PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Global health competencies in UK postgraduate medical training: A scoping review and curricular content analysis
AUTHORS	Al-Shakarchi, Nader; Obolensky, Lucy; Walpole, Sarah; Hemingway, Harry; Banerjee, Amitava

VERSION 1 - REVIEW

REVIEWER	James Hudspeth Boston University, USA
REVIEW RETURNED	29-Nov-2018

GENERAL COMMENTS	The authors identify an important topic - the amount of global health covered in present UK post-graduate curriculum - addressing this via a two-part process of deriving a framework of global health competencies, and then evaluating all of the published post-graduate curriculum for the presence or absence of these competencies. The second part of the study, the curricular review, is a commendable task that provides some insight into how GH education occurs (or doesn't) within the UK post-graduate system presently. The derivation of the list of competencies in the first part unfortunately is weaker, and consequently undermines the paper as a whole. Recommendations: 1 - narrow the number of competencies in the framework, or picking one competency set to work from Presently the number of GH competencies in their generated framework is quite high, and the process of arriving at them is somewhat opaque (only a paragraph referring to consensus amongst the group). The citations found have variable populations deriving their competencies, with some largely aimed at post-graduate trainees with a robust GH interest (eg Tupesis, Wroe) over the general post-graduate physician that constitutes the majority of the UK population (targeted by Walpole). I would argue the arrival at a definitive set of global health competencies that warrants integration into general post-graduate medical education is a large task that is given small space here, and that a mixing pot approach from several papers to arrive at a composite framework does not yield as useful a set of competencies. The authors should either expand their approach to developing their framework, break off this portion of the paper into a second paper, or (my preference) adapt one of the several frameworks they reference and use this to filter the curricula they target over developing their

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	own. They might also consider the Consortium of University for Global Health competency set, discussed in Jogerst 2015 "Identifying Interprofessional Global Health Competencies for 21st-Century Health Professionals," which has explicit competencies for general health care practitioners vs those specializing in global health. 2 – Make explicit what the desired goal is The present set of 16 global health competencies as a de facto gold standard sets all of the evaluated curriculum up to fail, and indeed, the fact that none achieve even 50% of the competencies suggests that the standard being presented does not fit well with what can reasonably be asked. While it may well be that through a GH lens the UK post-graduate education system fails to produce competent providers at GH skills, I worry that this lens does not necessarily fit the health needs of the UK population served, to use the terminology the Frenk article cited. The authors suggest as next steps more work with curriculum developers to find what they wish to incorporate into their curricula while concurrently arguing the importance of incorporating global health into curricula. I support their claim that some level of global health competency is needed for most UK physicians, and would suggest that they should make clear that this is an explicit goal of theirs, while concurrently narrowing their scope to provide a more conservative and therefore more powerful claim. Demonstrating to the wider UK medical education community that no curriculum has the 16 competencies will likely elicit little consideration for change – too many of the competencies listed are not demonstrably pertinent to domestic UK practice, and the project quickly falls into the "informative education" bucket discussed in the Frenk article. Arriving at a narrower framework with more intuitive appeal to the educators they seek to sway will lead to more substantive conversation and, hopefully, change. 3 – Clarify what the competencies are After narrowing the number of competencies, I would also explain what is meant by each one via at least a sentence description; this will make it easier to see how the referenced curricula do or do not contain them, and will also make it clearer why most to all UK physicians might reasonably be asked to have a given competency.

REVIEWER	Ming-Ka Chan University of Manitoba, Canada
REVIEW RETURNED	10-Dec-2018

GENERAL COMMENTS	Thank you for the opportunity to review this work. There was obviously an immense amount of work done. This work is important and does add to the literature. I interpret the work done as follows: 1) scoping review of the existing literature 2) developing a list of proposed core competencies (topics) 3) mapping existing post grad curricula in the Uk to these competencies. At times the paper seems to speaking to different objectives to the above from abstract all the way through to the body of the document. There is lingo that is UK specific e.g run-through that needs to be explained for a more generic audience and acronyms

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	need to be spelled out or explained (e.g. CCT). There are some fundamental things that I have inquired about like why have you only used pubmed in your scoping review for example. There are also some minor things like # of competencies in one table is only 15 and names of the competencies vary from table to graph. These can be easily corrected. I would be interested in knowing your backgrounds to better understand your foundation in completing this scholarly work. That might be helpful in your strengths and limitations section. I enclose comments in the document attached. I tried to highlight where possible. The following paper, 'Educating the public health workforce' may have some interesting perspective for you to consider as well and may be useful as you edit your paper. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5826052/ I hope that these comments are useful to you. I look forward to reading the next version of this manuscript. The reviewer provided a marked copy with additional comments. Please contact the publisher for full details.

VERSION 1 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

Reviewer Name: James Hudspeth

Institution and Country: Boston University, USA

Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below

The authors identify an important topic - the amount of global health covered in present UK post-graduate curriculum - addressing this via a two-part process of deriving a framework of global health competencies, and then evaluating all of the published post-graduate curriculum for the presence or absence of these competencies. The second part of the study, the curricular review, is a commendable task that provides some insight into how GH education occurs (or doesn't) within the UK post-graduate system presently. The derivation of the list of competencies in the first part unfortunately is weaker, and consequently undermines the paper as a whole.

Recommendations:

1 - narrow the number of competencies in the framework, or picking one competency set to work from

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Presently the number of GH competencies in their generated framework is quite high, and the process of arriving at them is somewhat opaque (only a paragraph referring to consensus amongst the group). The citations found have variable populations deriving their competencies, with some largely aimed at post-graduate trainees with a robust GH interest (eg Tupesis, Wroe) over the general post-graduate physician that constitutes the majority of the UK population (targeted by Walpole). I would argue the arrival at a definitive set of global health competencies that warrants integration into general post-graduate medical education is a large task that is given small space here, and that a mixing pot approach from several papers to arrive at a composite framework does not yield as useful a set of competencies. The authors should either expand their approach to developing their framework, break off this portion of the paper into a second paper, or (my preference) adapt one of the several frameworks they reference and use this to filter the curricula they target over developing their own. They might also consider the Consortium of University for Global Health competency set, discussed in Jogerst 2015 "Identifying Interprofessional Global Health Competencies for 21st-Century Health Professionals," which has explicit competencies for general health care practitioners vs those specializing in global health.

Many thanks for this very helpful suggestion. As suggested, we have used the Walpole framework of 5 competencies in the revised manuscript, since it was developed for the UK context. We did not use the Jogerst 2015 competency set because it was not UK-specific. However, we decided that there is value in also keeping our more extensive list of competencies for comparison and have also added detail to the section regarding our methods for clarity. We did not think that there was any benefit (or sufficient material) to warrant a second manuscript.

2 – Make explicit what the desired goal is

The present set of 16 global health competencies as a de facto gold standard sets all of the evaluated curriculum up to fail, and indeed, the fact that none achieve even 50% of the competencies suggests that the standard being presented does not fit well with what can reasonably be asked. While it may well be that through a GH lens the UK post-graduate education system fails to produce competent providers at GH skills, I worry that this lens does not necessarily fit the health needs of the UK population served, to use the terminology the Frenk article cited. The authors suggest as next steps more work with curriculum developers to find what they wish to incorporate into their curricula while concurrently arguing the importance of incorporating global health into curricula. I support their claim that some level of global health competency is needed for most UK physicians, and would suggest that they should make clear that this is an explicit goal of theirs, while concurrently narrowing their scope to provide a more conservative and therefore more powerful claim. Demonstrating to the wider UK medical education community that no curriculum has the 16 competencies will likely elicit little consideration for change – too many of the competencies listed are not demonstrably pertinent to domestic UK practice, and the project quickly falls into the "informative education" bucket discussed in the Frenk article. Arriving at a narrower framework with more intuitive appeal to the educators they seek to sway will lead to more substantive conversation and, hopefully, change.

This is a very instructive comment which we have used to improve our revised manuscript greatly. First, we have used a more restricted UK-relevant framework (Walpole et al) as detailed in the previous point. Second, we have added to the aims and the discussion, as suggested to better reflect the purpose and the implications of our research.

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As recommended, we have also stated a fourth aim in our introduction in the revised manuscript:

"(iv) suggested ways to move towards global health competencies for all UK postgraduate doctors."

3 – Clarify what the competencies are

After narrowing the number of competencies, I would also explain what is meant by each one via at least a sentence description; this will make it easier to see how the referenced curricula do or do not contain them, and will also make it clearer why most to all UK physicians might reasonably be asked to have a given competency.

We have now added a sentence in the table of competencies to explain the scope of each one.

Reviewer: 2 ***Please see the attached pdf for a further set of comments from this reviewer***

Reviewer Name: Ming-Ka Chan

Institution and Country: University of Manitoba, Canada

Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below

Thank you for the opportunity to review this work. There was obviously an immense amount of work done. This work is important and does add to the literature. I interpret the work done as follows:

1) scoping review of the existing literature

2) developing a list of proposed core competencies (topics)

3) mapping existing post grad curricula in the Uk to these competencies.

At times the paper seems to speaking to different objectives to the above from abstract all the way through to the body of the document. There is lingo that is UK specific e.g run-through that needs to be explained for a more generic audience and acronyms need to be spelled out or explained (e.g. CCT). There are some fundamental things that I have inquired about like why have you only used pubmed in your scoping review for example. There are also some minor things like # of competencies in one table is only 15 and names of the competencies vary from table to graph. These can be easily corrected.

Apologies for the inconvenience. We have now spelled out any terminology which may be new to the non-UK readership. We have corrected the other issues in the revised manuscript and have answered specific queries in the attached PDF document.

I would be interested in knowing your backgrounds to better understand your foundation in completing this scholarly work. That might be helpful in your strengths and limitations section.

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Thanks for this suggestion. However, we did not feel that our backgrounds should be written in the manuscript itself as thee details do not easily fit under any particular heading or as part of an argument.

Nader Al-Shakarchi is a 4th year medical student at University College London with interest in global heath.

Dr Lucy Obolensky is an obstetrician with special interest in global health training.

Sarah Walpole is a tropical medicine trainee with long-standing interest in global health training and capacity-building.

Professor Harry Hemingway is Professor of Epidemiology at University College London and Director of the Institute of Health Informatics. He has a long-standing interest in public health training and also data science training.

Dr Amitava Banerjee is Associate Professor in Clinical Data Science and Honorary Consultant Cardiologist at University College London. He has a long-standing interest in global health training.

I enclose comments in the document attached. I tried to highlight where possible.

Thank you. We have answered your comments in the PDF file for ease but have made the required changes in the revised manuscript.

The following paper, 'Educating the public health workforce' may have some interesting perspective for you to consider as well and may be useful as you edit your paper.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5826052/

Thank you-this is indeed very helpful and we have used this article to inform our revisions in our new manuscript.

I hope that these comments are useful to you. I look forward to reading the next version of this manuscript.

The author provided a marked copy with additional comments. Please contact the publisher for full details.

VERSION 2 – REVIEW

REVIEWER	James Hudspeth Boston University, USA
REVIEW RETURNED	22-Mar-2019

GENERAL COMMENTS	The authors have done a commendable job of improving their manuscript, tightening up both argumentation and the flow. I have

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	some concerns that the "health informatics" competency was added outside of the overall framework and perhaps does not warrant inclusion in the list of 16. Attached is a file with further comments on some specific areas, including a few typos and a reference that is absent. The reviewer provided a marked copy with additional comments. Please contact the publisher for full details.

REVIEWER	Ming-Ka Chan University of Manitoba, Canada
REVIEW RETURNED	21-Mar-2019

GENERAL COMMENTS	Thank you for submitting this revised manuscript. I think you have addressed the concerns from the previous review. I like the addition of the Walpole list. Your explanations were helpful. I am still not familiar with the term 'grade physician'. Otherwise, there were a couple of spacing issues or missing quotes which I added to the attached document. See attached file. The reviewer provided a marked copy with additional comments. Please contact the publisher for full details.

VERSION 2 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 2 **This reviewer's report is attached and the title contains their initials 'MKC'** Reviewer Name: Ming-Ka Chan Institution and Country: University of Manitoba, Canada Please state any competing interests or state ‘None declared’: None declared

Please leave your comments for the authors below Thank you for submitting this revised manuscript. I think you have addressed the concerns from the previous review. I like the addition of the Walpole list. Your explanations were helpful. I am still not familiar with the term 'grade physician'. Otherwise, there were a couple of spacing issues or missing quotes which I added to the attached document. See attached file.

Thanks to the reviewer for the positive feedback. We have changed the term “training grade physician” to “training physician” (denoting doctors who are not consultants or attending physicians) in the revised manuscript.

Reviewer: 1**This reviewer's report is attached and the title contains their initials 'JCH'** Reviewer Name: James Hudspeth Institution and Country: Boston University, USA Please state any competing interests or state ‘None declared’: none declared

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Please leave your comments for the authors below The authors have done a commendable job of improving their manuscript, tightening up both argumentation and the flow. I have some concerns that the "health informatics" competency was added outside of the overall framework and perhaps does not warrant inclusion in the list of 16.

We thank the reviewer for this very fair remark. In the methods section of the manuscript, we state

“In addition, a new comprehensive list of core competencies for GH in postgraduate medical curricula was developed by identifying common competencies across all publications identified by the scoping review, and by agreement of all authors”.

The “health informatics” competency was identified on the basis of “agreement of all authors” and on the basis of prevailing global health literature, so we would argue that this was within our planned framework. Although Tupesis et al (2013; reference 38 in the manuscript) do not mention informatics explicitly, they mention “Research, programming and evaluation” as a competency which does include health informatics.

There is a separate argument for health informatics competencies to be incorporated in medical (under-and post-graduate) education (Jidkov 2019; Walpole 2016). While we could definitely make the argument that other areas, e.g. evidence-based medicine and quality improvement, should also be included in the list of competencies, here we are making the argument that health informatics is a competency which should be incorporated into training of health professionals in global health. The evidence for this argument is the scale of change in data, our literature review and the pressing need for capacity in LMICs for informatics (Wyber 2015; Dolley 2018; Hersh 2010; Frankson 2016; Whittaker 2015). We therefore feel strongly that these factors support the inclusion of health informatics in the broader framework. Due to limitations on the number of references in the article, we could not include all of these references in the manuscript.

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Whittaker M, Hodge N, Mares RE, Rodney A. Preparing for the data revolution: identifying minimum health information competencies among the health workforce. Hum Resour Health. 2015 Apr 1;13:17.

Attached is a file with further comments on some specific areas, including a few typos and a reference that is absent.

Many thanks. For both reviewers, we have accepted and implemented all suggested changes in the PDF reviewer comments.

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