers of EBM compared to the first project that targeted the trainees.

2) The authors speak of the course in the past tense. For example, in the Aims, objective and learning outcomes section, they say, "The course had a large e-learning component..." If the course has already been offered, this manuscript could be strengthened by adding some data. How many have participated? How many modules have been completed? Which modules appeal to the most physicians? What are the results of the self-assessment to date? 3) At times I was confused about which course the authors speaking -- the one described in the current study or the postgraduate course described in their April 2008 BMC paper.

The course has been piloted in 5 countries involving 60 teachers. The details are now provided in the revised manuscript. We have initial data that show that there is a significant improvement in post course scores (p<0.005). The findings of the pilot will be published as a separate paper.

4) The Discussion defines the CRISIS criteria, but the authors don't provide analysis of how these criteria were applied to their modules except in very broad generalities. The authors also state that since adult learning principles were used, this course "will contribute to their professional development and will improve their educational environment." Until some assessment is done, this statement probably can't be substantiated.

Please see above response
5) There are several word omissions, punctuation errors, and grammatical mistakes that can be easily corrected.

*These have now been rectified.*
Reviewer: Peter Wyer
Reviewer's report:
1- Major Compulsory Revisions (which the author must respond to before a
decision on publication can be reached) This is the latest report of an ongoing project in
EBM education which entails a multiplicity of novel features. Notable among these are
the multi-national context, the support of corresponding agencies and stakeholders
involved with medical education in the European Union countries and the use of e-
learning tools as a mainstay of the approach. Previous reports, cited by the authors,
outline the development of the curriculum, including a set of learning modules, the
development of the e-learning modules and some preliminary field testing of these
materials. I find the current report hard to follow in several respects. It took me quite
some time to figure out what amidst that which is being presented here goes beyond the
prior publications, and neither the abstract nor the body of the text served as my friends
in this effort.

We have acknowledged this comment and have since re written the abstract, methods and
results section with focus on the difference in participants in the current project who are
clinical teachers of EBM compared to the first project that targeted the trainees.

2 The new element in the current manuscript appears to be the identification of specific
candidate teaching-learning venues within which the curriculum and the e-learning tools
could be adapted to enhance focused learning objectives particularly appropriate to those
venues.

This Training the Trainers project differs from the first project in its target audience
(teachers Vs trainees) and curricular content (teaching methods Vs EBM knowledge). We
have tried to show this contrast in our revised version.

3 I also gather that this proposed allocation of the elements of the curricular design and
corresponding materials is itself yet to be field tested.

The course has been piloted in 5 countries involving 60 teachers. The details are now
provided in the revised manuscript. We have initial data that show that there is a
significant improvement in post course scores (p<0.005). The findings of the pilot will be
published as a separate paper.

4 The concept of allocating different aspects of an EBM skill-based curriculum to
different clinical teaching venues is not, in itself, original to this project; such a concept
has been elaborated elsewhere in ways quite analogous to the approach being described
here. (1,2) What is new here, therefore, is the specific application of e-learning tools in
connection with differentiated learning goals in these contexts in a fashion that traverses
multiple settings across multiple countries and health systems. I believe that the latter
needs to be made the central focus of this report and that the redundant descriptions of the
overall curriculum and the development of the e-learning tools be referred back to the prior reports. Whether this new aspect of the project is in fact sufficiently developed to justify an additional report at this time is unclear to this reviewer. Perhaps a more detailed description of the process of developing a multi-national application of a single curricular design might make the difference.

We have elaborated on this suggestion as follows “The clinical setting was described taking into account the variation in practice and settings between healthcare systems in different countries. Where appropriate we have provided guidance for adaptation of the teaching methods according to the existing resources and opportunities.”

5 Again, and in summary, this report pertains to a project that is unchallengeably unique and reportable. What is in question in this reviewer’s mind is whether this particular manuscript stands on its own feet at this stage in the development of the overall project.

We hope the improvements made in the manuscript with added details on the systematic review of assessment tools for Teaching the Teachers in EBM, our development of validated assessment tools, report on piloting have strengthened the paper considerably to enable acceptance for publication.


- Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The following detailed comments identify specific places in the text in which clarifications may serve to achieve what is otherwise being called for as “necessary change” in the overall manuscript.

1 P2. Abstract: Methods: I believe this paragraph is misleading. I suggest that you consider language such as: “We adapted a previously developed e-learning CPD course for the purpose of interjecting integrating focused EBM teaching into various clinical settings.” The wording of the next to last sentence in this paragraph is very confusing. Please replace the phrase “…teachers of EBM to learn in the workplace…” with language the conveys the true focus of your effort. Who were the ‘teachers’ and who were the ‘learners’ in this project? The issue of well defined learner developmental level
is fundamental in an education research report and it is not clearly and consistently articulated in this manuscript.

The abstract has now been revised as follows “We devised an e-learning course targeting trainers with EBM knowledge to impart educational methods needed to teach application of EBM teaching in commonly used clinical settings. The curriculum development group comprised experienced EBM teachers, clinical epidemiologists, clinicians and educationalists from institutions in seven European countries. The e-learning sessions were designed to allow participants (teachers) to undertake the course in the workplace during short breaks within clinical activities.”

2 P. 4, Par 1, L. 1: This is a very hyperbolic way of introducing a report of this nature. It sends a message: “If you are not a true believer, read no further.” I suggest starting with a statement pertaining to the challenges facing EBM as we know it from the standpoint of integration into the fabric of teaching and practice of medicine.

The introduction is modified as follows “Evidence-based medicine (EBM) is considered to be the most ethical way to practice medicine as it integrates research into clinical practice. It has evolved into a powerful tool for well informed decision-making within the clinician’s daily practice. The challenge is to teach it practically in a clinical setting. Unless trainees practice EBM in everyday clinical work and observe their teachers practice EBM it will be difficult for EBM to achieve the status of core competency in medicine.”

3 P. 4, Par 2, Sentence 4-5: This is poorly worded and framed. “CPD courses” calls up images of EBM in what is called “continuing medical education” in the US and pertains to practicing clinicians, i.e. education of such practitioners for their own needs. However, the second of these sentences implies that your real target is clinical teachers, not just practitioners. These imply very different learner targets and goals. This reviewer is in fact not at all clear what the true target learner population of your effort is. This needs to be clearly stated and described consistently throughout the manuscript.

We have been consistent in naming our target as clinical teachers in this version.

4 P. 5, Par. 2: For a reader who has not read the prior reports of this project this looks like a vast and sweeping undertaking. As a paragraph in the “methods” section of a study report, this description is much to vague and undifferentiated. The reader would be much more engaged if this multinational process, and the way it informed the development of your curricular allocations, were articulated in some detail. Are the venues you are describing uniformly structured and defined across all of the participating EU countries? Are they uniformly so in both teaching and non-teaching facilities? Readers outside the EU will find the context in which you are operating entirely foreign. Much of your
The methodology has been developed in conjunction with this unique context and will need to be elaborated for your report to speak effectively to a wider audience.

We have elaborated on the output in the results section as it was the first step in curriculum development.

“To begin with we identified specific educational opportunities in various clinical settings that can be exploited by trainers to teach application of EBM. We took into account the variation in clinical settings and teaching opportunities in different countries along with the variation in the level of EBM knowledge amongst the trainers and trainees. This was done by an in-depth discussion among the project partners who had a good overview of the ongoing activities in their countries, with input from the external steering committee. We performed a survey to identify the commonly perceived obstacles for teaching EBM in clinical practice. The feedback from trainers in our earlier work showed that there was a considerable demand for up-skilling trainers.11 The above process helped to define feasible educational goals for the documented learning needs of clinical trainers.”

5 P. 6, Par. 2, Sentence 1: This appears to clearly identify your target audience as “clinical teachers”, presumably faculty members in accredited teaching programs. Earlier, and in your abstract and introduction, you identify the uniqueness of your curriculum as being aimed at the CPD consumer. In North America, for example, the latter constituency is largely identified with working, NON-academic, practitioners, generally practicing in non-academic, non-teaching, settings. Once more, standard EBM workshops and curricula to date have been directed at clinical teachers, and not as much at working practitioners. You need to clarify the nature of your target learner constituency in a way that will allow readers outside of the EU to understand the nature of your initiative and how it relates to ‘traditional’ EBM teaching targets and venues.

Most of the existing courses for training the trainers are in the format of standard EBM workshops. Our e-course has been developed to help teachers develop the confidence and skills to teach and demonstrate EBM practice in both formal and informal clinical settings. We have now clarified that the courses are aimed at clinical teachers.

6 A second point on this same section of your manuscript: “Aims, objectives and learning outcomes” generally suggests material that one would expect to find in a “Methods” section, not in a “Results” section. The content of this section therefore appears incongruous as part of the methods section of your manuscript. Please rethink this and reorganize and/or clarify your presentation accordingly.

The subheading has been changed to “Formulation of objectives and learning outcomes of teaching the EBM trainers course”
7 P. 7, Par. 2: This is where this reviewer perceives the “results” of your effort to begin to emerge. However, as noted previously in this review, these settings (with some exceptions such as “Audit” which needs to be explained to readers not part of the EU community) as venues for customized approaches to integrated EBM teaching have been previously identified in mainstream EBM literature. Please consider carefully how the identification of these settings constitutes reportable ‘results’ of an original education research endeavor.

*We have provided definitions of the 6 clinical settings. The aim of the curriculum development process was identification of clinical settings where EBM can be taught by teachers. The identified settings have therefore been reported under the results section.*

8 P. 9, Par 3: The choice of terminology describing your target audience is confusing here. You alternate between the term “participant” and “learner” in a way that is very confusing to the reader.

*We have consistent in naming our target as participant in this version.*

9 P. 10, Par. 2: This one sentence paragraph is ungrammatical. The syntax needs to be corrected. It would also seem salient to suggest that you begin this section with a summary of the goals and objectives of the ENTIRE project and then immediately succinctly summarize the state of the project as reported in your previous 2 articles in BMC Educ and then, finally, summarize the contribution being uniquely reported in this manuscript.

*This is revised as follows “Through this EU project we have established an e-learning course targeting EBM teachers with emphasis on its piloting and promotion across the European healthcare sector and beyond.”*

10 P. 10, Par. 2 and following: there needs to be a limitations paragraph in this report. High on the list of acknowledged limitations should be the fact, assuming the correctness of my interpretation of this and the prior reports, that the specific, ‘venue-tailored’, use of the e-learning modules in the targeted settings you have identified is yet to be field tested. The ultimate value of your project will, of course, rest or fall upon such testing.

*We have now added a paragraph on limitations of the curriculum. Page 13 line 2*