PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	The role of academic health centres in building equitable health systems: a systematic review protocol
AUTHORS	Edelman, Alexandra; Taylor, Judy; Ovseiko, Pavel; Topp, Stephanie

VERSION 1 - REVIEW

REVIEWER	Steven Wartman Association of Academic Health Centers Washington, DC USA
REVIEW RETURNED	12-Dec-2016

GENERAL COMMENTS	This is a solid proposal at the level of a PhD thesis (which it is). It is carefully crafted and methodologically sound up to a point. The rationale for linking AHC development to issues of health equity is actually an important but potentially untestable assumption. The major confounders in this regard are: 1) the sole reliance on the published literature has of course the limitation that many more relevant events may be occurring in the unpublished world of AHCs; and 2) there are highly variable health and payment systems from country to country, which raises the question of the validity of aggregating the results. I suggest that the principal author consider: 1) conducing a number of structural "site visits" (many be done by teleconference) with a sample of AHC leaders in various parts of the world for the purpose of getting a feel for the face validity of the approach being taken; and 2) exploring the possibility of utilizing select, publicly available health data bases to get information about health status in areas that have and do not have AHCs.

REVIEWER	Erica Di Ruggiero University of Toronto, Canada
REVIEW RETURNED	19-Dec-2016

GENERAL COMMENTS	Comments relate to the need to further clarify the concepts and scope of the review. Improved conceptual clarity is needed especially in the introduction. For example: Terms such as health disparities and health system equity are used but not well-defined. health equity and health disparities aren't the same but both are used. Do the authors have an operational definition for AHCs beyond what

	is stated at the outset? What is meant by preventive treatment? Population health, global health, health care… what is the scope? Is it primary, secondary prevention in scope? These concepts have different meanings; yet, the introduction uses all of them. Is the authors' definition of population health all-encompassing meaning does it also include health care? It's also unclear what the authors mean by equitable health systems, health equity agendas (which implies a 'who' that is not defined – government, agencies implementing health services, global institutions, etc.). Why is the term 'agenda' used in the review question? Rather, would it be preferable to how equity is characterized/described and/or operationalized? One of the gaps identified is that the literature on AHCs is atheoretical and heavily dominated by case studies - how is a theoretical or conceptual perspective being operationalized? Is this theory of change, mid-range theory? What is meant by theory? Limitations - encourage the authors to reflect on other limitations of systematic review methodology, especially given interest in AHCs (which by definition involve a complex set of relationships and processes). What studies might therefore be excluded (e.g. qualitative studies) Resources to review: http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001333

REVIEWER	Dr Catherine French NIHR CLAHRC Northwest London, Imperial College London, UK
REVIEW RETURNED	22-Dec-2016

GENERAL COMMENTS	This is a very well written, clear review protocol on a topic of growing importance (broadly what are the most appropriate organisational forms for addressing health inequalities). I recommend it for publication. I have a few minor comments/suggestions which the authors may wish to consider: 1) The paper could benefit from a little further clarity on the rationale for linking AHCs, as an organisational form, to work on health equity agendas, as different health systems will have different mechanisms for addressing health equity issues, which may or may not include AHCs. 2) The paper appears to assume that AHCs are engaging with health equity agendas and presents some evidence and references for this. Are the authors interested in how common this is? The authors may wish to consider a question prior to the first question, namely 'are AHCs engaging with health equity agendas?' It may be that some AHCs are not engaged in this as their primary focus is on basic science or clinical trials. Indeed, it may be that some AHCs inadvertently contribute to health inequalities if they divert resources away from other services/practices (although I am not suggesting the protocol attempts to address this point). 3) As the authors acknowledge, consistency of the language around

	Academic Health Centres, systems, networks, partnerships, organisations etc. is challenging as the terminology is contested and similar entities in different countries (or even within countries) may have different names. This means that the search terms need to be broad, which the authors acknowledge. Further, some policy mechanisms for addressing health equity issues through applied research may include funding streams (such as the Collaborations for Leadership in Applied Health Research and Care in England) which may not be captured by the search terms detailed. Will these be captured by the search strategy? 4) What constitutes 'evidence' in this area will also be challenging as the vast majority of the literature (as identified in the scoping review the authors cite) is expert opinion of single site cases (probably more than the observational studies which the authors refer to). It may be helpful to address a little further how the authors will appraise the quality of 'evidence' (e.g. one opinion piece v another). 5) The role of context and the systems in which AHCs are based is critical to understanding how they operate. It may be helpful for the authors to include a short descriptor of context, beyond country setting (if possible) at the data extraction phase. Overall this is a strong protocol and the results of the review would be of interest when completed.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Steven Wartman
Institution and Country: Association of Academic Health Centers, Washington, DC USA

1. This is a solid proposal at the level of a PhD thesis (which it is). It is carefully crafted and methodologically sound up to a point. The rationale for linking AHC development to issues of health equity is actually an important but potentially untestable assumption.

2. The major confounders in this regard are:
1) the sole reliance on the published literature has of course the limitation that many more relevant events may be occurring in the unpublished world of AHCs; and
2) there are highly variable health and payment systems from country to country, which raises the question of the validity of aggregating the results.

Author response:
Thank you for your comments. We agree that sole reliance on the published literature is a limitation of this review and we have now acknowledged this in the protocol (page 12). It may be worth noting that collection of unpublished material, along with other data sources, relevant to the review questions will be undertaken as part of a PhD by the first author following the completion of this review.
Regarding variability of health and payment systems, key health system features within the contexts in which AHCs operate will now also be included in a table (see response to your final suggestion below), as now described on page 10 of the protocol. This contextual information will then be considered in the analysis phase of the review.

3. I suggest that the principal author consider:
1) conducting a number of structural "site visits" (many be done by teleconference) with a sample of AHC leaders in various parts of the world for the purpose of getting a feel for the face validity of the approach being taken; and

Author response:

Thank you for your suggestion. Following the completion of this review, the first author, as part of a PhD, plans to arrange a set of site visits to a sample of AHCs to collect data relevant to the review questions and its findings. Data collection will include considering unpublished literature, in addition to interviews and participant observation.
This initial systematic literature review, therefore, has been designed to consider the scope and depth of the published literature before undertaking deeper case-based analysis which will include compilation of relevant unpublished documents, events, issues and observations.

2) exploring the possibility of utilizing select, publicly available health data bases to get information about health status in areas that have and do not have AHCs.

Author response:
During the course of this review it is anticipated that a number of AHCs will be identified in the literature. In response to this useful suggestion, we will list each of these AHCs identified during the course of the review in a table alongside available health status data relevant to their locations, and characteristics of the health service context as described above. While it is noted that this list will miss AHCs not profiled in published or grey literature reviewed, structuring the available data in this way will nonetheless offer important insights worthy of future follow up and analysis.
Undertaking a more comprehensive mapping and analysis of AHC locations and health status data compared with areas that do not have AHCs, along the lines you suggest, could yield further illuminating insights and will be considered as a possible future initiative by the authors.

Reviewer: 2
Reviewer Name: Erica Di Ruggiero
Institution and Country: University of Toronto, Canada

Comments relate to the need to further clarify the concepts and scope of the review. Improved conceptual clarity is needed especially in the introduction. For example:
1. Terms such as health disparities and health system equity are used but not well-defined. health equity and health disparities aren't the same but both are used.

Author response:
Thank you for your comment. A conceptual definition of health equity and health inequity have been added to the introduction on page 6.

2. Do the authors have an operational definition for AHCs beyond what is stated at the outset?

Author response:
For the purpose of the review, the inclusion criteria defines AHCs as those that self-identify as AHCs (or are identified as such by the publication's author(s)) – see page 8. No further operational definition is given owing to the structural diversity of AHCs, and the intention for this review to be an important first step in linking AHC organisational forms with the health equity concept.

3. What is meant by preventive treatment?

Author response:
'Preventive treatment' is quoted in this protocol from a paper by Dzau et al (2010), which refers to the potential for AHCs to play a greater role in public and population health initiatives, in contrast to the a traditionally dominant focus of AHCs on what the authors of that paper describe as 'novel drugs, devices and other technologies', which are focused on improving the health of individuals. Paragraph 2 on page 5 describes this shift, and further information has been added to the preventive treatment quotation in paragraph 3 to highlight the intended juxtaposition.

4. Population health, global health, health care… what is the scope? Is it primary, secondary prevention in scope? These concepts have different meanings; yet, the introduction uses all of them.

Author response:
The introduction lists a range of concepts in current usage to describe a rapidly changing context in which AHCs are being described by some as having a role in addressing inequities in health care (see Dzau et al 2010, Ackerley et al 2011 and Perman et al 2015). Population health, global health and other terms have been included in the introduction as they relate to the distribution of health outcomes within groups and across different populations, and are thus relevant to the concept of health equity.
The authors also suggest that a broad scope relating to the health equity concept is necessary in the literature searching phase to capture as many published papers as possible linking the concept with AHCs.

5. Is the authors' definition of population health all-encompassing meaning does it also include health care?

Author response:
The definition of population health is not all-encompassing in that it will only be used to the extent that it is able to identify literature that addresses health care inequities. The term 'population health' will be included in the pearl harvesting approach to developing search terms for the database searches (described on page 9). If the term is able to identify articles that address issues relevant to health equity it will be included in the final list of search terms for the review.

6. It's also unclear what the authors mean by equitable health systems, health equity agendas (which implies a 'who' that is not defined – government, agencies implementing health services, global institutions, etc.). Why is the term 'agenda' used in the review question? Rather, would it be preferable to how equity is characterized/described and/or operationalized?

Author response:
Thank you for your suggestion. Broad conceptual definitions of 'equitable health systems' and 'health equity' have been added to the introduction on page 6. An operational definition of 'health equity' is described on page 8: 'Health equity will include all policies, programs and objectives that aim to address inequalities in health that are avoidable yet not avoided. Implicit in this definition of health equity are concepts of addressing disadvantage and improving health for underserved populations, which include consideration of the social determinants of health.'
We agree that 'agendas' as currently used is not necessary in the review questions and this term has now been removed. This has prompted a tightening of the review questions to enable assessment, as you suggest, of how health equity is characterised, described and/or operationalised by AHCs. The number of review questions has consequently been reduced from three questions to two (see page 6).

7. One of the gaps identified is that the literature on AHCs is atheoretical and heavily dominated by case studies - how is a theoretical or conceptual perspective being operationalized? Is this theory of change, mid-range theory? What is meant by theory?

Author response:
Thank you. A first step towards theory generation will be undertaken in the analysis phase by aggregating concepts identified in the literature and generating descriptive themes through the thematic synthesis approach (as described on page 11). To offer a clearer theoretical perspective as you suggest, a further step has been added describing the authors' intention to develop one or more

mid-range theories, or a conceptual framework, from the review findings:
'Development of mid-range theory or a conceptual framework to better understand the roles and functions of AHCs will then be undertaken to aggregate the results into hypotheses for future research.'
Any theory or conceptual framework developed from this review will be drawn upon and further refined in future work to be undertaken by the first author as part of a PhD.
A minor amendment has been made to the statement on page 11 to reflect the intention of the review to address the gap in the literature by 'building a conceptual framework to examine the role of AHCs in relation to broader health care goals'.

8. Limitations - encourage the authors to reflect on other limitations of systematic review methodology, especially given interest in AHCs (which by definition involve a complex set of relationships and processes). What studies might therefore be excluded (e.g. qualitative studies)

Author response:
Thank you for this suggestion. Mention of limitations (including limiting the study to published papers only, the possible limitations of the terms used to describe AHCs in the searches, and likely limitations of the included study designs) have now been outlined on page 12.

9. Resources to review:
http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001333

Author response:
Thank you for referring us to these resources. The Prisma-Equity 2012 Extension is now referred to on page 7 and the extensions will be considered in all stages of the review.

Reviewer: 3
Reviewer Name: Dr Catherine French
Institution and Country: NIHR CLAHRC Northwest London, Imperial College London, UK

This is a very well written, clear review protocol on a topic of growing importance (broadly what are the most appropriate organisational forms for addressing health inequalities). I recommend it for publication. I have a few minor comments/suggestions which the authors may wish to consider:
1. The paper could benefit from a little further clarity on the rationale for linking AHCs, as an organisational form, to work on health equity agendas, as different health systems will have different mechanisms for addressing health equity issues, which may or may not include AHCs.

Author response:
Thank you for your suggestion. The authors agree that there is significant variation in the contexts in which AHCs operate, and that this is likely to impact on mechanisms for addressing health equity issues. As such, key features of the health systems in which AHCs identified in the literature operate will be outlined in a table alongside relevant health status statistics (see page 10). These contexts will then be discussed alongside review findings.
The rationale for linking AHCs, as an organisational form, with the health equity concept is now elaborated on pages 6 and 7 of the introduction:
'By positioning AHCs, in their health system context, as the unit of analysis, this review identifies AHCs as key health system structures that are being established or are undergoing transformation in a range of countries and settings, and endeavours to shed light on whether they have a particular role to play in aiding efforts to build equitable health systems locally and globally. While significant diversity in AHC structures and their health system contexts is acknowledged (AHCs, like health systems more broadly, have a large 'menu' of policy options available to them to reach health equity goals), this review intends to identify any commonalities that might exist in published experiences and

approaches, across different settings, of organisations identified as AHCs.'

2. The paper appears to assume that AHCs are engaging with health equity agendas and presents some evidence and references for this. Are the authors interested in how common this is? The authors may wish to consider a question prior to the first question, namely 'are AHCs engaging with health equity agendas?' It may be that some AHCs are not engaged in this as their primary focus is on basic science or clinical trials. Indeed, it may be that some AHCs inadvertently contribute to health inequalities if they divert resources away from other services/practices (although I am not suggesting the protocol attempts to address this point).

Author response:
Thank you. The review questions have now been revised at the suggestion of another reviewer (see page 6). The review will now consider how the concept of health equity is characterised, described and/or operationalised in relation to AHC activity, within the published literature.
Assessment of how common it is for AHCs to engage with the health equity concept may be an important extension activity to this review, to be considered in future work on this topic.

3. As the authors acknowledge, consistency of the language around Academic Health Centres, systems, networks, partnerships, organisations etc. is challenging as the terminology is contested and similar entities in different countries (or even within countries) may have different names. This means that the search terms need to be broad, which the authors acknowledge. Further, some policy mechanisms for addressing health equity issues through applied research may include funding streams (such as the Collaborations for Leadership in Applied Health Research and Care in England) which may not be captured by the search terms detailed. Will these be captured by the search strategy?

Author response:
The scope of the review is limited only to AHCs as unique organisational forms, and does not extend to related programs that are not defined as AHCs or other proxy terms to be identified through the pearl harvesting process.

4. What constitutes 'evidence' in this area will also be challenging as the vast majority of the literature (as identified in the scoping review the authors cite) is expert opinion of single site cases (probably more than the observational studies which the authors refer to). It may be helpful to address a little further how the authors will appraise the quality of 'evidence' (e.g. one opinion piece v another).

Author response:
Thank you. The quality and relevance appraisal process described on pages 10 and 11 will allocate a score for each study included in the review based on assessment of relevance to the review questions (score of 1 or 0), and quality (score of 1 or 0). Quality will be assessed using the relevant JBI quality appraisal tool for study type such as the systematic review, qualitative, or text and opinion checklists, with studies showing 50 per cent or more compliance with the checklist receiving a score of 1. The results of this appraisal will contribute to the analysis of review limitations. It is envisaged that scores for some studies will equal others.

5. The role of context and the systems in which AHCs are based is critical to understanding how they operate. It may be helpful for the authors to include a short descriptor of context, beyond country setting (if possible) at the data extraction phase.

Author response:
Thank you for your suggestion. As also suggested by another reviewer, key features of the health

service context will now be profiled in a table alongside a list of identified AHCs and relevant health status statistics – please see page 10 of the protocol.

VERSION 2 – REVIEW

REVIEWER	Steven A. Wartman MD, PhD Association of Academic Health Centers Washington, DC USA
REVIEW RETURNED	28-Feb-2017

GENERAL COMMENTS	The authors have satisfactory addressed my comments/suggestions in the previous review.

REVIEWER	Erica Di Ruggiero University of Toronto Canada
REVIEW RETURNED	05-Mar-2017

GENERAL COMMENTS	Well-done. The authors have addressed the feedback from peer reviewers in a comprehensive and balanced manner. I have no further comments to add.

REVIEWER	Dr Catherine French NIHR CLAHRC NWL, Imperial College London, UK
REVIEW RETURNED	08-Mar-2017

GENERAL COMMENTS	Thank you for the opportunity to review this manuscript again. In my view the authors have addressed the previous comments. These changes have further strengthened the paper and I recommend it for publication. I look forward to seeing the results of the review. If this is published, the authors may wish to give a detailed explanation of their search strategy processes for (and quality assessment of) the grey literature they identify, as this may be subject to considerable bias.