Author’s response to reviews

Title: Setting the Global Research Agenda for Community Health Systems: Literature and Consultative Review

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Author’s response to reviews:

We thank the reviewers for taking the time to promptly review this manuscript and for the insightful feedback. This manuscript follows an unconventional approach for literature reviews, and its strength is in the process we undertook to not only assess the literature but actively engage ministries of health and implementers in seven countries to identify priority areas for operational research. We have responded below to the reviewers’ comments and made accompanying changes in the manuscript.

< Reviewer #1: Twenty years ago, Kahssay, Taylor, & Berman declared, "there is no longer any question of whether CHWs can be key agents in improving health; the question is how their potential may be realised" (1998, p.9). The authors of this piece are to be commended for reinforcing what has been a slow shift from queries on CHW program efficacy to those on the mechanics of program optimization. They are also to be commended for their efforts to engage a broad range of stakeholders across the community health eco-system, including national-level policymakers. There are, however, several questions that must be addressed prior to publication of this manuscript:

1. Regrettably, the first question is what this piece adds to the comprehensive research agenda set out in the recently released "WHO guideline on health policy and system support to optimize
community health worker programmes." Setting aside the WHO's considerably greater normative mandate to "set the agenda," the more fit-for-purpose methods employed in drafting its guideline would seem to make this paper's findings at best redundant, at worst, less reliable:

The community health worker space indeed has a history of rich, and routinely-updated systematic reviews, including the series of Cochrane reviews undertaken by colleagues Lewin and Glenton over the last decade. The more recently undertaken WHO guideline provides critical guidance on very specific key questions to strengthen community health worker programming.

Our consultative efforts take a much broader lens and engaged several of the experts who served as reviewers for the WHO guideline. Additionally, the paper presents the knowledge priorities of the Ministries of Health which are often not reflected in more traditional reviews.

As to the reviewer’s comment on ‘fit-for-purpose’, the authors would gently re-emphasize that the stated purpose of this review, as given in the title, is to reflect on the global research agenda. The WHO Guideline and its recommendations have a much more direct and policy-relevant agenda to inform the implementation of CHW programs. Each in their own way are fit for their stated purpose.

*a. The authors of this paper narratively (i.e. unsystematically) compiled systematic reviews on intermediate factors affecting the effectiveness of CHW programs and extracted listed research gaps. This approach has two critical weaknesses: (i) the older the review, the more likely its assessment of research gaps is out-of-date. Shojania et al. (2007) indicate that the median duration of survival for systematic reviews free of a signal for updating is 5.5 years. More than half the reviews cited by the authors in Additional File 1 are older than this (with several aged more than a decade: Bosch-Capblanch Garner, 2008, Dieleman et al., 2008, Franco et al., 2002, Haines et al., 2007, Rowe et al., 2005). The authors never explain why such old reviews are relevant (or at minimum, not misleading) sources from which to extract a current list of research gaps. (ii) There may not be a systematic review for every relevant policy question (and/or not all relevant reviews will be found, given that the authors have not used a systematic search). Given this, relevant gaps may be omitted. The authors do not consider either weakness or their implications in their discussion. b. The research priorities in the guideline (section 8) are, by contrast, based on a vastly more thorough and up-to-date review of the literature: a systematic review of reviews (Scott et al. 2018) and a further 15 newly-commissioned systematic reviews spanning policy questions relevant across the working lifespan of CHWs. Rather than
synthesizing the gaps listed in an ad hoc collection of secondary literature, the guideline authors derived the gaps based on an exhaustive review of primary literature. c. N.B. While the authors of this paper are to be commended for having their list of research gaps validated and prioritized by two technical advisory groups, the research priorities listed in the guideline were likewise debated and validated by a twenty-seven-member guideline development group and nineteen-member external review group whose members were also policymakers, implementers, researchers, advocates, etc. Given this, the claim on p. 5 that Scott et al. needs to be "contextualized and prioritized" is unconvincing—this was already done as an integral part of the guideline development process). >

Reviews published after 2000 were determined as appropriate for inclusion in the review, based on the extensive historic and current experience of the research team as well as discussions with external experts. In community health, the historic perspective holds critical relevance given the limited progress and dearth of knowledge generation in the 90's and the more recent revitalization of, and support for, community health over the last decade. In fact, much of the recent literature reiterates several gaps identified in the space nearly two decades ago. Through our consultative approach, we were able to identify additional research gaps based on the recent trends, such as the use of digital technologies to strengthen community health. While the point made by Shojania et all is well taken, in practice, it is extremely resource intensive to repeat and update reviews every 5-6 years.

We completely agree that systematic reviews do not capture every relevant policy question, and therefore this is a “consultative review”- the strength of which lies in our efforts to convene ministry of health officials across seven countries, as well as Africa and Asia-based community health experts, who bring the much-needed perspective of the governments, which is often lacking in more formal systematic reviews.

As previously mentioned, this review takes a much broader health systems perspective than the 15 critical questions addressed by the WHO guidelines. Research, by design, is an iterative process and the presence of work in one area by a select group seldom precludes the need for a different lens, especially, one that is driven bottom-up in close partnership with Africa and Asia-based implementers and ministry officials. We expect that this review will only further validate, support and contextualize the recommendations put out by our colleagues at the WHO.

<2. The methods used to search for extant systematic reviews could be clarified, particularly:
a. Why has Scott et al. 2018 been included, given that it is an overview of reviews, not a systematic review as noted in the inclusion criteria? If the authors are open to including other types of papers, they might consider, e.g. Naimoli 2014.

Thanks for this point. The inclusion of the Scott et al. overview of reviews has now been clarified.

The goal of Naimoli et al. 2014) is to develop a logic model to understand the causal pathway to improve performance of CHWs and not to systematically present the literature. Naimoli et al. have in fact followed a process very similar to this paper, engaging a wide range of stakeholders in consultatively determining a pathway to improved performance.

b. I hesitate to recommend my own paper, but Ballard & Montgomery 2017, "Systematic review of interventions for improving the performance of community health workers in low-income and middle-income countries" would seem to be directly relevant here as well.

We thank the reviewer for the suggested citation and have cited the systematic review as appropriate.

3. The methods used to extract and prioritize themes could be described:

a. How were the themes developed? Several do not seem mutually exclusive (e.g. is #18 "How and to what extent are digital technologies helpful as a component of supervision and monitoring of CHWs" not a sub-point of #25 "Does technology have a role to play in scaling CHW programs and improving performance?")

The themes presented under the results section of the paper were results-driven and identified based on a review of the included papers. This identification process has been clarified under the methods section of the paper. The research questions were derived from the results of the review and span a range of topics. Some of the questions are fairly broad, e.g. policy and governance level questions, or the technology-related questions. These questions reflect areas where research so far is critically lacking. Questions in areas where prior research has been conducted are quite specific and allow a deeper dive into important gaps in that area.
Attendees at the Johannesburg consultation were asked to identify three priority research areas, the TAG was "asked to reflect" on the list of 32 research gaps, and experts from the Frontline Health Workers Coalition identified five priority areas. How were these (slightly different) survey responses combined? To whom do the 18 respondents referenced in Additional File 1 refer?

To clarify, the TAG members and the FHWC members were invited to respond to the same survey to identify research priority areas among the 32 research gaps, and to further prioritize these research gaps. The 18 respondents referenced in additional file 1 are the members of these two groups who volunteered to provide their opinions.

4. The ethical dimensions of the proposed lines of inquiry ought to be considered:

a. On p. 6-7, the authors identify the way CHW baseline characteristics affect performance as a gap in the literature. While the ways a CHW's innate characteristics affect outcomes has long been debated in the literature (e.g. Bhattacharyya, 2001; López Quiñones, 1999; Ofosu- Amaah, 1983) it is worth considering the ethics of conducting such analyses in the future. Many high-income countries have employment discrimination laws that prohibit selection on these criteria (e.g. gender). Though similar legislation is often poorly enforced in LMICs, the authors might include a short reflection on the equity issues at the heart of these debates (cf. Heymann, Stein, & Moreno, 2014).

We agree that any analyses on how CHW baseline characteristics, including gender, should be ethically conducted. We stand by the data presented in our review that there is a need to study how gender might affect the ability of CHW to perform their tasks. In many settings, a male CHW would not be well placed to conduct antenatal care examinations. In other contexts, female CHWs may face unique challenges (e.g. inequitable gender norms and safety) (Sarin & Lunsford, 2017; Dasgupta 2017). Characteristics of CHWs (e.g. gender, minority groups, etc.) affects CHWs’ working relationships both in the community and within power structure of the health system (Schaaff et al., 2018; George et al., 2018). Insufficient research disaggregating CHWs by certain characteristics (e.g. sex) limits the ability to make meaningful equity-promoting policy and programmatic recommendations (George et al, 2017).
On p. 10 the authors flag "the risk of exploiting CHWs" yet on the preceding page claim that "formal salaries for a large cadre of CHWs may be financially unsustainable at a national scale in most low- and some middle income (sic) countries." Setting aside the fact that other, uncited analyses suggest the contrary (e.g. investing in paid, formalized cadres CHWs in sub-Saharan Africa can result in an economic return of up to 10:1 - "Strengthening Primary Health Care through Community Health Workers: Investment Case and Financing Recommendations" 2015), the authors never consider the ethics of asking the poor to volunteer their time and labour to secure their own basic right to health. It is instructive that the recent WHO Guideline, despite low certainty of evidence, cites best practice in relation to labour rights in its recommendation that CHWs receive a financial package commensurate with the job demands and complexity. The degree to which a policy choice is empirical vs. moral/political could be reflected on throughout.

A recent analysis (Taylor C, Griffiths F, Lilford R. Affordability of comprehensive community health worker programmes in rural sub-Saharan Africa. BMJ Glob Heal [Internet]. 2017;2(3):e000391. Available from: http://gh.bmj.com/lookup/doi/10.1136/bmjgh-2017-000391) suggests that given the GDP and health expenditures of the countries, financing salaries, as currently recommended by some countries, for a large cadre of community workers is financially unsustainable. That is what the data suggest. We have added a citation to a paper that quantifies the threshold for affordability of CHW services.

However, we do wholly agree with the reviewer and the broader community that CHWs should receive fair wages. In fact, this issue is core to institutionalizing CHWs. We’ve added a brief sentence to clarify that this review is by no means suggesting otherwise. In fact, this is the very reason why further studies are needed in this space to understand the appropriate incentive structure for CHWs, which is both, fair to the health workers and affordable for the ministries.

Further elucidating the scope of the agenda being proposed would be helpful:

a. The authors indicate that they are looking for research gaps in relation to intermediate factors affecting the effectiveness of CHW programs, yet several the gaps discussed in the result section relate to what tasks CHWs can perform (e.g. p11: "what types of drugs can CHWs safely administer", "research on the effectiveness of CHW programs to address non-communicable diseases") rather than intermediate factors that would strengthen their performance. >
The focus of this paper is on the intermediate factors that determine adequate performance of CHWs. Indeed, clarity on the tasks that CHWs can effectively perform is a critical determinant of their effective performance. As stated in the discussion, the Kampala Statement highlighted the potential role of CHWs in a wide range of activities spanning the areas of health, education and agriculture. For CHWs and CHW programs to be effective, it is important to determine what services, and what drugs they can safely administer and whether expansion/definition of their responsibility to include these tasks is safe, effective and an appropriate use of resources.

6. Finally, there are a few typos to be corrected:

   a. p. 4, line 10: errant "…" done.


   c. p. 9, line 5: period misplaced "meeting.[21]" done.

   d. p. 9, line 16: missing dash in "middle-income" done.

   e. p. 11, line 4: missing space "[16].With" done.

   f. p. 13, line 19: extra space "programs -defined" done.

   g. Additional File 1: There are two papers written by Kok 2015—they should be differentiated using "2015a" and "2015b" We have updated the references in the manuscript document to include “2015a” and “2015b.” Additional File 1 has also been updated to accurately reference the correct paper: Kok 2015b.

Reviewer #2: Manuscript #: HRHE-D-18-00193 My review

Setting the Global Research Agenda for Community Health Systems: Literature and Consultative Review by Agarwal et al.

This is a very well planned, executed and presented extensive work which I recommend its publication in HRHE. The authors may wish to address following concern. The ultimate set of five research questions which received highest consensus of experts, cover the different areas of identified gaps. However, it is worth stating that 3 out of the 5 priorities were concerned with supervision and governance and one for each of cost effectiveness and motivation. No doubt many of the 32 areas identified were not covered. The community embeddedness and community acceptance are among the most important areas which were left uncovered. As Scott et al stated, "acceptance from a community may affect CHW retention, motivation, performance, and accountability" and "there is minimal evidence on how to strengthen a CHW connection to the
community (Scott et al 2018.) I believe this area need to be considered in the questions by authors if that is regarded pertinent. Otherwise, the manuscript is an important contribution to this important aspect of the PHC-based health system strengthening.

Thank you for making this point and it is definitely well-taken. Four of the 32 questions for the expert survey were focused on varying aspects of community embeddedness and received support as a priority question for research by less than 50% of the respondents. However, we do recognize that it is a vital area for further research and evaluation and have highlighted this in the revised discussion section.