Reviewer's report

Title: Effective In-Service Training Design and Delivery: Evidence from an Integrative Review of the Literature

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Reviewer: Lesley-Anne Long

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Review
Effective In-Service Training Design and Delivery: Evidence from an Integrative Literature Review

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No major compulsory revisions

Minor essential revisions
Table 6: the text for ‘Study Design’, ‘Participants’ and ‘Intervention’ for Marinopoulos, S. et al. is identical to the text (same table) for O’Neil K. et al – is this correct?

Discretionary revisions

It is not immediately clear what the balance is between articles reviewing CEP in urban/developed settings as opposed to CEP delivered in rural and poorly-resourced settings. Given the current policy and donor focus on the need to provide effective in-service training for community health workers, it would be useful to know whether there is evidence in the data that techniques recommended for higher level cadres would also work for less qualified health workers, particularly those based in rural communities where infrastructure is poor and access to mobile and computer technology constrained.

In the final paragraph of ‘Conclusions’ in the Abstract the authors state that CPE can lead to improved learning outcomes and clinical practice behaviors if effective techniques are used. However this appears to be contradicted in the final paragraph of ‘Discussion’ which suggests that ‘there are very limited and weak data that directly link CPE to improved clinical practice outcomes [and] there are also limited data that link CPE to improved clinical practice behaviors’. Some clarification on this point would therefore be helpful.

General comment
This a very timely article, given the increased focus on the need to provide effective continuing professional education (CPE) for health workers in developing regions. The challenges of providing quality and equitable health care, especially to vast rural populations, are well known. Deprived of
opportunities for continuing education and professional development, and against a backdrop of poor pay and increasing workloads, evidence indicates that significant numbers of health workers migrate to a better quality of life in the private sector, with NGOs or in developed countries. Governments, training institutions and health educators are all seeking more effective ways of retaining health care workers and of providing quality CPE for them.

This article is written in a clear and accessible way and appropriate for the likely audience – e.g. training institutions, health educators, practitioners and policy makers. Of the 69 articles reviewed by the authors, 37 were of systematic reviews which themselves collectively considered hundreds of studies relating to CPE. The articles selected therefore provided a wealth of data and evidence from which the authors were able to draw their conclusions. The supporting details included in Tables 2-6 provide useful signposts for training institutions and health educators wanting to understand better the methods of delivering effective CPE.

The authors highlight evidence that suggests current training remains largely focused on print-based and classroom teaching and that this is not enough to keep up with professional training needs. In fact, the data indicates that techniques that rely on a passive transfer of information, such as lectures and reading should be avoided; instead, case studies, simulation and other interactive strategies should be used to promote effective learning outcomes. There is evidence that self-directed learning has merit as a learning methodology but should be combined with interactive techniques that engage the learner. Evidence also supports repetitive exposure to targeted training to reinforce important messages.

The authors outline a number of areas where data is limited or weak; in particular lack of well-constructed evaluations from low- and middle-income countries. Another possible limitation, not referred to, is that the studies reviewed appear largely to relate to CPE for medical practitioners, nurses and midwives. In addition it is also not immediately clear what the balance is between articles reviewing CEP in urban/developed settings as opposed to CEP delivered in rural and poorly-resourced settings. Given the current policy and donor focus on the need to provide effective in-service training for community health workers, it would be useful to know whether there is evidence that techniques recommended for higher level cadres would also work for less qualified health workers, particularly those based in rural communities where infrastructure is poor and access to mobile and computer technology constrained. That said, the authors suggest that there is sufficient evidence to pursue the combinations of training techniques, timing, settings and media outlined in the ‘Discussion’. Further, they acknowledge in the ‘Conclusions’ section that ‘all strategies must be appropriate for low-resource settings and address common constraints [such as] remote worksites, and limited access to and experience with technology’ and go on to recommend further research is undertaken.

In both the ‘Discussion’ and ‘Conclusion’ sections, the authors helpfully highlight a number of areas where “the public health community must increase its
investment in studying various dimensions”. I suggest such future research should include an investigation of effective CPE for community/health extension workers in rural settings. The role of tutors and facilitators, and the importance of government policy supporting effective CPE as part of a strategic approach to human resource development also bear closer examination. The potential of mobile technology to support effective CPE in rural and remote areas is a further subject in need of robust evaluation.

The article provides important information for a health sector that is focussed more than ever on the need to provide meaningful CPE for health workers. Drawing on the evidence, the authors signal clearly that a blended approach, using multiple media, and situating the learning to make the experience as similar to the work-place, is likely to impact positively on knowledge outcomes. Despite some limitations in the data, referred to by the authors, this article is to be welcomed for its comprehensive review of the literature, the clarity with which it sets out the findings and the practical recommendations it offers for educators and policy makers designing CPE programmes for health professionals.

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Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
No competing interests