Reviewer’s report

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

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Reviewer: Madeleine Ballard

Reviewer's report:

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:

   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This approach has two critical weaknesses: (i) the older the review, the more likely its assessment of research gaps is out-of-date.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).

Assuming this critical question can be resolved, there are several additional points to be addressed:

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.

   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.

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?")

   b. 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?

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).

b. 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.

5. 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.

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

a. p. 4, line 10: errant "…"

b. p. 7, line 9: missing space "proceed[21]"
c. p. 9, line 5: period misplaced "meeting.[21]"
d. p. 9, line 16: missing dash in "middle-income"
e. p. 11, line 4: missing space "[16].With"
f. p. 13, line 19: extra space "programs -defined"
g. Additional File 1: There are two papers written by Kok 2015—they should be differentiated using "2015a" and "2015b"

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