

How do decision makers use evidence in community health policy and financing decisions? A qualitative study and conceptual framework from four African countries

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10 **Abstract**

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12 Various investments could help countries deliver on the universal health coverage (UHC) goals set by
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14 the global community; community health is a pillar of many national strategies toward UHC. Yet
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16 despite resource mobilisation toward this end, little is known about the potential costs and value of
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18 these investments, as well as how evidence on the same would be used in related decisions. This
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20 qualitative study was conducted to understand the use of evidence in policy and financing decisions
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22 for large-scale community health programmes in low- and middle-income countries (LMICs).
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24 Through key informant interviews with 43 respondents in countries with community health
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26 embedded in national UHC strategies (Ethiopia, Kenya, Malawi, Mozambique) and at global
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28 institutions, we investigated evidence use in community health financing and policy decision making,
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30 as well as evidentiary needs related to community health data for decision making. We found that
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32 evidence use is limited at all levels, in part due to a perceived lack of high-quality, relevant evidence.
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34 This perception stems from two main areas: first, desire for local evidence that reflects the context;
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36 second, much existing economic evidence does not deal with what decision makers value when it
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38 comes to community health systems – that is, coverage and (to a lesser extent) quality. Beyond the
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40 evidence gap, there is limited capacity to assess and use the evidence. Elected officials also face
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42 political challenges to disinvestment as well as structural obstacles to evidence use, including the
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44 outsized influence of donor priorities. Evaluation data must to speak to decision maker interests and
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46 constraints more directly, alongside financiers of community health providing explicit guidance and
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48 support on the role of evidence use in decision making, empowering national decision makers.
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50 Improved data quality, increased relevance of evidence and capacity for evidence use can drive
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57 improved efficiency of financing and evidence-based policymaking.
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Introduction

Well-resourced close-to-community (CTC) health workers can deliver high-quality care; there is extensive, robust, project- and trial-based evidence for this across a range of settings and disease areas, as shown in a set of recent reviews of community health programmes (Chou *et al.*, 2017; Freeman *et al.*, 2017; Jennings *et al.*, 2017; Perry *et al.*, 2017; Sacks *et al.*, 2017; Schleiff *et al.*, 2017; Scott *et al.*, 2018). Armed with this evidence, extending access to primary healthcare through CTC cadres with an aim of universal health coverage (UHC) has long been used as an approach and lately become a priority in many countries (Wang *et al.*, 2016; Bhutta, 2017; Javanparast *et al.*, 2018). The World Health Organisation has supported operationalisation of extending access in this way through the development of guidelines for national CTC programmes (Cometto *et al.*, 2018). Yet in many health systems, community health remains perceived as an extension of the ‘formal’ system rather than a core, integrated service delivery platform (Theobald *et al.*, 2014; Schneider *et al.*, 2016; Tseng *et al.*, 2019).

Economic evidence should play a predominant role in the integration of community health into wider health systems, due to the need for trade-offs between different health investments and competition for limited resources. There is a small but growing body of economic evidence on community health programmes, recently presented in a systematic review by Nkonki *et al.*; like the evidence on quality described above, the authors state that most evidence is “from small scale and vertical programmes” (Nkonki, Tugendhaft and Hofman, 2017). Once community health programmes start operating at scale, quality of care and performance of CTC providers do not always live up to their potential (Kok *et al.*, 2015; Silva *et al.*, 2016; Yourkavitch *et al.*, 2016; Ballard *et al.*, 2017; Phiri *et al.*, 2017; Lehmann, Twum-Danso and Nyoni, 2019). The limited economic evaluations of the quality of large-scale CTC programmes generates uncertainty about the value of this investment; studies on the costs of large-scale CTC programmes (Vaughan *et al.*, 2015; Barger *et al.*, 2017; Daviaud *et al.*, 2017; Nkonki, Tugendhaft and Hofman, 2017; Taylor, Griffiths and Lilford,

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2017) have rarely incorporated data on quality of care. In assessing outcomes, incorporating quality into economic evaluations of CTC programmes is challenging because of difficulty in defining quality of care for CTC interventions and the complex causal pathways between CTC quality of care measures and health outcomes. Poor data quality affects measurement across both costs and outcomes (Yourkavitch *et al.*, 2016; Regeru *et al.*, 2020).

As an extension or even marginalised aspect of the healthcare system, community health decision making does not benefit from the many formal procedures for generating and using evidence that have been developed in the wider health sector. For example, there is a gap in community-focused financing literature; Scott *et al.* showed that out of 122 publications on the ASHA programme in India between 2005 – 2016, only five dealt with financing (Scott, George and Ved, 2019). Where it exists, community financing literature often focuses more on community-based micro insurance schemes rather than macro financing of community health programmes despite a predominance of external financing in this space (McCollum, Taegtmeier, *et al.*, 2018; Agarwal *et al.*, 2019). Because potential users of evidence often perceive community-level care as ‘free’ to the system, this limits commissioning of economic evidence at local and national levels. Similarly, in the wider sector, the broad literature on proceduralism focuses on formalised processes for evidence use, consultation, transparency (Barasa *et al.*, 2015) – yet in community health as a sub-sector, these processes are not well established. As such, even when evidence about community health interventions is available, this evidence may be underutilised in decision making. In the absence of sufficient procedures, (the largely external) investment in community health seems to be driven by ideology and global movements over evidence. A closer look specifically at community health decisions within the health sector is imperative given the relative marginalisation of community health as an extension of the health system and its reliance on external financing in many LMICs (Theobald *et al.*, 2014; Javanparast *et al.*, 2018; Tseng *et al.*, 2019).

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This multi-country qualitative study was designed to understand the role of evidence in how decisions are made for community health financing and policy at national and global levels. We focus our study in four countries (Ethiopia, Kenya, Malawi, Mozambique) that have large-scale public sector community health programmes that remain highly dependent on external financing. In key informant interviews with national and global funders, policymakers and researchers, we set out to understand what evidence is used and by whom, and when and what additional evidence could improve the efficiency of community health decision making in settings where CTC providers are an integral part of the health system.

Methods

We used a qualitative cross-sectional approach to understand the use of economic evaluation evidence in community health priority setting and financing. Qualitative methods were utilised to allow for an understanding of the process (how things are currently working), stakeholders (who is involved), and wider decision space (role of the health system and context). Given the limited number of individuals involved in policy and financing decisions and their seniority, key informant interviews were selected as the most appropriate methodology to extract relevant information. Data were collected between November 2017 – November 2018.

Study sites and sampling

43 key informant interviews were conducted with purposively sampled decision makers involved in community health policy and financing decisions at national and global level based on the sampling frame shown in Table 1. We selected countries with national community health programmes in Africa that were part of the REACHOUT consortium: Kenya, Ethiopia, Malawi,

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3 Mozambique¹(REACHOUT, 2013). Respondents included national and sub-national Ministry of
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5 Health staff involved with community health financing and/or programming, and implementers of
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7 large-scale community health programmes. The global interviews included institutional financiers of
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9 community health, community health researchers and normative agencies. These respondents were
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11 selected to represent those making community health policy and financing decisions in the selected
12
13 REACHOUT countries, generating evidence to inform the decisions, and those affected by the
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15 decisions through involvement in translating policy to practice.
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21 *Data collection, management and analysis*

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23 Interviews were guided by a semi-structured topic guide, which was piloted in Kenya before use
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25 (available in Supplementary File 2). We asked respondents questions about their community health
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27 experience; about domestic and external financing for community health in their setting; and, using
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29 quality improvement as a case example of a project, about evidence needs, evidence use, and
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31 financing mechanisms related to decision making and the (community health) decision space.
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37 In all cases except two in Ethiopia and two in Mozambique, interviews were conducted in English by
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39 the corresponding author. In those four interviews, local researchers with prior experience in
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41 qualitative methods and community health were trained in the interview content and objectives and
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43 conducted the interviews.
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49 Thirty-nine of 43 total interviews were digitally recorded and transcribed by local researchers in each
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51 country (where they were conducted in another language, they were transcribed in the local
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53 language and then translated); the remaining respondents asked not to be recorded and interviewer
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57 ¹ REACHOUT is a multi-country research consortium focused on the quality of community health that
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59 worked from 2014-2019 in six countries (Ethiopia, Kenya, Malawi, Mozambique in Africa; Bangladesh
60
and Indonesia in Asia). For this piece of work, we focused on the African countries. For details on the
community health programmes in the four study countries, see Supplementary File 1.

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3 notes were included in lieu of a transcript. Code frame development was done deductively
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5 according to the objectives of the study: understanding decision maker perspectives on quality and
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7 understanding the use of evidence in decision making for community health financing and
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9 programming. Additional codes (particularly, detailed information around financing and economic
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11 evidence) were added inductively in the course of the analysis as they had arisen due to the open
12
13 questioning style used in the interviews (Gale *et al.*, 2013); for full code frame see Supplementary
14
15 File 3. Analysis was assisted by NVivo11 software and for each theme, relevant quotes were
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17 examined to generate a draft narrative. A thematic framework approach was used for the analysis
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19 (Gale *et al.*, 2013). Given there was a single lead researcher conducting interviews and coding,
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21 quality assurance was done in the following ways: 1) review of selected transcripts by senior
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23 authors; 2) coding workshop with colleagues where multiple individuals coded transcripts to ensure
24
25 inter-coder reliability; 3) discussions with and feedback from research partners/co-authors in each
26
27 country on emerging themes. For non-recorded interviews, the notes were included as transcripts
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29 and coded in the same way as verbatim transcriptions described above; direct quotes from these
30
31 interviews were not included due to risk of misrepresentation of exact wording.
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39 **Results**

40 *Respondent characteristics*

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42 A total of 43 key informant interviews were conducted with purposively sampled respondents
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44 working in community health at national and global level. In total, these were: Global (N=11),
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46 Ethiopia (N=10), Kenya (N=7), Malawi (N=6) and Mozambique (N=6); descriptions of respondents
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48 shown in Table 2. There was a focus on policy and financing decision makers, with the latter being
49
50 over-represented at global level due to the predominance of external financing in this area.
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52 Implementers and health workers represent the individuals who translate decisions into
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54 practice/action and have a perception of how and if their evidence gets used in this process. Of the
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56 researchers, who represented a smaller proportion of the total sample, two were economists and
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3 the majority were working more broadly on implementation research, governance, feasibility and
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5 process evaluations in the CTC space.
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7 Institutions represented at the global level included: UNICEF, World Health Organization; Global
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9 Fund to Fight AIDS, Tuberculosis and Malaria; Global Financing Facility for Women, Children and
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11 Adolescents; Last Mile Health; Financing Alliance for Health; United Nations' Special Envoy for
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13 Health; Community Health Impact Coalition; United States Agency for International Development;
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15 South Africa Medical Research Council; John Snow International representing Maternal and Child
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17 Health Integrated Program; out of this group, implementers are those organisations that deliver
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19 community health programmes in country. Institutions represented at country level are national and
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21 sub-national government staff as well as NGOs and International Organisations as relevant to the
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23 community health planning, financing and delivery in each context.
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30 *Evidence use in national level decisions for publicly funded programmes*

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32 The reported use of economic evidence in health policy and financing decisions varied by country,
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34 but was generally informal and motivated by individuals instead of systems. Ethiopia demonstrated
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36 the most formalised processes and procedures for use of economic evaluation in the health sector at
37
38 the national level, with a separate department inside the Federal Ministry of Health's Planning
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40 Directorate responsible for using and assessing economic evidence (particularly finance data from
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42 National Health Accounts and evaluation data from Public Health Research Institute). No study
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44 countries systematically required the use of economic evidence in decision making for as a formal
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46 stage in public policy or financing decisions for community health. Community health systems were,
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48 in the views of most respondents, an extension of the health system rather than a core part,
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50 evidenced in part by the title of CTC workers as 'extension workers' in some settings. As such,
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52 community health was viewed as a lower priority than other health areas in terms of commissioning
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54 evidence, and related decision making was less restricted by formalised processes and requirements
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56 for evidence. In the absence of these governing structures, change was often described in our data
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3 as driven by individual leaders and/or the desire for political advantage instead of evidence, as in
4
5 this case from Kenya:

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7 *“I haven’t seen anyone talking about an incremental approach [to policy change in*
8 *community health]; I have just seen the type like Kitui [County] where you [leaders]*
9 *decide today: ‘I’m going to do this and I’m going to put this money’.”*

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14 - Community health researcher, Kenya

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19 The most commonly available evidence of impact or benefits of community healthcare investments
20 at national level, understood as programme performance by the majority of respondents, was
21 generated by CTC health workers through routine monitoring and evaluation. However, these
22 routine data were not thought by most to be reliable enough to support decisions; improving the
23 quality of routine CTC data was considered by several respondents to be a prerequisite to its use.
24 This was compounded by the fact that these data are often paper-based (community data are
25 reported in DHIS2 only in Kenya and Ethiopia, and even these are often incomplete), so the process
26 of obtaining performance data from this source may have prohibitive time cost. A sub-national key
27 informant in Mozambique told us of frustrations in trying to get and use routine community health
28 programme data in their work:

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41 - *“The APE [or CHW] is producing data in a useful way but this information I feel that, I*
42 *do not know where it is going because I do not have a report of what happens to*
43 *‘my’ information. I get a bit confused because there is no transparency of where*
44 *[that] information goes. When I consult the Ministry, they say that it is used by the*
45 *programmes, but we at the level of the province we do not feel that”.*

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52 - Policymaker, Mozambique

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57 Few national-level respondents talked about using cost-effectiveness evidence to inform decisions,
58 though in Ethiopia there were several who mentioned aspirations to generate their own cost-
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effectiveness data for projects and new programmes. The limited number who mentioned them stated that cost-effectiveness studies, where available, are not seen by national policymakers as addressing budget constraints, as they do not address real constraints on available financing. This was summarised by a respondent in the Federal Ministry of Health in Ethiopia as follows:

“The results they submitted to us [show] if the implementing second generation is the extension program cost effective? But it needs really further discussion and also policy dialogue also with some stakeholders...it’s more expensive... I think we need more data like for example if we implement second generation extension program all over the country how much cost it will take and the other thing what are the health gains in this amount of investment.”

In contrast, several respondents discussed costing data being used alone without effectiveness data. both to fundraise, though approaches like gap analyses, and to decide whether to expand coverage of the CTC programme.² Despite expanding coverage or ‘extension’ of services being a stated aim of community health programmes in all study countries, no respondents directly stated a need for evidence on equity of community health services. Respondents used ‘coverage’ to address primarily geographical equity considerations, but no direct mention was made of other aspects of equity. Healthcare workers in Ethiopia described the equity-linked challenges in their community work: *“To work on quality, the problem we face is that patients are found in geographically difficult areas...so that makes problems to communicate with us”*.

Among policy makers, there were several mentions of the challenge of allocating a limited budget across many interventions. Trying to achieve allocative efficiency is a potential entry for effectiveness evidence to identify the best investments. However, instead of providing incentives to focus on priority setting, allocation of resources was linked to coordination between funders and

² Expanding coverage was used to mean either adding human resources in existing sites or expanding geography of the programme.

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3 partners to cover the different aspects of comprehensive but unfunded annual plans. In this way,
4 coverage sometimes meant avoiding duplication of efforts in investments rather than increasing
5 access to healthcare services. An implementer in Mozambique stated the challenges of prioritising
6 investment in community health in their planning processes simply: “[Access is prioritised over
7 quality] – and this is linked to resources; if resources are slim and you have to go strengthen at the
8 community level or the health facility level, what do you do?”
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21 The influence of external financing and donor priorities on community health decisions came out
22 strongly in the data. In the study countries, external financing is a majority of the community health
23 financing, yet it was seen as unpredictable and (often) having limited flexibility. A financing agency
24 key informant in Kenya described the role of external financing on community health: “...the
25 disadvantage of being off budget is you are working outside the system. Yeah, it’s a parallel system
26 which is unhelpful in many ways and complicates things. That’s one of the causes why community
27 health care is funding ‘off budget’ mainly and by donor funding”. Each donor and their priorities
28 were described as changeable and contingent on other fiscal planning and calendars – yet they put
29 pressure on national government to adapt to and often adopt their priorities. For many national
30 level key informants, the predominance of external financing brought about a lack of motivation
31 and/or space to drive the agenda in their own health sector.
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46 *“You see like right now say USAID has money and all their money goes to partners...the*
47 *partners need to implement what USAID and government have agreed on; so theoretically*
48 *that is what happens but we know mostly it is pushed by USAID and we follow that and*
49 *because the counties just want the money, they will say: ‘it’s fine let’s go ahead’...”*
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54 - Community health researcher, Kenya
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3 External financing was seen to limit the value of economic evidence to government staff;
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5 governments are desensitised to the full costs of these programmes and in some cases view the
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7 international priorities as 'pre-vetted' for impact. In addition, these programmes are often tightly
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9 earmarked and thus evidence becomes irrelevant until the project funding period is over. Externally
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11 funded NGO-led projects are often required to report programmatic costs, but governments are not
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13 directly trading off these investments against other possible programmes and the focus on
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15 sustainability is limited. Instead, the Ministries of Health are occupied with coordination of
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17 programmes contingent on external funding cycles rather than driving implementation based on
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19 (local) evidence, as described in Mozambique:

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23 *"I see that the Ministry of Health goes with this programme but at the same time they are*
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25 *not preparing themselves for taking over. They still rely on the partners; that is the big issue.*
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27 *This programme depends too much on the partners"*

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30 - Community health implementer, Mozambique
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35 *Evidence use in priority setting for global financing and the role of global agendas on domestic*
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37 *financing*

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39 Globally, there is a stated or 'on paper' agreement about the need for evidence to underpin
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41 decisions, in part to address fairness concerns among those competing for financing. These fairness
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43 concerns were restated in calls by national level respondents for transparency in financing decisions
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45 by global-level financing mechanisms. Despite this stated commitment, political processes and
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47 prioritization exercises precede the evidence-based decisions in several cases. For example, the
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49 initial allocation of funds to HIV/AIDS, tuberculosis, and malaria respectively for each country from
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51 the Global Fund is made according to a formula. Subsequently, community health, as a component
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53 of the health systems strengthening envelope within the country allocation, has to 'fight' for
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55 resources from these disease areas. Similarly, in the Global Financing Facility of the World Bank, the
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57 reasons for selection of the priority countries was opaque, according to this key informant:
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“How the 16 countries were selected, I’m not completely sure...well, partly it was our priority countries because there was a political economy angle to the countries from the donor side, so there’s also these countries themselves who say they want...to be part of it so it will require they speak for themselves.”

- Key informant, global

The biggest global items influencing community health, UHC and the United Nations’ Sustainable Development Goals for health, were mentioned in each of the study countries by at least one respondent despite there being no direct question about it. Of the respondents who mentioned it, all national policy makers or funders of community health, several did not have a clear definition of UHC, potentially limiting its efficacy at motivating financing or policy shifts. However, they stated that pressure from global stakeholders towards UHC is increasing, without clarity what evidence would be needed to measure progress toward this global goal. The perceived relationship of UHC to economic evidence was limited and primarily related to access to financial protection for community members, as stated by a policymaker in Kenya: *“...the Permanent Secretary and the Cabinet Secretary they were really looking at how community strategy can be used to reach people in the coverage of the National Hospital Insurance Fund”* .

The evidence being generated to support these global agendas were perceived by the majority of respondents to focus predominantly on feasibility and impact evaluations of small-scale pilots and programmes in specific locations, sometimes called ‘pilot-itis’. This led respondents to be concerned that the resulting evidence is not relevant to other contexts, even within the same country. In those sites where CTC providers have greater curative responsibilities, particularly Ethiopia, respondents felt that a lot of community health evidence was not relevant to their ‘highly-skilled’ CTC providers, so they tended to call for more ‘local evidence’. Seemingly in contrast, in Kenya national policymakers felt that devolution of decision making to sub-national administrative units at county

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3 level might have led to fragmentation of evidence needs, with demand for research and evaluation
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5 from each county.” .
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8 9 *Quality of care not a priority in assessment of investments in community health*

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11 Quality of CTC care was usually termed ‘performance’ by respondents, and most respondents had
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13 low expectations of quality and performance. By the majority of respondents, CTC care was viewed
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15 as a means of expanding *coverage*, focusing largely on geographic barriers to care (e.g. >5km to a
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17 health facility) rather than social, economic or other barriers to equitable health care. They viewed
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19 this as reasonable given the relatively simple tasks allocated to most CTC providers and their limited
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21 levels of education and formal health training. Community health financing decisions, both domestic
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23 and external, have similarly emphasised the requirement for geographic spread over quality, and
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25 this was also a focus of responses that equated coverage with quality, with no mention of ‘effective
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27 coverage’:
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32 *“We’ve seen that they [the donor] are very much like we want a number of children*
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34 *immunised to be such and such; it’s not about quality its really about numbers and coverage”*

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36 - Community health implementer, Ethiopia
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41 At the national level, decision makers stated that the aspects of quality they would like to have
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43 evidence of included: improving health outcomes (in all countries), data quality (mainly Malawi and
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45 Kenya, with two mentions in Mozambique), ownership by and accountability of services to citizens
46
47 (in all study sites except Ethiopia). Most stated that quality could be improved through better
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49 supervision and policy changes. In Ethiopia, respondents were more likely to mention health
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51 benefits in specific health areas and in some cases to describe meeting system-wide targets as a
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53 proxy for quality (e.g. quotas for percentages of deliveries attended by a skilled birth attendant).
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55 Across countries, evidence for improved quality that would be acceptable to participants included:
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57 changes in reporting rates for routine data on community health services, increased demand for
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3 services at primary healthcare facilities, decreasing burden of disease, and CHW/community
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5 satisfaction. However, many national level key informants acknowledged that quality was difficult
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7 and expensive to measure, as the challenges with routine data meant that understanding quality of
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9 care was perceived to require additional, non-routine data collection. As such, most respondents
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11 also had limited expectations for evaluations to be able to incorporate robust evidence on quality.
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16 The design and integration of quality management structures in the Ministries of Health appeared to
17
18 influence the appetite for economic evidence examining quality or performance. In Ethiopia and
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20 Mozambique, quality was a small part of the job description of technical staff in well-funded disease
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22 departments (e.g. malaria). In contrast, in both Kenya and Malawi, healthcare quality and standards
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24 were managed by a stand-alone department, supporting dedicated staff who promoted the quality
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26 agenda in evidence and decisions across the sector. Yet in these countries, quality management staff
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28 were sometimes marginalised or excluded from decision making due to a lack to technical health
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30 area focus, as shown in this example from Malawi:
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34 *“That was our original plan to have quality improvement persons in each [technical]*
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36 *department; we have one meeting and then the directorate [of quality management] calling*
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38 *them but of course nobody showed up and that is the challenge these departments always*
39
40 *have.” – Programme Implementer, Malawi*
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44 Yet even where there is an independent quality structure, getting that structure to consider the
45
46 ‘extension’ of their mandate to community level could still prove a challenge, as continuing with the
47
48 Malawi example illustrates:
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51 *“They [the directorate of quality management]...initially they were saying – ‘why should we*
52
53 *talk about the community?’ and I said ‘no, then you are joking’.” – Policymaker, Malawi*
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56 The same was true in Kenya, where the national Kenya Quality Model for Health had not been
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58 functionally extended to the community level or even disseminated by the National Department of
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60 Quality and Standards.

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5 *Non-evidentiary influences on decisions*
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7 At the immediate decision level, almost every discussion came back to a combination of limited
8 relevant evidence and limited capacity to use the evidence that exists. This limited capacity was
9 described as leading to a lack of demand for evidence and limited resources dedicated to
10 commissioning or generating evidence, creating a vicious cycle. It also creates a vacuum that
11 advocates of particular approaches or programmes were described as filling with their own
12 priorities, through power and their political savvy. Decision makers try to juggle this influence
13 alongside many other non-evidentiary limitations:
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23 *“...the decision makers, are they able to use comparative cost analyses against different*
24 *programme and make sort of an effectiveness decision, sort of that? And I think the answer*
25 *is no, that they will only use the data for decision making not in a vacuum, there's like a*
26 *million other constraints....”*
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32 - Community health implementer, global
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36 At the national level, the role of power over evidence appeared to be related to the degree of
37 decentralization of the health sector, but this relationship was complex; decentralization was
38 described as allowing space for more levels of ‘politics and power’, while also potentially increasing
39 accountability due to proximity between voters and decision makers, so it did not play out the same
40 way in different locations but was dependent on individuals. Across the countries, contextual
41 factors including varied responsibilities of community health workers, limited formal evidence
42 consideration in most annual work planning procedures, and complex interactions between
43 Ministries of Health and of Finance were seen to influence the likelihood of evidence use in
44 decisions. Similarly, a couple global respondents identified that where programmes were not
45 nationally led (but rather NGO-led), the geographic impacts would be piecemeal and may not be
46 generalisable across the country.
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Finally, interactions (i.e. power) and political viability were key to understanding decisions – both among global funders ‘competing’ for implementation space in priority countries and among national policymakers looking for re-election for themselves or their party, as well as between these global and national- level actors. This links to the negative public opinion that faces national and sub-national decision makers who try to use evidence to justify removing established services, or to disinvesting, as this Ethiopian policymaker described:

“Actually, it is very difficult for communities, for example some strategies being implemented for the last ten or fifteen years, the community is highlight dependent on that so there may be a resistance with the community [to stop funding something].”

Despite this, global (international and bilateral) influence on national priorities was consistently present in the data and continues in large part because it comes with financial support – and expectations of delivering on donor priorities.

Discussion

This multi-country analysis on the use of evidence in community health in LMICs highlights a gap around the use of economic evidence in financing and policy decisions. We find limited use of evidence in decision making for community health and confirm findings from other studies that power and politics have noteworthy influence on priority setting. In explaining why evidence is not used, respondents described a lack of ‘useful evidence’, with available evidence perceived as not generalisable and not responding to the resource limitations on the ground, as well as limitations in capacity to evaluate and apply the evidence meaningfully. Due to a predominance of external financing of CTC programmes, national decision makers are desensitised to the full costs of programmes. Donor priorities often fill the vacuum created by ‘useful evidence’ gaps, and this is reinforced by the unpopularity of disinvestment among constituents. CTC providers continue to be viewed as a means of increasing access to primary healthcare services; increased coverage of health

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3 services are the main benefits that decision makers expect from investment in community health,
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5 with quality (or effective coverage) and equity largely absent from participant-identified evidence
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7 gaps.
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12 Evidence use in community health programming is constrained and influenced by contextual factors
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14 unrelated to the relevance and quality of the evidence. We conceptualise the influences on such
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16 decisions as coming from three levels: micro, meso, and macro as derived from the results; shown in
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18 Figure 1 (Caldwell and Mays, 2012). In the inner circle or micro level, we show the 'ideal' of
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20 evidenced-based policy setting and implementation, including priority setting, evidence assessment,
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22 decision making and financing.
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28 At the meso level, we show the constraints on the ideal micro or decision level. The first constraint is
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30 environmental/epidemiological and service data availability and quality. At the meso level, routine
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32 community data quality is poor and most countries do not have recent sub-national data on
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34 epidemiology and costs of interventions. The second constraint stems from a lack of processes and
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36 procedures, where annual work planning is done primarily related to historical expenditure and
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38 programming. Marginalisation of community health from the 'formal' health system means fewer
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40 formalised procedural requirements for evidence use in decision making and less commissioning of
41
42 such evidence (in comparison with other health areas). Because of these limitations in community
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44 health in many countries, even where evidence exists it is perceived as irrelevant and decision
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46 makers are not encouraged to use it. The third limitation is capacity for evidence selection,
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48 understanding and use in community health decision makers; this is a finding from consistent with
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50 wider studies in LMIC health systems (Stansfield *et al.*, 2006; Wickremasinghe *et al.*, 2016;
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52 McCollum, Taegtmeier, *et al.*, 2018; McCollum, Theobald, *et al.*, 2018; Vanyoro *et al.*, 2019).
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55 Comprehensive planning for community health programmes would involve decision makers
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57 assessing an extensive set of routine data from health information systems that include: census, vital
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3 events, monitoring, public health surveillance, resource tracking, facility-based service statistics, and
4 household surveys (Stansfield *et al.*, 2006). Analysing these data, setting priorities and then aligning
5 priorities to available resources are essential skills (Schneider and Nxumalo, 2017), and indeed in a
6 recent study in Zambia, managers indicated that costing information highlighted priorities for more
7 efficient use of resources in immunisation programming (Feldhaus *et al.*, 2019). However, capacity
8 strengthening around these transferable skills is rarely funded by vertical programmes, the main
9 source of external financing for community health programmes (Conn, Jenkins and Touray, 1996).
10 Increased capacity could increase the appetite for evidence and could be reinforced by involving
11 policymakers in research activities whenever possible and bringing them to the ground to see what
12 'impact' and 'benefits' means to workflows in the health system and livelihoods in the wider
13 communities, potentially overcoming political barriers to evidence use, similar to what Schneider
14 proposes related to community health governance (Schneider, 2010).
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32 Finally, at the macro level or outer circle, decisions are influenced by health sector structures,
33 decision and fiscal spaces, funders and their priorities (*Fiscal space , public finance management and*
34 *health financing: a collaborative agenda*, 2014; Katahoire *et al.*, 2015a, 2015b; Greenhalgh *et al.*,
35 2017; Pfadenhauer *et al.*, 2017; Rajkotia, 2018). At the macro level, global institutions that finance
36 community health programmes are more likely to formalise use of economic evidence. However, as
37 a result of the levels of external financing, priorities of global institutions then have an outside
38 influence on domestic agendas, delinked from local evidence and need in many cases.
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48 Overall, this builds on the work of McCollum *et al.* in the Kenyan context that the lack of high-
49 quality, relevant evidence and limited capacity to use it, compounded by external influences mean
50 the role of power and politics trumps evidence use in many community health programming
51 decisions (McCollum, Taegtmeier, *et al.*, 2018). We add the generalisability of these findings beyond
52 priority setting and into non-devolved systems. In this conceptual framework, the different aspects
53 highlighted at each level illustrate where and how evidence could be leveraged, if available, to
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3 overcome the role of power and politics in decision making to improve targeting of services and
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5 efficiency of the investments in health.
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10 A core tenet of economics is that a decision maker ought to take into account both the benefits of
11 the intervention as well as the resources required to achieve those benefits, then to compare these
12 relative to other potential investments and make a rational choice (Varian, 1992). Our findings that
13 respondents do not perceive current cost-effectiveness studies to reflect their budget constraints
14 suggest that at a minimum, available studies do not accurately reflect the opportunity costs, perhaps
15 due to inappropriate thresholds. Indeed, much critique of various thresholds (and in some cases, any
16 thresholds at all) for cost-effectiveness has been levelled in the literature over the last ten years
17 (Newall, Jit and Hutubessy, 2014; Marseille *et al.*, 2015; Ochalek, Lomas and Claxton, 2015, 2018;
18 Woods *et al.*, 2016). In response to the push for UHC, the last five years have seen the development
19 of a dizzying suite of investment cases, strategies targeting non-traditional donors and innovative
20 approaches to promote consistent, sufficient financing of community health (Singh, Sullivan and
21 Members, 2013; Global Financing Facility, 2016; *Community Health Financing Compendium*, 2017;
22 *Community Health Roadmap*, 2019; Fernandes and Sridhar, 2017; Chou *et al.*, 2018; E&K consulting,
23 2018). In most cases, this represents progress towards integration of community health into
24 broader health systems, though priorities often continue to reflect donor concerns (likely in
25 response to the fact that community health systems are still primarily funded by external financing
26 in most countries). However, it is not clear who is the decision maker that is intended to be
27 influenced by many of these cases and studies. Many of them target the Ministries of Finance and
28 CTC programme leaders are rarely explicitly considered, nor are sub-national decision makers,
29 despite an increasing emphasis on decentralizing decisions in LMIC health systems (Bossert and
30 Mitchell, 2011; Otiso *et al.*, 2017; McCollum, Limato, *et al.*, 2018; Abimbola, Baatiema and Bigdeli,
31 2019). For this powerful evidence to be used and useful, it must consider the decision maker more
32 explicitly and the constraints on their decision, e.g. through budget impact analysis rather than
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3 simply reporting incremental cost-effectiveness ratios against thresholds (Revill *et al.*, 2014; Bilinski
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5 *et al.*, 2017; Robinson *et al.*, 2017; Ochalek, Lomas and Claxton, 2018).
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10 As with any multi-country study and qualitative studies more generally, there are challenges to
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12 generalisability due to the contextual variation. However, the results were generally consistent
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14 enough to suggest actions for researchers and to commissioners and users of economic research
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16 evidence in the community health space. The selection of countries from within the REACHOUT
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18 consortium near the end of that programme period might have increased some of the key
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20 informants' consideration of and awareness of community health issues as part of the wider
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22 healthcare system in comparison to others in the region. The highly variation in degree of
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24 decentralisation of community health decisions could have also created less convergence around
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26 evidence use. In terms of positionality, the collection of data by a non-local researcher might limit
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28 the willingness of some respondents (especially government staff) to be fully frank, and similarly
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30 conducting interviews in English might have limited the nuance available to participants with more
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32 limited language proficiency.
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39 **Conclusions**

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41 In summary, there is ample room to improve and increase evidence use in community health
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43 programming and financing decisions. The goals of the health sector are in improving population
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45 health and health outcomes; additional benefits of improved quality of CTC health worker services
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47 are intrinsically valuable but even more complex to measure - aspects such as trust, motivation,
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49 inclusion, and adherence. Thus, decision makers focus on coverage as the priority benefit that they
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51 would like to see represented in evaluations of community health programmes, yet have limited
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53 resources to commission or undertake evaluations, and limited pressure to use the results. Politics
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55 further constrains decisions primarily in two ways: first, hardware investments such as hospitals,
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57 vehicles and equipment are easy election 'wins' and second, removing established services that are
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3 less (cost-)effective is politically challenging, even if evidence exists. If researchers and community
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5 health decision makers can bridge these gaps between them, the important value of evidence in
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7 improved community health programming and therefore improved population health will begin to
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9 be realised.
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12 However, all potential approaches will have to overcome weaknesses in quality of available data,
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14 limitations in decision maker capacity and concerns about applicability of evidence expressed by
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16 respondents in this study.
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For Peer Review

References

- Abimbola, S., Baatiema, L. and Bigdeli, M. (2019) 'The impacts of decentralization on health system equity, efficiency and resilience: a realist synthesis of the evidence', *Health Policy and Planning*. Oxford University Press (OUP). doi: 10.1093/heapol/czz055.
- Agarwal, S. *et al.* (2019) 'Setting the global research agenda for community health systems: literature and consultative review', *Human Resources for Health*. BioMed Central, 17(1), p. 22. doi: 10.1186/s12960-019-0362-8.
- Ballard, M. *et al.* (2017) *Practitioner Expertise to Optimize Community Health Systems: Harnessing Operational Insight*. doi: 10.13140/RG.2.2.35507.94247.
- Barasa, E. W. *et al.* (2015) 'Setting Healthcare Priorities at the Macro and Meso Levels : A Framework for Evaluation', *Int J Health Policy Manag*, 4(11), pp. 719–732. doi: 10.15171/ijhpm.2015.167.
- Barger, D. *et al.* (2017) 'Multi-country analysis of the cost of community health workers kits and commodities for community-based maternal and newborn care', *Health Policy and Planning*, 32(November), pp. i84–i92. doi: 10.1093/heapol/czx038.
- Bhutta, Z. A. (2017) 'Community-based primary health care: a core strategy for achieving sustainable development goals for health', 7(1), p. 1. doi: 10.7189/jogh.07.010101.
- Bilinski, A. *et al.* (2017) 'When cost-effective interventions are unaffordable: Integrating cost-effectiveness and budget impact in priority setting for global health programs', *PLOS Medicine*. Public Library of Science, 14(10), p. e1002397. doi: 10.1371/journal.pmed.1002397.
- Bossert, T. J. and Mitchell, A. D. (2011) 'Health sector decentralization and local decision-making: Decision space, institutional capacities and accountability in Pakistan', *Social Science & Medicine*. Pergamon, 72(1), pp. 39–48. doi: 10.1016/J.SOCSCIMED.2010.10.019.
- Caldwell, S. and Mays, N. (2012) 'Studying policy implementation using a macro, meso and micro frame analysis: the case of the Collaboration for Leadership in Applied Health Research & Care (CLAHRC) programme nationally and in North West London', *Health Research Policy and Systems*, 10(32). Available at: <http://www.health-policy-systems.com/content/10/1/32> (Accessed: 9 August 2019).

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2019).

Chou, V. B. *et al.* (2017) 'Expanding the population coverage of evidence-based interventions with community health workers to save the lives of mothers and children: an analysis of potential global impact using the Lives Saved Tool (LiST)', *Journal of Global Health*, 7(2). doi:

10.7189/jogh.07.020401.

Chou, V. B. *et al.* (2018) 'Pushing the envelope through the Global Financing Facility: potential impact of mobilizing additional support to scale-up life-saving interventions for women, children and adolescents in 50 high-burden countries', *BMJ Global Health*. *BMJ Specialist Journals*, 3(5), p.

e001126. doi: 10.1136/bmjgh-2018-001126.

Cometto, G. *et al.* (2018) 'Health policy and system support to optimise community health worker programmes: an abridged WHO guideline', *The Lancet Global Health*. Elsevier, 0(0). doi:

10.1016/S2214-109X(18)30482-0.

Community Health Financing Compendium (2017). Available at: www.financingalliance.org

(Accessed: 6 May 2019).

Community Health Roadmap (2019). Available at: <https://www.communityhealthroadmap.org/>

(Accessed: 27 September 2019).

Conn, C. P., Jenkins, P. and Touray, S. O. (1996) 'Strengthening health management: Experience of district teams in The Gambia', *Health Policy and Planning*, 11(1), pp. 64–71. doi:

10.1093/heapol/11.1.64.

Datiko, D. G. *et al.* (2019) 'Community participation and maternal health service utilization: lessons from the health extension programme in rural southern Ethiopia', *J Glob Health Rep*, 3, p. 2019027.

doi: 10.29392/joghr.3.e2019027.

Daviaud, E. *et al.* (2017) 'Costs of implementing integrated community case management (iCCM) in six African countries: implications for sustainability', *Journal of Global Health*, 7(1). doi:

10.7189/jogh.07.010403.

E&K consulting (2018) *The Investment Case for Community Health in Kenya*. Nairobi, Kenya. Available

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at: <https://livinggoods.org/wp-content/uploads/2019/06/Investment-Case-for-Community-Health-in-Kenya.pdf> (Accessed: 15 August 2019).

Feldhaus, I. *et al.* (2019) 'Incorporating costing study results into district and service planning to enhance immunization programme performance: a Zambian case study', *Health Policy and Planning*. Oxford University Press (OUP), 34(5), pp. 327–336. doi: 10.1093/heapol/czz039.

Fernandes, G. and Sridhar, D. (2017) 'World Bank and the Global Financing Facility', *Bmj*, 8, p. j3395. doi: 10.1136/bmj.j3395.

Fiscal space, public finance management and health financing: a collaborative agenda (2014). Montreux, Switzerland.

Freeman, P. A. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 4. child health findings', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010904.

Gale, N. K. *et al.* (2013) 'Using the framework method for the analysis of qualitative data in multi-disciplinary health research', *BMC Medical Research Methodology*. BioMed Central, 13(1), p. 117. doi: 10.1186/1471-2288-13-117.

Global Financing Facility (2016) *Guidance Note : Investment Cases*. Washington, D.C.

Greenhalgh, T. *et al.* (2017) 'Beyond adoption: A new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies', *Journal of Medical Internet Research*, 19(11). doi: 10.2196/jmir.8775.

Javanparast, S. *et al.* (2018) 'Community Health Worker Programs to Improve Healthcare Access and Equity: Are They Only Relevant to Low- and Middle-Income Countries?', *International Journal of Health Policy and Management*, 7(10), pp. 943–954. doi: 10.15171/ijhpm.2018.53.

Jennings, M. C. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 2. maternal health findings', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010902.

Katahoire, A. R. *et al.* (2015a) 'Improving child survival through a district management strengthening

2
3 and community empowerment intervention: early implementation experiences from Uganda', *BMC*
4
5 *Public Health* 2015 15:1. BioMed Central, 15(1), p. 797. doi: 10.1186/s12889-015-2129-z.
6
7 Katahoire, A. R. *et al.* (2015b) 'Improving child survival through a district management strengthening
8 and community empowerment intervention: early implementation experiences from Uganda', *BMC*
9
10 *Public Health* 2015 15:1. BioMed Central, 15(1), p. 797. doi: 10.1186/s12889-015-2129-z.
11
12
13
14 Kea, A. Z. *et al.* (2018) 'Exploring barriers to the use of formal maternal health services and priority
15 areas for action in Sidama zone, southern Ethiopia', *BMC Pregnancy and Childbirth*. BioMed Central,
16
17 18(1), p. 96. doi: 10.1186/s12884-018-1721-5.
18
19
20
21 Kok, M. C. *et al.* (2015) 'Which intervention design factors influence performance of community
22 health workers in low-and middle-income countries? A systematic review', *Health Policy and*
23
24 *Planning*, 30(9), pp. 1207–1227. doi: 10.1093/heapol/czu126.
25
26
27
28 Kok, M. C. *et al.* (2017) 'Performance of community health workers : situating their intermediary
29 position within complex adaptive health systems', *Human Resources for Health*. Human Resources
30
31 for Health, pp. 1–7. doi: 10.1186/s12960-017-0234-z.
32
33
34
35 Kok, M. C. *et al.* (2018) 'Does supportive supervision enhance community health worker motivation?
36 A mixed-methods study in four African countries', *Health Policy and Planning*, (September), pp. 988–
37
38 998. doi: 10.1093/heapol/czy082.
39
40
41
42 Lehmann, U., Twum-Danso, N. A. Y. and Nyoni, J. (2019) 'Towards universal health coverage: what
43 are the system requirements for effective large-scale community health worker programmes?', *BMJ*
44
45 *Global Health*. *BMJ*, 4(Suppl 9), p. e001046. doi: 10.1136/bmjgh-2018-001046.
46
47
48
49 Marseille, E. *et al.* (2015) 'Thresholds for the cost–effectiveness of interventions: alternative
50 approaches', *Bulletin of the World Health Organization*, 93(2), pp. 118–124. doi:
51
52 10.2471/BLT.14.138206.
53
54
55
56 McCollum, R., Limato, R., *et al.* (2018) 'Health system governance following devolution: comparing
57 experiences of decentralisation in Kenya and Indonesia', *BMJ Global Health*. *BMJ Specialist Journals*,
58
59 3(5), p. e000939. doi: 10.1136/bmjgh-2018-000939.
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McCollum, R., Theobald, S., *et al.* (2018) 'Priority setting for health in the context of devolution in Kenya: implications for health equity and community-based primary care', *Health Policy and Planning*, pp. 1–14. doi: 10.1093/heapol/czy043.

McCollum, R., Taegtmeier, M., *et al.* (2018) "'Sometimes it is difficult for us to stand up and change this": an analysis of power within priority-setting for health following devolution in Kenya', *BMC Health Services Research*. BioMed Central, 18(1), p. 906. doi: 10.1186/s12913-018-3706-5.

Newall, A. T., Jit, M. and Hutubessy, R. (2014) 'Are Current Cost-Effectiveness Thresholds for Low- and Middle-Income Countries Useful? Examples from the World of Vaccines', *Pharmacoeconomics*. Springer International Publishing, 32(6), pp. 525–531. doi: 10.1007/s40273-014-0162-x.

Nkonki, L., Tugendhaft, A. and Hofman, K. (2017) 'A systematic review of economic evaluations of CHW interventions aimed at improving child health outcomes', *Human Resources for Health*. Human Resources for Health, 15(19), pp. 1–19. doi: 10.1186/s12960-017-0192-5.

Ochalek, J., Lomas, J. and Claxton, K. (2015) *Cost Per DALY Averted Thresholds for Low-and Middle-Income Countries: Evidence From Cross Country Data*. York, UK. Available at: https://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP122_cost_DALY_LMI_C_threshold.pdf (Accessed: 17 May 2018).

Ochalek, J., Lomas, J. and Claxton, K. (2018) 'Estimating health opportunity costs in low-income and middle-income countries: a novel approach and evidence from cross-country data', *BMJ Global Health*. BMJ Specialist Journals, 3(6), p. e000964. doi: 10.1136/bmjgh-2018-000964.

Otiso, L. *et al.* (2017) 'Decentralising and integrating HIV services in community-based health systems: a qualitative study of perceptions at macro, meso and micro levels of the health system', *BMJ Global Health*. BMJ Specialist Journals, 2(1), p. e000107. doi: 10.1136/bmjgh-2016-000107.

Perry, H. B. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 6. strategies used by effective projects', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010906.

Pfadenhauer, L. M. *et al.* (2017) 'Making sense of complexity in context and implementation: the

Context and Implementation of Complex Interventions (CICI) framework', *Implementation Science* 2017 12:1. BioMed Central, 12(1), p. 21. doi: 10.1186/s13012-017-0552-5.

Phiri, S. C. *et al.* (2017) 'An exploration of facilitators and challenges in the scale-up of a national, public sector community health worker cadre in Zambia: a qualitative study', *Human Resources for Health*. Human Resources for Health, 15(40), pp. 1–9. doi: 10.1186/s12960-017-0214-3.

Rajkotia, Y. (2018) 'Beware of the success cartel: a plea for rational progress in global health.', *BMJ global health*. BMJ Specialist Journals, 3(6), p. e001197. doi: 10.1136/bmjgh-2018-001197.

REACHOUT (2013) *REACHOUT consortium*. Available at: <http://www.reachoutconsortium.org/> (Accessed: 5 June 2017).

Regeru, R. *et al.* (2020) 'Do you trust those data? – A mixed methods study assessing the quality of data reported by Community Health Workers in Kenya and Malawi', *Health Policy and Planning*.

Revill, P. *et al.* (2014) *Using Cost-Effectiveness Thresholds to Determine Value for Money in Low-and Middle-Income Country Healthcare Systems: Are Current International Norms Fit for Purpose?* 98.

York, UK. Available at:

https://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP98_costeffectiveness_thresholds_value_low_middle_income_countries.pdf (Accessed: 21 May 2018).

Robinson, L. A. *et al.* (2017) 'Understanding and improving the one and three times GDP per capita cost-effectiveness thresholds', *Health Policy and Planning*. Narnia, 32(1), pp. 141–145. doi: 10.1093/heapol/czw096.

Sacks, E. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 3. neonatal health findings', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010903.

Schleiff, M. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 5. equity effects for neonates and children', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010905.

Schneider, H. (2010) 'The Governance of National Community Health Worker Programmes in Low-

2
3 and Middle-Income Countries: An Empirically Based Framework of Governance Principles, Purposes
4 and Tasks', *Int Journal of Health Policy Management*, 8(1), pp. 18–27. doi: 10.15171/ijhpm.2018.92.
5
6
7 Schneider, H. *et al.* (2016) 'From Community Health Workers to Community Health Systems : Time to
8 Widen the Horizon ?', *Health Systems & Reform*, 2(2), pp. 112–118. doi:
9
10 10.1080/23288604.2016.1166307.
11
12
13
14 Schneider, H. and Nxumalo, N. (2017) 'Leadership and governance of community health worker
15 programmes at scale: a cross case analysis of provincial implementation in South Africa',
16
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54
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58
59
60

Scott, K. *et al.* (2018) 'What do we know about community-based health worker programs? A
systematic review of existing reviews on community health workers', *Human Resources for Health*
2018 16:1. BioMed Central, 16(1), p. 39. doi: 10.1186/s12960-018-0304-x.

Scott, K., George, A. S. and Ved, R. R. (2019) 'Taking stock of 10 years of published research on the
ASHA programme: examining India's national community health worker programme from a health
systems perspective', *Health Research Policy and Systems*, 17(29). doi: 10.1186/s12961-019-0427-0.

Silva, R. *et al.* (2016) 'Can community health workers report accurately on births and deaths? Results
of field assessments in Ethiopia, Malawi and Mali', *PLoS ONE*, 11(1). doi: 10.1371/journal.pone.

Singh, P., Sullivan, S. and Members, T. F. (2013) *One Million Community Health Workers: Technical
Task Force Report*. New York, NY, USA. Available at:
http://1millionhealthworkers.org/files/2013/01/1mCHW_TechnicalTaskForceReport.pdf (Accessed:
15 August 2019).

Stansfield, S. K. *et al.* (2006) 'Information to Improve Decision Making for Health', in Jamison, D.,
Breman, J., and Measham, A. (eds) *Disease Control Priorities in Developing Countries, 2nd edition*.
The International Bank for Reconstruction and Development / The World Bank. Available at:
<https://www.ncbi.nlm.nih.gov/books/NBK11731/>.

Taylor, C., Griffiths, F. and Lilford, R. (2017) 'Affordability of comprehensive community health
worker programmes in rural sub-Saharan Africa', *BMJ Global Health*, 2(3), p. e000391. doi:

10.1136/bmjgh-2017-000391.

Theobald, S. *et al.* (2014) 'Close to community health providers post 2015: Realising their role in responsive health systems and addressing gendered social determinants of health', *BMC Proceedings*. BioMed Central, 9(Suppl 10), p. S8. doi: 10.1186/1753-6561-9-S10-S8.

Tseng, Y.-H. *et al.* (2019) 'Integrating community health workers into the formal health system to improve performance: a qualitative study on the role of on-site supervision in the South African programme.', *BMJ Open*. British Medical Journal Publishing Group, 9(2), p. e022186. doi: 10.1136/bmjopen-2018-022186.

Vanyoro, K. P. *et al.* (2019) 'Local ownership of health policy and systems research in low-income and middle-income countries: a missing element in the uptake debate', *BMJ Global Health*, 4(4), p. e001523. doi: 10.1136/bmjgh-2019-001523.

Varian, H. R. (1992) *Microeconomic Analysis*. Third. W. W. Norton & Company.

Vaughan, K. *et al.* (2015) 'Costs and cost-effectiveness of community health workers: evidence from a literature review', *Human Resources for Health*. Human Resources for Health, 13(1), p. 71. doi: 10.1186/s12960-015-0070-y.

Wang, H. *et al.* (2016) *Ethiopia Health Extension Program: an institutionalized community approach for universal health coverage*. Washington, D.C.: The World Bank. doi: 10.1596/978-1-4648-0815-9.

Wickremasinghe, D. *et al.* (2016) 'District decision-making for health in low-income settings: a systematic literature review', *Health Policy and Planning*, ii, pp. 12–24. doi: 10.1093/heapol/czv124.

Woods, B. *et al.* (2016) 'Country-Level Cost-Effectiveness Thresholds: : Initial Estimates and the Need for Further Research', *Value in Health*, pp. 929–935. doi: 10.1016/j.jval.2016.02.017.

Yourkavitch, J. *et al.* (2016) 'How do we know? An assessment of integrated community case management data quality in four districts of Malawi', *Health Policy and Planning*, pp. 1–10. doi: 10.1093/heapol/czw047.

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Title: How do decision makers use evidence in community health policy and financing decisions ~~in~~
~~Africa~~? A ~~multi-country~~ qualitative study and conceptual framework from four African countries

Abstract

Various investments could help countries deliver on the universal health coverage (UHC) goals set by the global community; community health is ~~viewed as~~ a pillar of many national strategies toward UHC. Yet despite resource mobilisation toward this end, little is known about the potential costs and value of these investments, as well as ~~when and~~ how evidence on the same would be used in ~~community health~~-related decisions. This qualitative study was conducted to understand the use of evidence in policy and financing decisions for large-scale community health programmes in low- and middle-income countries (LMICs). Through key informant interviews with 43 respondents in countries with community health embedded in national UHC strategies (Ethiopia, Kenya, Malawi, Mozambique) and at global institutions, we investigated evidence use in community health financing and policy decision making, as well as evidentiary needs related to community health data for decision making. We found that evidence use is limited at all levels, in part due to a perceived lack of high-quality, relevant evidence. This perception stems from two main areas: first, desire for local evidence that reflects the context; second, much existing economic evidence does not deal with what decision makers value when it comes to community health systems – that is, coverage and (to a lesser extent) quality. Beyond the evidence gap, there is limited capacity to assess and use the evidence. Elected officials also face political challenges to disinvestment as well as structural obstacles to evidence use, including the outsized influence of donor priorities. Evaluation data must to speak to decision maker interests and constraints more directly, alongside financiers of community health providing explicit guidance and support on the role of evidence use in decision making, empowering national decision makers. Improved data quality, increased relevance of evidence and capacity for evidence use can drive Opportunities will then exist for improved efficiency of financing and evidence-based policymaking ~~for the UHC agenda~~.

Introduction

Well-resourced close-to-community (CTC) health workers can deliver high-quality care; there is extensive, robust, project- and trial-based evidence for this across a range of settings and disease areas, as shown in a set of recent reviews of community health programmes (Chou *et al.*, 2017; Freeman *et al.*, 2017; Jennings *et al.*, 2017; Perry *et al.*, 2017; Sacks *et al.*, 2017; Schleiff *et al.*, 2017; Scott *et al.*, 2018). Armed with this evidence, extending access to primary healthcare through CTC cadres with an aim of universal health coverage (UHC) has long been used as an approach and lately become a priority in many countries (Wang *et al.*, 2016; Bhutta, 2017; Javanparast *et al.*, 2018). The World Health Organisation has supported operationalisation of extending access in this way through the development of guidelines for national CTC programmes (Cometto *et al.*, 2018). Yet in many health systems, community health remains perceived as an extension of the ‘formal’ system rather than a core, integrated service delivery platform (Theobald *et al.*, 2014; Schneider *et al.*, 2016; Tseng *et al.*, 2019).

Economic evidence should play a predominant role in the integration of community health into wider health systems, due to the need for trade-offs between different health investments and competition for limited resources. There is a small but growing body of economic evidence on community health programmes, recently presented in a systematic review by Nkonki *et al.*; like the evidence on quality described above, the authors state that most evidence is “from small scale and vertical programmes” (Nkonki, Tugendhaft and Hofman, 2017). Once community health programmes start operating at scale, quality of care and performance of CTC providers do not always live up to their potential (Kok *et al.*, 2015; Silva *et al.*, 2016; Yourkavitch *et al.*, 2016; Ballard *et al.*, 2017; Phiri *et al.*, 2017; Lehmann, Twum-Danso and Nyoni, 2019). The limited economic evaluations of the quality of large-scale CTC programmes generates uncertainty about the value of this investment; studies on the costs of large-scale CTC programmes (Vaughan *et al.*, 2015; Barger *et al.*, 2017; Daviaud *et al.*, 2017; Nkonki, Tugendhaft and Hofman, 2017; Taylor, Griffiths and Lilford,

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2017) have rarely incorporated data on quality of care. In assessing outcomes, incorporating quality into economic evaluations of CTC programmes is challenging because of difficulty in defining quality of care for CTC interventions and the complex causal pathways between CTC quality of care measures and health outcomes. Poor data quality affects measurement across both costs and outcomes (Yourkavitch *et al.*, 2016; Regeru *et al.*, 2020).

As an extension or even marginalised aspect of the healthcare system, community health decision making does not benefit from the many formal procedures for generating and using evidence that have been developed in the wider health sector. For example, there is a gap in community-focused financing literature; Scott *et al.* showed that out of 122 publications on the ASHA programme in India between 2005 – 2016, only five dealt with financing (Scott, George and Ved, 2019). Where it exists, community financing literature often focuses more on community-based micro insurance schemes rather than macro financing of community health programmes despite a predominance of external financing in this space (McCollum, Taegtmeier, *et al.*, 2018; Agarwal *et al.*, 2019). Because potential users of evidence often perceive community-level care as ‘free’ to the system, this limits commissioning of economic evidence at local and national levels. Similarly, in the wider sector, the broad literature on proceduralism focuses on formalised processes for evidence use, consultation, transparency (Barasa *et al.*, 2015) – yet in community health as a sub-sector, these processes are not well established. As such, even when evidence about community health interventions is available, this evidence may be underutilised in decision making. In the absence of sufficient procedures, (the largely external) investment in community health seems to be driven by ideology and global movements over evidence. A closer look specifically at community health decisions within the health sector is imperative given the relative marginalisation of community health as an extension of the health system and its reliance on external financing in many LMICs (Theobald *et al.*, 2014; Javanparast *et al.*, 2018; Tseng *et al.*, 2019).

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This multi-country qualitative study was designed to understand the role of evidence in how decisions are made for community health financing and policy at national and global levels. We focus our study in four countries (Ethiopia, Kenya, Malawi, Mozambique) that have large-scale public sector community health programmes that remain highly dependent on external financing. In key informant interviews with national and global funders, policymakers and researchers, we set out to understand what evidence is used and by whom, and when and what additional evidence could improve the efficiency of community health decision making in settings where CTC providers are an integral part of the health system.

Methods

We used a qualitative cross-sectional approach to understand the use of economic evaluation evidence in community health priority setting and financing. Qualitative methods were utilised to allow for an understanding of the process (how things are currently working), stakeholders (who is involved), and wider decision space (role of the health system and context). Given the limited number of individuals involved in policy and financing decisions and their seniority, key informant interviews were selected as the most appropriate methodology to extract relevant information. Data were collected between November 2017 – November 2018.

Study sites and sampling

43 key informant interviews were conducted with purposively sampled decision makers involved in community health policy and financing decisions at national and global level based on the sampling frame shown in Table 1. We selected countries with national community health programmes in Africa that were part of the REACHOUT consortium: Kenya, Ethiopia, Malawi,

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3 Mozambique¹(REACHOUT, 2013). Respondents included national and sub-national Ministry of
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5 Health staff involved with community health financing and/or programming, and implementers of
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7 large-scale community health programmes. The global interviews included institutional financiers of
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9 community health, community health researchers and normative agencies. These respondents were
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11 selected to represent those making community health policy and financing decisions in the selected
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13 REACHOUT countries, generating evidence to inform the decisions, and those affected by the
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15 decisions through involvement in translating policy to practice.
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21 *Data collection, management and analysis*

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23 Interviews were guided by a semi-structured topic guide, which was piloted in Kenya before use
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25 (available in Supplementary File 2). We asked respondents questions about their community health
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27 experience; about domestic and external financing for community health in their setting; and, using
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29 quality improvement as a case example of a project, about evidence needs, evidence use, and
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31 financing mechanisms related to decision making and the (community health) decision space.
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37 In all cases except two in Ethiopia and two in Mozambique, interviews were conducted in English by
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39 the corresponding author. In those four interviews, local researchers with prior experience in
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41 qualitative methods and community health were trained in the interview content and objectives and
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43 conducted the interviews.
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49 Thirty-nine of 43 total interviews were digitally recorded and transcribed by local researchers in each
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51 country (where they were conducted in another language, they were transcribed in the local
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53 language and then translated); the remaining respondents asked not to be recorded and interviewer
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57 ¹ REACHOUT is a multi-country research consortium focused on the quality of community health that
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59 worked from 2014-2019 in six countries (Ethiopia, Kenya, Malawi, Mozambique in Africa; Bangladesh
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and Indonesia in Asia). For this piece of work, we focused on the African countries. For details on the
community health programmes in the four study countries, see Supplementary File 1.

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3 notes were included in lieu of a transcript. Code frame development was done deductively
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5 according to the objectives of the study: understanding decision maker perspectives on quality and
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7 understanding the use of evidence in decision making for community health financing and
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9 programming. Additional codes (particularly, detailed information around financing and economic
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11 evidence) were added inductively in the course of the analysis as they had arisen due to the open
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13 questioning style used in the interviews (Gale *et al.*, 2013); for full code frame see Supplementary
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15 File 3. Analysis was assisted by NVivo11 software and for each theme, relevant quotes were
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17 examined to generate a draft narrative. A thematic framework approach was used for the analysis
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19 (Gale *et al.*, 2013). Given there was a single lead researcher conducting interviews and coding,
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21 quality assurance was done in the following ways: 1) review of selected transcripts by senior
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23 authors; 2) coding workshop with colleagues where multiple individuals coded transcripts to ensure
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25 inter-coder reliability; 3) discussions with and feedback from research partners/co-authors in each
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27 country on emerging themes. For non-recorded interviews, the notes were included as transcripts
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29 and coded in the same way as verbatim transcriptions described above; direct quotes from these
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31 interviews were not included due to risk of misrepresentation of exact wording.
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39 **Results**

40 *Respondent characteristics*

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42 A total of 43 key informant interviews were conducted with purposively sampled respondents
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44 working in community health at national and global level. In total, these were: Global (N=11),
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46 Ethiopia (N=10), Kenya (N=7), Malawi (N=6) and Mozambique (N=6); descriptions of respondents
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48 shown in Table 2. There was a focus on policy and financing decision makers, with the latter being
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50 over-represented at global level due to the predominance of external financing in this area.
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52 Implementers and health workers represent the individuals who translate decisions into
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54 practice/action and have a perception of how and if their evidence gets used in this process. Of the
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56 researchers, who represented a smaller proportion of the total sample, two were economists and
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3 the majority were working more broadly on implementation research, governance, feasibility and
4 process evaluations in the CTC space.
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7 Institutions represented at the global level included: UNICEF, World Health Organization; Global
8 Fund to Fight AIDS, Tuberculosis and Malaria; Global Financing Facility for Women, Children and
9 Adolescents; Last Mile Health; Financing Alliance for Health; United Nations' Special Envoy for
10 Health; Community Health Impact Coalition; United States Agency for International Development;
11 South Africa Medical Research Council; John Snow International representing Maternal and Child
12 Health Integrated Program; out of this group, implementers are those organisations that deliver
13 community health programmes in country. Institutions represented at country level are national and
14 sub-national government staff as well as NGOs and International Organisations as relevant to the
15 community health planning, financing and delivery in each context.
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30 *Evidence use in national level decisions for publicly funded programmes*

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32 The reported use of economic evidence in health policy and financing decisions varied by country,
33 but was generally informal and motivated by individuals instead of systems. Ethiopia demonstrated
34 the most formalised processes and procedures for use of economic evaluation in the health sector at
35 the national level, with a separate department inside the Federal Ministry of Health's Planning
36 Directorate responsible for using and assessing economic evidence (particularly finance data from
37 National Health Accounts and evaluation data from Public Health Research Institute). No study
38 countries systematically required the use of economic evidence in decision making for as a formal
39 stage in public policy or financing decisions for community health. Community health systems were,
40 in the views of most respondents, an extension of the health system rather than a core part,
41 evidenced in part by the title of CTC workers as 'extension workers' in some settings. As such,
42 community health was viewed as a lower priority than other health areas in terms of commissioning
43 evidence, and related decision making was less restricted by formalised processes and requirements
44 for evidence. In the absence of these governing structures, change was often described in our data
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3 as driven by individual leaders and/or the desire for political advantage instead of evidence, as in
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5 this case from Kenya:

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7 *“I haven’t seen anyone talking about an incremental approach [to policy change in*
8 *community health]; I have just seen the type like Kitui [County] where you [leaders]*
9 *decide today: ‘I’m going to do this and I’m going to put this money’.”*

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14 - Community health researcher, Kenya
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19 The most commonly available evidence of impact or benefits of community healthcare investments
20 at national level, understood as programme performance by the majority of respondents, was
21 generated by CTC health workers through routine monitoring and evaluation. However, these
22 routine data were not thought by most to be reliable enough to support decisions; improving the
23 quality of routine CTC data was considered by several respondents to be a prerequisite to its use.
24 This was compounded by the fact that these data are often paper-based (community data are
25 reported in DHIS2 only in Kenya and Ethiopia, and even these are often incomplete), so the process
26 of obtaining performance data from this source may have prohibitive time cost. A sub-national key
27 informant in Mozambique told us of frustrations in trying to get and use routine community health
28 programme data in their work:
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41 - *“The APE [or CHW] is producing data in a useful way but this information I feel that, I*
42 *do not know where it is going because I do not have a report of what happens to*
43 *‘my’ information. I get a bit confused because there is no transparency of where*
44 *[that] information goes. When I consult the Ministry, they say that it is used by the*
45 *programmes, but we at the level of the province we do not feel that”.*

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52 - Policymaker, Mozambique
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57 Few national-level respondents talked about using cost-effectiveness evidence to inform decisions,
58 though in Ethiopia there were several who mentioned aspirations to generate their own cost-
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effectiveness data for projects and new programmes. The limited number who mentioned them stated that cost-effectiveness studies, where available, are not seen by national policymakers as addressing budget constraints, as they do not address real constraints on available financing. This was summarised by a respondent in the Federal Ministry of Health in Ethiopia as follows:

“The results they submitted to us [show] if the implementing second generation is the extension program cost effective? But it needs really further discussion and also policy dialogue also with some stakeholders...it’s more expensive... I think we need more data like for example if we implement second generation extension program all over the country how much cost it will take and the other thing what are the health gains in this amount of investment.”

In contrast, several respondents discussed costing data being used alone without effectiveness data, both to fundraise, though approaches like gap analyses, and to decide whether to expand coverage of the CTC programme.² Despite expanding coverage or ‘extension’ of services being a stated aim of community health programmes in all study countries, no respondents directly stated a need for evidence on equity of community health services. Respondents used ‘coverage’ to address primarily geographical equity considerations, but no direct mention was made of other aspects of equity. Healthcare workers in Ethiopia described the equity-linked challenges in their community work: “To work on quality, the problem we face is that patients are found in geographically difficult areas...so that makes problems to communicate with us”.

Among policy makers, there were several mentions of the challenge –and the challenges of allocation-allocating a limited budget across many interventions-with a limited budget. Trying to achieve allocative efficiency is a potential entry for effectiveness evidence to identify the best investments. However, instead of providing incentives to focus on priority setting, allocation of

² Expanding coverage was used to mean either adding human resources in existing sites or expanding geography of the programme.

resources was linked to coordination between funders and partners to cover the different aspects of comprehensive but unfunded annual plans. In this way, coverage sometimes meant avoiding duplication of efforts in investments rather than –increasing access to healthcare services. An implementer in Mozambique stated the challenges of prioritising investment in community health in their planning processes simply: “[Access is prioritised over quality] – and this is linked to resources; if resources are slim and you have to go strengthen at the community level or the health facility level, what do you do?”

No respondents directly stated a need for evidence on equity of community health services, despite ‘extension’ of services being discussed as a means to reach the unreached in all countries. However, coverage was understood to address some (primarily geographical) equity considerations.

Evidence use in funding applications

The influence of external financing and donor priorities on community health decisions came out strongly in the data. In the study countries, external financing is a majority of the community health financing, yet it was seen as unpredictable and (often) having limited flexibility. A financing agency key informant in Kenya described the role of external financing on community health: “...the disadvantage of being off budget is you are working outside the system. Yeah, it’s a parallel system which is unhelpful in many ways and complicates things. That’s one of the causes why community health care is funding ‘off budget’ mainly and by donor funding”. Each donor and their priorities were described as changeable and contingent on other fiscal planning and calendars – yet they put pressure on national government to adapt to and often adopt their priorities. For many national level key informants, the predominance of external financing brought about a lack of motivation and/or space to drive the agenda in their own health sector.

“You see like right now say USAID has money and all their money goes to partners...the partners need to implement what USAID and government have agreed on; so theoretically

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3 *that is what happens but we know mostly it is pushed by USAID and we follow that and*
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5 *because the counties just want the money, they will say: 'it's fine let's go ahead'..."*

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8 - Community health researcher, Kenya
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12 External financing was seen to limit the value of economic evidence to government staff;
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14 governments are desensitised to the full costs of these programmes and in some cases view the
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16 international priorities as 'pre-vetted' for impact. In addition, these programmes are often tightly
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18 earmarked and thus evidence becomes irrelevant until the project funding period is over. Externally
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20 funded NGO-led projects are often required to report programmatic costs, but governments are not
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22 directly trading off these investments against other possible programmes and the focus on
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24 sustainability is limited. Instead, the Ministries of Health are occupied with coordination of
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26 programmes contingent on external funding cycles rather than driving implementation based on
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28 (local) evidence, as described in Mozambique:
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32 *"I see that the Ministry of Health goes with this programme but at the same time they are*
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34 *not preparing themselves for taking over. They still rely on the partners; that is the big issue.*
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36 *This programme depends too much on the partners"*

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39 - Community health implementer, Mozambique
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44 *Evidence use in priority setting for global financing and the role of global agendas on domestic*
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46 *financing*

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48 Globally, there is a stated or 'on paper' agreement about the need for evidence to underpin
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50 decisions, in part to address fairness concerns among those competing for financing. These fairness
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52 concerns were restated in calls by national level respondents for transparency in financing decisions
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54 by global-level financing mechanisms. Despite this stated commitment, political processes and
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56 prioritization exercises precede the evidence-based decisions in several cases. For example, the
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58 initial allocation of funds to HIV/AIDS, tuberculosis, and malaria respectively for each country from
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the Global Fund is made according to a formula. Subsequently, community health, as a component of the health systems strengthening envelope within the country allocation, has to 'fight' for resources from these disease areas. Similarly, in the Global Financing Facility of the World Bank, the reasons for selection of the priority countries was opaque, according to this key informant:

"How the 16 countries were selected, I'm not completely sure...well, partly it was our priority countries because there was a political economy angle to the countries from the donor side, so there's also these countries themselves who say they want...to be part of it so it will require they speak for themselves."

- Key informant, global

The biggest global items influencing community health, UHC and the United Nations' Sustainable Development Goals for health, were mentioned in each of the study countries by at least one respondent despite there being no direct question about it. Of the respondents who mentioned it, all national policy makers of funders of community health, several did not have a clear definition of UHC, potentially limiting its efficacy at motivating financing or policy shifts. However, they stated that pressure from global stakeholders towards UHC is increasing, without clarity what evidence would be needed to measure progress toward this global goal. The perceived relationship of UHC to economic evidence was limited and primarily related to access to financial protection for community members, as stated by a policymaker in Kenya: *"...the Permanent Secretary and the Cabinet Secretary they were really looking at how community strategy can be used to reach people in the coverage of the National Hospital Insurance Fund"* .

The evidence being generated to support these global agendas were perceived by the majority of respondents to focus predominantly on feasibility and impact evaluations of small-scale pilots and programmes in specific locations, sometimes called 'pilot-itis'. This led respondents to be concerned that the resulting evidence is not relevant to other contexts, even within the same country. In those

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3 sites where CTC providers have greater curative responsibilities, particularly Ethiopia, respondents
4 felt that a lot of community health evidence was not relevant to their 'highly-skilled' CTC providers,
5 so they tended to call for more 'local evidence'. Seemingly in contrast, in Kenya national
6 policymakers felt that devolution of decision making to sub-national administrative units at county
7 level might have led to fragmentation of evidence needs, with demand for research and evaluation
8 from each county." .
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19 *Quality of care not a priority in assessment of investments in community health*

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21 Quality of CTC care was usually termed 'performance' by respondents, and most respondents had
22 low expectations of quality and performance. By the majority of respondents, CTC care was viewed
23 as a means of expanding *coverage*, focusing largely on geographic barriers to care (e.g. >5km to a
24 health facility) rather than social, economic or other barriers to equitable health care. They viewed
25 this as reasonable given the relatively simple tasks allocated to most CTC providers and their limited
26 levels of education and formal health training. Community health financing decisions, both domestic
27 and external, have similarly emphasised the requirement for geographic spread over quality, and
28 this was also a focus of responses that equated coverage with quality, with no mention of 'effective
29 coverage':
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41 *"We've seen that they [the donor] are very much like we want a number of children*
42 *immunised to be such and such; it's not about quality its really about numbers and coverage"*
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45 - Community health implementer, Ethiopia
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50 At the national level, decision makers stated that the aspects of quality they would like to have
51 evidence of included: improving health outcomes (in all countries), data quality (mainly Malawi and
52 Kenya, with two mentions in Mozambique), ownership by and accountability of services to citizens
53 (in all study sites except Ethiopia). Most stated that quality could be improved through better
54 supervision and policy changes. In Ethiopia, respondents were more likely to mention health
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3 benefits in specific health areas and in some cases to describe meeting system-wide targets as a
4 proxy for quality (e.g. quotas for percentages of deliveries attended by a skilled birth attendant).
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6 Across countries, evidence for improved quality that would be acceptable to participants included:
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8 changes in reporting rates for routine data on community health services, increased demand for
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10 services at primary healthcare facilities, decreasing burden of disease, and CHW/community
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12 satisfaction. However, many national level key informants acknowledged that quality was difficult
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14 and expensive to measure, as the challenges with routine data meant that understanding quality of
15
16 care was perceived to require additional, non-routine data collection. As such, most respondents
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18 also had limited expectations for evaluations to be able to incorporate robust evidence on quality.
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26 The design and integration of quality management structures in the Ministries of Health appeared to
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28 influence the appetite for economic evidence examining quality or performance. In Ethiopia and
29
30 Mozambique, quality was a small part of the job description of technical staff in well-funded disease
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32 departments (e.g. malaria). In contrast, in both Kenya and Malawi, healthcare quality and standards
33
34 were managed by a stand-alone department, supporting dedicated staff who promoted the quality
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36 agenda in evidence and decisions across the sector. Yet in these countries, quality management staff
37
38 were sometimes marginalised or excluded from decision making due to a lack to technical health
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40 area focus, as shown in this example from Malawi:
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43 *“That was our original plan to have quality improvement persons in each [technical]*
44 *department; we have one meeting and then the directorate [of quality management] calling*
45 *them but of course nobody showed up and that is the challenge these departments always*
46 *have.” – Programme Implementer, Malawi*
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52 Yet even where there is an independent quality structure, getting that structure to consider the
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54 ‘extension’ of their mandate to community level could still prove a challenge, as continuing with the
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56 Malawi example illustrates:
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“They [the directorate of quality management]...initially they were saying – ‘why should we talk about the community?’ and I said ‘no, then you are joking’.” – Policymaker, Malawi

The same was true in Kenya, where the national Kenya Quality Model for Health had not been functionally extended to the community level or even disseminated by the National Department of Quality and Standards.

Non-evidentiary influences on decisions

At the immediate decision level, almost every discussion came back to a combination of limited relevant evidence and limited capacity to use the evidence that exists. This limited capacity was described as leading to a lack of demand for evidence and limited resources dedicated to commissioning or generating evidence, creating a vicious cycle. It also creates a vacuum that advocates of particular approaches or programmes were described as filling with their own priorities, through power and their political savvy. Decision makers try to juggle this influence alongside many other non-evidentiary limitations:

“...the decision makers, are they able to use comparative cost analyses against different programme and make sort of an effectiveness decision, sort of that? And I think the answer is no, that they will only use the data for decision making not in a vacuum, there's like a million other constraints....”

- Community health implementer, global

At the national level, the role of power over evidence appeared to be related to the degree of decentralization of the health sector, but this relationship was complex; decentralization was described as allowing space for more levels of ‘politics and power’, while also potentially increasing accountability due to proximity between voters and decision makers, so it did not play out the same way in different locations but was dependent on individuals. Across the countries, contextual factors including varied responsibilities of community health workers, limited formal evidence

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consideration in most annual work planning procedures, and complex interactions between Ministries of Health and of Finance were seen to influence the likelihood of evidence use in decisions. Similarly, a couple global respondents identified that where programmes were not nationally led (but rather NGO-led), the geographic impacts would be piecemeal and may not be generalisable across the country.

Finally, interactions (i.e. power) and political viability were key to understanding decisions – both among global funders ‘competing’ for implementation space in priority countries and among national policymakers looking for re-election for themselves or their party, as well as between these global and national- level actors. This links to the negative public opinion that faces national and sub-national decision makers who try to use evidence to justify removing established services, or to disinvesting, as this Ethiopian policymaker described:

“Actually, it is very difficult for communities, for example some strategies being implemented for the last ten or fifteen years, the community is highlight dependent on that so there may be a resistance with the community [to stop funding something].”

Despite this, global (international and bilateral) influence on national priorities was consistently present in the data and continues in large part because it comes with financial support – and expectations of delivering on donor priorities.

Discussion

This multi-country analysis on the use of evidence in community health in LMICs highlights a gap around the use of economic evidence in financing and policy decisions. We find limited use of evidence in decision making for community health and confirm findings from other studies that power and politics have noteworthy influence on priority setting. In explaining why evidence is not used, respondents described a lack of ‘useful evidence’, with available evidence perceived as not generalisable and not responding to the resource limitations on the ground, as well as limitations in

2
3 capacity to evaluate and apply the evidence meaningfully. Due to a predominance of external
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5 financing of CTC programmes, national decision makers are desensitised to the full costs of
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7 programmes. Donor priorities often fill the vacuum created by 'useful evidence' gaps, and this is
8
9 reinforced by the unpopularity of disinvestment among constituents. CTC providers continue to be
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11 viewed as a means of increasing access to primary healthcare services; increased coverage of health
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13 services are the main benefits that decision makers expect from investment in community health,
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15 with quality (or effective coverage) and equity largely absent from participant-identified evidence
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17 gaps.
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23 Evidence use in community health programming is constrained and influenced by contextual factors
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25 unrelated to the relevance and quality of the evidence. We conceptualise the influences on such
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27 decisions as coming from three levels: micro, meso, and macro as derived from the results; shown in
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29 Figure 1 (Caldwell and Mays, 2012). In the inner circle or micro level, we show the 'ideal' of
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31 evidenced-based policy setting and implementation, including priority setting, evidence assessment,
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33 decision making and financing.
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38 At the meso level, we show the constraints on the ideal micro or decision level. The first constraint is
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40 environmental/epidemiological and service data availability and quality. At the meso level, routine
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42 community data quality is poor and most countries do not have recent sub-national data on
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44 epidemiology and costs of interventions. The second constraint stems from a lack of processes and
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46 procedures, where annual work planning is done primarily related to historical expenditure and
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48 programming. Marginalisation of community health from the 'formal' health system means fewer
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50 formalised procedural requirements for evidence use in decision making and less commissioning of
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52 such evidence (in comparison with other health areas). Because of these limitations in community
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54 health in many countries, even where evidence exists it is perceived as irrelevant and decision
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56 makers are not encouraged to use it. The third limitation is capacity for evidence selection,
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2
3 understanding and use in community health decision makers; this is a finding from consistent with
4 wider studies in LMIC health systems (Stansfield *et al.*, 2006; Wickremasinghe *et al.*, 2016;
5 McCollum, Taegtmeier, *et al.*, 2018; McCollum, Theobald, *et al.*, 2018; Vanyoro *et al.*, 2019).
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7 Comprehensive planning for community health programmes would involve decision makers
8 assessing an extensive set of routine data from health information systems that include: census, vital
9 events, monitoring, public health surveillance, resource tracking, facility-based service statistics, and
10 household surveys (Stansfield *et al.*, 2006). Analysing these data, setting priorities and then aligning
11 priorities to available resources are essential skills (Schneider and Nxumalo, 2017), and indeed in a
12 recent study in Zambia, managers indicated that costing information highlighted priorities for more
13 efficient use of resources in immunisation programming (Feldhaus *et al.*, 2019). However, capacity
14 strengthening around these transferable skills is rarely funded by vertical programmes, the main
15 source of external financing for community health programmes (Conn, Jenkins and Touray, 1996).
16 Increased capacity could increase the appetite for evidence and could be reinforced by involving
17 policymakers in research activities whenever possible and bringing them to the ground to see what
18 'impact' and 'benefits' means to workflows in the health system and livelihoods in the wider
19 communities, potentially overcoming political barriers to evidence use, similar to what Schneider
20 proposes related to community health governance (Schneider, 2010).
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43 Finally, at the macro level or outer circle, decisions are influenced by health sector structures,
44 decision and fiscal spaces, funders and their priorities (*Fiscal space, public finance management and*
45 *health financing: a collaborative agenda*, 2014; Katahoire *et al.*, 2015a, 2015b; Greenhalgh *et al.*,
46 2017; Pfadenhauer *et al.*, 2017; Rajkotia, 2018). At the macro level, global institutions that finance
47 community health programmes are more likely to formalise use of economic evidence. However, as
48 a result of the levels of external financing, priorities of global institutions then have an outside
49 influence on domestic agendas, delinked from local evidence and need in many cases.
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59 Overall, this builds on the work of McCollum *et al.* in the Kenyan context that the lack of high-
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quality, relevant evidence and limited capacity to use it, compounded by external influences mean the role of power and politics trumps evidence use in many community health programming decisions (McCollum, Taegtmeier, *et al.*, 2018). We add the generalisability of these findings beyond priority setting and into non-devolved systems. In this conceptual framework, the different aspects highlighted at each level illustrate where and how evidence could be leveraged, if available, to overcome the role of power and politics in decision making to improve targeting of services and efficiency of the investments in health.

A core tenet of economics is that a decision maker ought to take into account both the benefits of the intervention as well as the resources required to achieve those benefits, then to compare these relative to other potential investments and make a rational choice (Varian, 1992). Our findings that respondents do not perceive current cost-effectiveness studies to reflect their budget constraints suggest that at a minimum, available studies do not accurately reflect the opportunity costs, perhaps due to inappropriate thresholds. Indeed, much critique of various thresholds (and in some cases, any thresholds at all) for cost-effectiveness has been levelled in the literature over the last ten years (Newall, Jit and Hutubessy, 2014; Marseille *et al.*, 2015; Ochalek, Lomas and Claxton, 2015, 2018; Woods *et al.*, 2016). In response to the push for UHC, the last five years have seen the development of a dizzying suite of investment cases, strategies targeting non-traditional donors and innovative approaches to promote consistent, sufficient financing of community health (Singh, Sullivan and Members, 2013; Global Financing Facility, 2016; *Community Health Financing Compendium*, 2017; *Community Health Roadmap*, 2019; Fernandes and Sridhar, 2017; Chou *et al.*, 2018; E&K consulting, 2018). In most cases, this represents progress towards integration of community health into broader health systems, though priorities often continue to reflect donor concerns (likely in response to the fact that community health systems are still primarily funded by external financing in most countries). However, it is not clear who is the decision maker that is intended to be influenced by many of these cases and studies. Many of them target the Ministries of Finance and

2
3 CTC programme leaders are rarely explicitly considered, nor are sub-national decision makers,
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5 despite an increasing emphasis on decentralizing decisions in LMIC health systems (Bossert and
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7 Mitchell, 2011; Otiso *et al.*, 2017; McCollum, Limato, *et al.*, 2018; Abimbola, Baatiema and Bigdeli,
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9 2019). For this powerful evidence to be used and useful, it must consider the decision maker more
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11 explicitly and the constraints on their decision, e.g. through budget impact analysis rather than
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13 simply reporting incremental cost-effectiveness ratios against thresholds (Revill *et al.*, 2014; Bilinski
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15 *et al.*, 2017; Robinson *et al.*, 2017; Ochalek, Lomas and Claxton, 2018).
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21 As with any multi-country study and qualitative studies more generally, there are challenges to
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23 generalisability due to the contextual variation. However, the results were generally consistent
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25 enough to suggest actions for researchers and to commissioners and users of economic research
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27 evidence in the community health space. The selection of countries from within the REACHOUT
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29 consortium near the end of that programme period might have increased some of the key
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31 informants' consideration of and awareness of community health issues as part of the wider
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33 healthcare system in comparison to others in the region. The highly variation in degree of
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35 decentralisation of community health decisions could have also created less convergence around
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37 evidence use. In terms of positionality, the collection of data by a non-local researcher might limit
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39 the willingness of some respondents (especially government staff) to be fully frank, and similarly
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41 conducting interviews in English might have limited the nuance available to participants with more
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43 limited language proficiency.
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50 **Conclusions**

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52 In summary, there ~~are opportunities~~ is ample room to improve and increase evidence use in
53
54 community health programming and financing decisions. The goals of the health sector are in
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56 improving population health and health outcomes; additional benefits of improved quality of CTC
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58 health worker services are intrinsically valuable but even more complex to measure - aspects such as
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trust, motivation, inclusion, and adherence (Kok *et al.*, 2017, 2018; Kea *et al.*, 2018; Datiko *et al.*, 2019; Tseng *et al.*, 2019). Thus, decision makers focus on coverage as the priority benefit that they would like to see represented in evaluations of community health programmes, yet have limited resources to commission or undertake evaluations, and limited pressure to use the results. Politics further constrains decisions primarily in two ways: first, hardware investments such as hospitals, vehicles and equipment are easy election ‘wins’ and second, removing established services that are less (cost-)effective is politically challenging, even if evidence exists. If researchers and community health decision makers can bridge these gaps between them, the important value of evidence in improved community health programming and therefore improved population health will begin to be realised.

However, all potential approaches will have to overcome weaknesses in quality of available data, limitations in decision maker capacity and concerns about applicability of evidence expressed by respondents in this study.

References

- Abimbola, S., Baatiema, L. and Bigdeli, M. (2019) 'The impacts of decentralization on health system equity, efficiency and resilience: a realist synthesis of the evidence', *Health Policy and Planning*. Oxford University Press (OUP). doi: 10.1093/heapol/czz055.
- Agarwal, S. *et al.* (2019) 'Setting the global research agenda for community health systems: literature and consultative review', *Human Resources for Health*. BioMed Central, 17(1), p. 22. doi: 10.1186/s12960-019-0362-8.
- Ballard, M. *et al.* (2017) *Practitioner Expertise to Optimize Community Health Systems: Harnessing Operational Insight*. doi: 10.13140/RG.2.2.35507.94247.
- Barasa, E. W. *et al.* (2015) 'Setting Healthcare Priorities at the Macro and Meso Levels : A Framework for Evaluation', *Int J Health Policy Manag*, 4(11), pp. 719–732. doi: 10.15171/ijhpm.2015.167.
- Barger, D. *et al.* (2017) 'Multi-country analysis of the cost of community health workers kits and commodities for community-based maternal and newborn care', *Health Policy and Planning*, 32(November), pp. i84–i92. doi: 10.1093/heapol/czx038.
- Bhutta, Z. A. (2017) 'Community-based primary health care: a core strategy for achieving sustainable development goals for health', 7(1), p. 1. doi: 10.7189/jogh.07.010101.
- Bilinski, A. *et al.* (2017) 'When cost-effective interventions are unaffordable: Integrating cost-effectiveness and budget impact in priority setting for global health programs', *PLOS Medicine*. Public Library of Science, 14(10), p. e1002397. doi: 10.1371/journal.pmed.1002397.
- Bossert, T. J. and Mitchell, A. D. (2011) 'Health sector decentralization and local decision-making: Decision space, institutional capacities and accountability in Pakistan', *Social Science & Medicine*. Pergamon, 72(1), pp. 39–48. doi: 10.1016/J.SOCSCIMED.2010.10.019.
- Caldwell, S. and Mays, N. (2012) 'Studying policy implementation using a macro, meso and micro frame analysis: the case of the Collaboration for Leadership in Applied Health Research & Care (CLAHRC) programme nationally and in North West London', *Health Research Policy and Systems*, 10(32). Available at: <http://www.health-policy-systems.com/content/10/1/32> (Accessed: 9 August 2019).

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2019).

Chou, V. B. *et al.* (2017) 'Expanding the population coverage of evidence-based interventions with community health workers to save the lives of mothers and children: an analysis of potential global impact using the Lives Saved Tool (LiST)', *Journal of Global Health*, 7(2). doi:

10.7189/jogh.07.020401.

Chou, V. B. *et al.* (2018) 'Pushing the envelope through the Global Financing Facility: potential impact of mobilizing additional support to scale-up life-saving interventions for women, children and adolescents in 50 high-burden countries', *BMJ Global Health*. *BMJ Specialist Journals*, 3(5), p.

e001126. doi: 10.1136/bmjgh-2018-001126.

Cometto, G. *et al.* (2018) 'Health policy and system support to optimise community health worker programmes: an abridged WHO guideline', *The Lancet Global Health*. Elsevier, 0(0). doi:

10.1016/S2214-109X(18)30482-0.

Community Health Financing Compendium (2017). Available at: www.financingalliance.org

(Accessed: 6 May 2019).

Community Health Roadmap (2019). Available at: <https://www.communityhealthroadmap.org/>

(Accessed: 27 September 2019).

Conn, C. P., Jenkins, P. and Touray, S. O. (1996) 'Strengthening health management: Experience of district teams in The Gambia', *Health Policy and Planning*, 11(1), pp. 64–71. doi:

10.1093/heapol/11.1.64.

Datiko, D. G. *et al.* (2019) 'Community participation and maternal health service utilization: lessons from the health extension programme in rural southern Ethiopia', *J Glob Health Rep*, 3, p. 2019027.

doi: 10.29392/joghr.3.e2019027.

Daviaud, E. *et al.* (2017) 'Costs of implementing integrated community case management (iCCM) in six African countries: implications for sustainability', *Journal of Global Health*, 7(1). doi:

10.7189/jogh.07.010403.

E&K consulting (2018) *The Investment Case for Community Health in Kenya*. Nairobi, Kenya. Available

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at: <https://livinggoods.org/wp-content/uploads/2019/06/Investment-Case-for-Community-Health-in-Kenya.pdf> (Accessed: 15 August 2019).

Feldhaus, I. *et al.* (2019) 'Incorporating costing study results into district and service planning to enhance immunization programme performance: a Zambian case study', *Health Policy and Planning*. Oxford University Press (OUP), 34(5), pp. 327–336. doi: 10.1093/heapol/czz039.

Fernandes, G. and Sridhar, D. (2017) 'World Bank and the Global Financing Facility', *Bmj*, 8, p. j3395. doi: 10.1136/bmj.j3395.

Fiscal space, public finance management and health financing: a collaborative agenda (2014). Montreux, Switzerland.

Freeman, P. A. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 4. child health findings', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010904.

Gale, N. K. *et al.* (2013) 'Using the framework method for the analysis of qualitative data in multi-disciplinary health research', *BMC Medical Research Methodology*. BioMed Central, 13(1), p. 117. doi: 10.1186/1471-2288-13-117.

Global Financing Facility (2016) *Guidance Note : Investment Cases*. Washington, D.C.

Greenhalgh, T. *et al.* (2017) 'Beyond adoption: A new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies', *Journal of Medical Internet Research*, 19(11). doi: 10.2196/jmir.8775.

Javanparast, S. *et al.* (2018) 'Community Health Worker Programs to Improve Healthcare Access and Equity: Are They Only Relevant to Low- and Middle-Income Countries?', *International Journal of Health Policy and Management*, 7(10), pp. 943–954. doi: 10.15171/ijhpm.2018.53.

Jennings, M. C. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 2. maternal health findings', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010902.

Katahoire, A. R. *et al.* (2015a) 'Improving child survival through a district management strengthening

2
3 and community empowerment intervention: early implementation experiences from Uganda', *BMC*
4
5 *Public Health* 2015 15:1. BioMed Central, 15(1), p. 797. doi: 10.1186/s12889-015-2129-z.
6
7 Katahoire, A. R. *et al.* (2015b) 'Improving child survival through a district management strengthening
8 and community empowerment intervention: early implementation experiences from Uganda', *BMC*
9
10 *Public Health* 2015 15:1. BioMed Central, 15(1), p. 797. doi: 10.1186/s12889-015-2129-z.
11
12
13
14 Kea, A. Z. *et al.* (2018) 'Exploring barriers to the use of formal maternal health services and priority
15 areas for action in Sidama zone, southern Ethiopia', *BMC Pregnancy and Childbirth*. BioMed Central,
16
17 18(1), p. 96. doi: 10.1186/s12884-018-1721-5.
18
19
20
21 Kok, M. C. *et al.* (2015) 'Which intervention design factors influence performance of community
22 health workers in low-and middle-income countries? A systematic review', *Health Policy and*
23
24 *Planning*, 30(9), pp. 1207–1227. doi: 10.1093/heapol/czu126.
25
26
27
28 Kok, M. C. *et al.* (2017) 'Performance of community health workers : situating their intermediary
29 position within complex adaptive health systems', *Human Resources for Health*. Human Resources
30
31 for Health, pp. 1–7. doi: 10.1186/s12960-017-0234-z.
32
33
34
35 Kok, M. C. *et al.* (2018) 'Does supportive supervision enhance community health worker motivation?
36 A mixed-methods study in four African countries', *Health Policy and Planning*, (September), pp. 988–
37
38 998. doi: 10.1093/heapol/czy082.
39
40
41
42 Lehmann, U., Twum-Danso, N. A. Y. and Nyoni, J. (2019) 'Towards universal health coverage: what
43 are the system requirements for effective large-scale community health worker programmes?', *BMJ*
44
45 *Global Health*. *BMJ*, 4(Suppl 9), p. e001046. doi: 10.1136/bmjgh-2018-001046.
46
47
48
49 Marseille, E. *et al.* (2015) 'Thresholds for the cost–effectiveness of interventions: alternative
50 approaches', *Bulletin of the World Health Organization*, 93(2), pp. 118–124. doi:
51
52 10.2471/BLT.14.138206.
53
54
55
56 McCollum, R., Limato, R., *et al.* (2018) 'Health system governance following devolution: comparing
57 experiences of decentralisation in Kenya and Indonesia', *BMJ Global Health*. *BMJ Specialist Journals*,
58
59 3(5), p. e000939. doi: 10.1136/bmjgh-2018-000939.
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McCollum, R., Theobald, S., *et al.* (2018) 'Priority setting for health in the context of devolution in Kenya: implications for health equity and community-based primary care', *Health Policy and Planning*, pp. 1–14. doi: 10.1093/heapol/czy043.

McCollum, R., Taegtmeier, M., *et al.* (2018) "'Sometimes it is difficult for us to stand up and change this": an analysis of power within priority-setting for health following devolution in Kenya', *BMC Health Services Research*. BioMed Central, 18(1), p. 906. doi: 10.1186/s12913-018-3706-5.

Newall, A. T., Jit, M. and Hutubessy, R. (2014) 'Are Current Cost-Effectiveness Thresholds for Low- and Middle-Income Countries Useful? Examples from the World of Vaccines', *Pharmacoeconomics*. Springer International Publishing, 32(6), pp. 525–531. doi: 10.1007/s40273-014-0162-x.

Nkonki, L., Tugendhaft, A. and Hofman, K. (2017) 'A systematic review of economic evaluations of CHW interventions aimed at improving child health outcomes', *Human Resources for Health*. Human Resources for Health, 15(19), pp. 1–19. doi: 10.1186/s12960-017-0192-5.

Ochalek, J., Lomas, J. and Claxton, K. (2015) *Cost Per DALY Averted Thresholds for Low-and Middle-Income Countries: Evidence From Cross Country Data*. York, UK. Available at: https://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP122_cost_DALY_LMI_C_threshold.pdf (Accessed: 17 May 2018).

Ochalek, J., Lomas, J. and Claxton, K. (2018) 'Estimating health opportunity costs in low-income and middle-income countries: a novel approach and evidence from cross-country data', *BMJ Global Health*. BMJ Specialist Journals, 3(6), p. e000964. doi: 10.1136/bmjgh-2018-000964.

Otiso, L. *et al.* (2017) 'Decentralising and integrating HIV services in community-based health systems: a qualitative study of perceptions at macro, meso and micro levels of the health system', *BMJ Global Health*. BMJ Specialist Journals, 2(1), p. e000107. doi: 10.1136/bmjgh-2016-000107.

Perry, H. B. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 6. strategies used by effective projects', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010906.

Pfadenhauer, L. M. *et al.* (2017) 'Making sense of complexity in context and implementation: the

Context and Implementation of Complex Interventions (CICI) framework', *Implementation Science* 2017 12:1. BioMed Central, 12(1), p. 21. doi: 10.1186/s13012-017-0552-5.

Phiri, S. C. *et al.* (2017) 'An exploration of facilitators and challenges in the scale-up of a national, public sector community health worker cadre in Zambia: a qualitative study', *Human Resources for Health*. Human Resources for Health, 15(40), pp. 1–9. doi: 10.1186/s12960-017-0214-3.

Rajkotia, Y. (2018) 'Beware of the success cartel: a plea for rational progress in global health.', *BMJ global health*. BMJ Specialist Journals, 3(6), p. e001197. doi: 10.1136/bmjgh-2018-001197.

REACHOUT (2013) *REACHOUT consortium*. Available at: <http://www.reachoutconsortium.org/> (Accessed: 5 June 2017).

Regeru, R. *et al.* (2020) 'Do you trust those data? – A mixed methods study assessing the quality of data reported by Community Health Workers in Kenya and Malawi', *Health Policy and Planning*.

Revill, P. *et al.* (2014) *Using Cost-Effectiveness Thresholds to Determine Value for Money in Low-and Middle-Income Country Healthcare Systems: Are Current International Norms Fit for Purpose?* 98.

York, UK. Available at:

https://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP98_costeffectiveness_thresholds_value_low_middle_income_countries.pdf (Accessed: 21 May 2018).

Robinson, L. A. *et al.* (2017) 'Understanding and improving the one and three times GDP per capita cost-effectiveness thresholds', *Health Policy and Planning*. Narnia, 32(1), pp. 141–145. doi: 10.1093/heapol/czw096.

Sacks, E. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 3. neonatal health findings', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010903.

Schleiff, M. *et al.* (2017) 'Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 5. equity effects for neonates and children', *Journal of Global Health*, 7(1). doi: 10.7189/jogh.07.010905.

Schneider, H. (2010) 'The Governance of National Community Health Worker Programmes in Low-

2
3 and Middle-Income Countries: An Empirically Based Framework of Governance Principles, Purposes
4 and Tasks', *Int Journal of Health Policy Management*, 8(1), pp. 18–27. doi: 10.15171/ijhpm.2018.92.
5
6
7 Schneider, H. *et al.* (2016) 'From Community Health Workers to Community Health Systems : Time to
8 Widen the Horizon ?', *Health Systems & Reform*, 2(2), pp. 112–118. doi:
9
10 10.1080/23288604.2016.1166307.
11
12
13
14 Schneider, H. and Nxumalo, N. (2017) 'Leadership and governance of community health worker
15 programmes at scale: a cross case analysis of provincial implementation in South Africa',
16
17
18
19
20
21
22
23
24
25
26
27
28
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33
34
35
36
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44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Scott, K. *et al.* (2018) 'What do we know about community-based health worker programs? A
systematic review of existing reviews on community health workers', *Human Resources for Health*
2018 16:1. BioMed Central, 16(1), p. 39. doi: 10.1186/s12960-018-0304-x.

Scott, K., George, A. S. and Ved, R. R. (2019) 'Taking stock of 10 years of published research on the
ASHA programme: examining India's national community health worker programme from a health
systems perspective', *Health Research Policy and Systems*, 17(29). doi: 10.1186/s12961-019-0427-0.

Silva, R. *et al.* (2016) 'Can community health workers report accurately on births and deaths? Results
of field assessments in Ethiopia, Malawi and Mali', *PLoS ONE*, 11(1). doi: 10.1371/journal.pone.

Singh, P., Sullivan, S. and Members, T. F. (2013) *One Million Community Health Workers: Technical
Task Force Report*. New York, NY, USA. Available at:
http://1millionhealthworkers.org/files/2013/01/1mCHW_TechnicalTaskForceReport.pdf (Accessed:
15 August 2019).

Stansfield, S. K. *et al.* (2006) 'Information to Improve Decision Making for Health', in Jamison, D.,
Breman, J., and Measham, A. (eds) *Disease Control Priorities in Developing Countries, 2nd edition*.
The International Bank for Reconstruction and Development / The World Bank. Available at:
<https://www.ncbi.nlm.nih.gov/books/NBK11731/>.

Taylor, C., Griffiths, F. and Lilford, R. (2017) 'Affordability of comprehensive community health
worker programmes in rural sub-Saharan Africa', *BMJ Global Health*, 2(3), p. e000391. doi:

10.1136/bmjgh-2017-000391.

Theobald, S. *et al.* (2014) 'Close to community health providers post 2015: Realising their role in responsive health systems and addressing gendered social determinants of health', *BMC Proceedings*. BioMed Central, 9(Suppl 10), p. S8. doi: 10.1186/1753-6561-9-S10-S8.

Tseng, Y.-H. *et al.* (2019) 'Integrating community health workers into the formal health system to improve performance: a qualitative study on the role of on-site supervision in the South African programme.', *BMJ Open*. British Medical Journal Publishing Group, 9(2), p. e022186. doi: 10.1136/bmjopen-2018-022186.

Vanyoro, K. P. *et al.* (2019) 'Local ownership of health policy and systems research in low-income and middle-income countries: a missing element in the uptake debate', *BMJ Global Health*, 4(4), p. e001523. doi: 10.1136/bmjgh-2019-001523.

Varian, H. R. (1992) *Microeconomic Analysis*. Third. W. W. Norton & Company.

Vaughan, K. *et al.* (2015) 'Costs and cost-effectiveness of community health workers: evidence from a literature review', *Human Resources for Health*. Human Resources for Health, 13(1), p. 71. doi: 10.1186/s12960-015-0070-y.

Wang, H. *et al.* (2016) *Ethiopia Health Extension Program: an institutionalized community approach for universal health coverage*. Washington, D.C.: The World Bank. doi: 10.1596/978-1-4648-0815-9.

Wickremasinghe, D. *et al.* (2016) 'District decision-making for health in low-income settings: a systematic literature review', *Health Policy and Planning*, ii, pp. 12–24. doi: 10.1093/heapol/czv124.

Woods, B. *et al.* (2016) 'Country-Level Cost-Effectiveness Thresholds: : Initial Estimates and the Need for Further Research', *Value in Health*, pp. 929–935. doi: 10.1016/j.jval.2016.02.017.

Yourkavitch, J. *et al.* (2016) 'How do we know? An assessment of integrated community case management data quality in four districts of Malawi', *Health Policy and Planning*, pp. 1–10. doi: 10.1093/heapol/czw047.

Table 1: Sampling framework

Category	Possible respondents	Location	Eligibility criteria
Global funders and policymakers of community health	USAID, Global Fund, UNICEF, WHO, UN Special Envoy, Financing alliance, DfID, Health Systems Global CHW TWG members	Global – Mix of remote and in-person	Funders of cases identified in the literature review
National/sub-national CTC programme decision makers	National Community health unit, National division of standards, district/county community or quality focal point, NGOs (as appropriate)	2-4 per country at relevant levels In-person	Identified by REACHOUT country teams Involved in: policy, financing, and/or programming decisions for CTC providers
Community health researchers and implementers	REACHOUT country Principal Investigator; Local academic or NGO-based researchers (international only if embedded)	2-3 per country In-person	Working on REACHOUT project for three or more years OR Researching CTC providers for 3 or more years

Table 1: Respondent characteristics*

Level/Country	Programme policy	Programme financing	Researcher	Implementer/ Health worker	Total
Global	1	5	2	3	11
National/Ethiopia	3	1	1	5	10
National/Kenya	3	1	2	3	8
National/Malawi	2	2	1	3	7
National/Mozambique	2	1	1	4	7
Total					43

*Respondents were allowed in exceptional cases to be included in more than one category or quota

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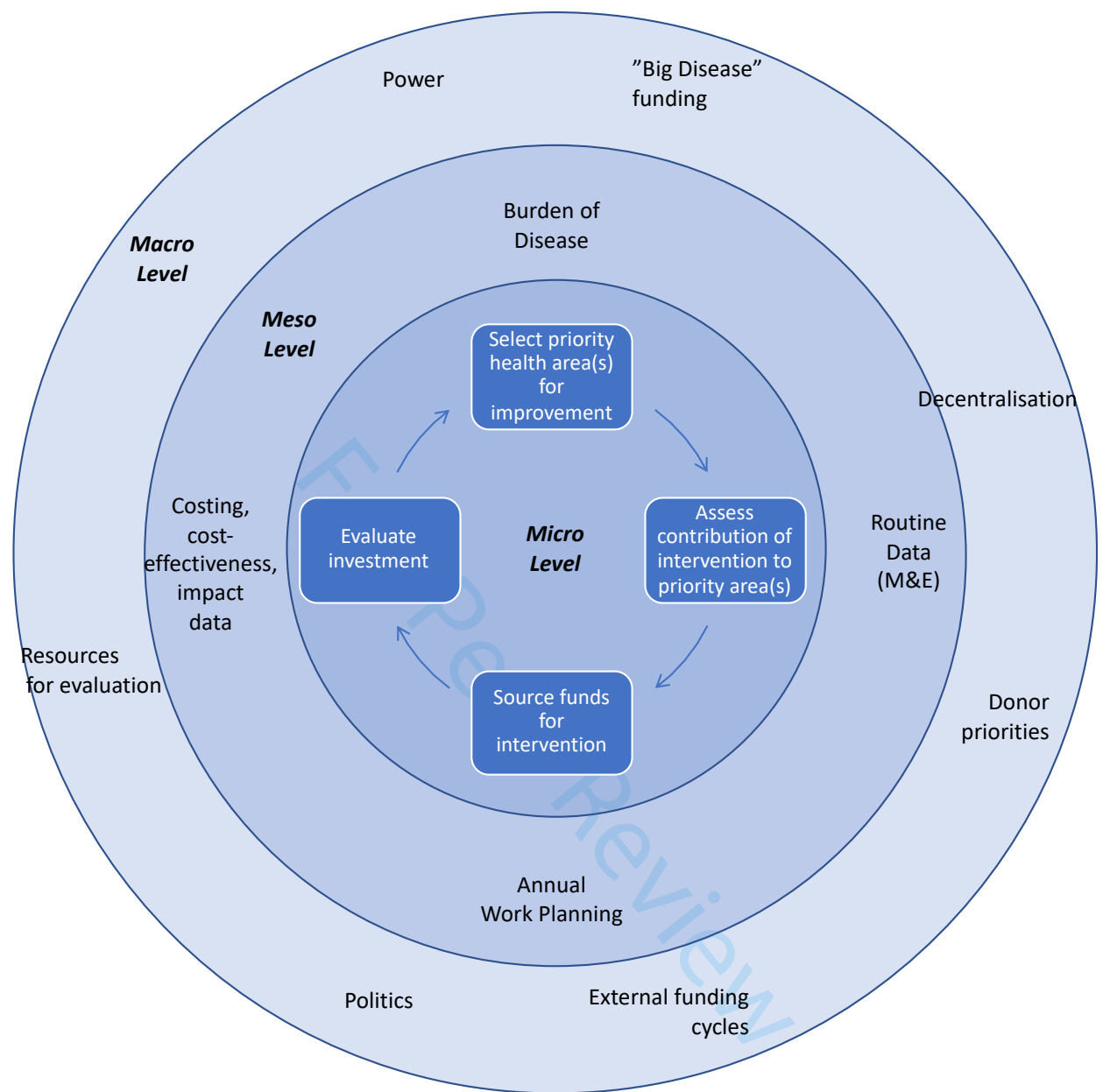


Figure 1: Conceptual Framework for influences on community health programming decisions

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5 **Study sites**

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7 As stated in the main article text, the study sites included the following countries: Ethiopia,
8 Kenya, Malawi, and Mozambique, in addition to global-level interviews. Each of these countries
9 was selected for two reasons:
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15 1. Incorporation of large-scale community health programs as part of the national UHC
16 strategy; and
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18 2. for their representation in the REACHOUT consortium as involved in community health
19 action research in multiple sites or locations.
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24 All countries have community health programs that are wholly or partially government-led.
25 However, the typology of the community health workers (responsibilities, professionalization,
26 remuneration, etc.), structure of the programs, and level of integration with the wider health
27 care system was variable. In this supplementary material, we give a brief description of this
28 variation to provide greater context for the findings. In each country, ethical approval was
29 granted and details of these approvals can be found in Supplementary File 4 to the main
30 manuscript.
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39 *Description of the community health systems in each study site*

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42 Descriptions of community health worker typologies tend to incorporate some or all of the
43 following dimensions: responsibilities and relationship to community and health facilities,
44 selection and recruitment, training and supervision, remuneration and supplies. These have
45 been described in detail by many publications, including those of the REACHOUT consortium and
46 by the author as part of earlier work (Lewin *et al.*, 2010; Kumar *et al.*, 2014; Mireku *et al.*, 2014;
47 Nyirenda *et al.*, 2014; Give *et al.*, 2015; Kok *et al.*, 2015; Mahmud *et al.*, 2015; Kane *et al.*, 2016;
48 Olaniran *et al.*, 2017; Tumbelaka *et al.*, 2018; Ormel *et al.*, 2019).
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4 Here I provide a brief description of the community health worker typologies and systems in each
5 study site as is relevant to understanding of the findings presented in the main manuscript;
6 further details on the typologies of the CTC providers can be found the supplementary material
7 to a recent publication by the author (Kumar *et al.*, 2019).
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16 In Ethiopia, community health is fully institutionalized under the Ministry of Health. The main
17 professionalized cadre of CTC providers are an all-female group called health extension workers.
18 By policy, they are selected by their communities and two serve each community (approximately
19 5,000 people) at any given time (Ministry of Health, 2007). They receive training of one year in
20 16 “essential packages”, including preventive and curative care for maternal and child health, as
21 well as hygiene, disease prevention, and health education. They serve the community from
22 Health Posts as well as doing household visits. They are supported by unpaid CTC providers called
23 the Health Development Army and 1-to-5 group leaders who are the heads of model households
24 (Datiko *et al.*, 2019). Health Extension Workers are supervised by Health Centre staff, the lowest
25 level facility of the primary care system in Ethiopia, and *woreda* or district staff also have less
26 frequent supervisory role. Successes of the health extension programme in various sites and
27 health service areas are well documented, though opportunities for improving the quality and
28 consistency of care remain (Wang *et al.*, 2016; Assefa *et al.*, 2019).
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42 Kenya

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45 In Kenya, the community health strategy was established in 2006 and revised in 2014 (Republic
46 of Kenya Ministry of Health, 2014). The current policy includes two tiers of community health
47 workers: community health volunteers (CHVs) and Community Health Extension Workers
48 (CHEWs), the latter of which was only officially included in the national scheme of service in 2013
49 (Republic of Kenya, 2013). Though are both officially recognized, only the CHEWs are salaried
50 government employees. Recommended ratios are one community health unit per approximately
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4 5000 population, to be staffed by 5 CHEWs and 10 CHVs. Main responsibilities of both cadres are
5 preventive and promotive health, with a focus on maternal and child health outcomes. CHEWs
6 are linked to a primary health care facility (Level 2 or 3) and will supervise the CHVs; supervision
7 is also provided directly by the sub-county health management team. Given devolution of health
8 policy and decision making to the county (sub-national) level in the new Kenyan constitution of
9 2010, county policies on pay for the two cadres and key responsibilities vary (McCollum *et al.*,
10 2016, 2018). There have been many pilots of utilising CHVs to deliver various curative services
11 but few of these have made it to policy and practice (Christoffersen-Deb *et al.*, 2015; Mushamiri
12 *et al.*, 2015; Otiso *et al.*, 2017; Onono *et al.*, 2018; Gimaiyo *et al.*, 2019).

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22 Malawi

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26 The Malawian Ministry of Health has recently issued a new community health policy, the subject
27 of much fanfare in the global UHC community (Malawi, 2017). This policy focuses on the Health
28 Surveillance Assistants (HSAs) and improving role clarity and support for them; next, the country
29 is focusing on is using this evidence to mobilize resources for expanding coverage and ensuring
30 salaries and commodities under the new plan (Davey *et al.*, 2016; Barger *et al.*, 2017; Greco *et*
31 *al.*, 2017). HSAs are nominated by their community, serving a population of approximately 1000,
32 and receive 12 weeks of training focused on preventive health, family health and environmental
33 health/sanitation. The HSAs also supervise CHVs and are supervised by senior HSAs, as well as
34 by Environmental Health Officers and Community Nurses based at their link Health Facility (Kok
35 *et al.*, 2016, 2018). Reporting is done on Form 1A and summarized in Form 1B before being
36 entered into the DHIS2 at the district level. Several papers have been published examining the
37 poor data quality in this community health system and possible means to improve that (Admon
38 *et al.*, 2013; Joos and Silva, 2016; Yourkavitch *et al.*, 2016).

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4 Mozambique

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7 In Mozambique, the community health programme is implemented by Agentes Polivalentes
8 Elementares (APEs). Although founded in the 1970s, the programme had nearly died out and
9 was recently revitalized in 2010-11 to create a salaried cadre of community health workers
10 (MISAU, 2010, 2011). APEs can be male or female and are elected by their communities and
11 receive four months of residential training; this has been observed to be a barrier to equitable
12 participation by both genders and men represent the majority of APEs (Steege *et al.*, 2018). Most
13 of the care APEs provide should be preventive and promotive, though when commodities are
14 available they also do integrated community case management of fever or iCCM for children
15 under five years old; referral is another important function they provide (Davlantés *et al.*, 2019;
16 Give *et al.*, 2019). APEs are supervised by link facility staff and district health management teams,
17 but this is intermittent (Ndima *et al.*, 2015).
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1 M Kumar et al.

2 Supplementary file 1: Community health systems description

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4 **References**

5
6 Admon, A. J. *et al.* (2013) 'Assessing and improving data quality from community health
7 workers: a successful intervention in Neno, Malawi.', *Public health action*, 3(1), pp. 56–59. doi:
8 10.5588/pha.12.0071.
9

10
11 Assefa, Y. *et al.* (2019) 'Community health extension program of Ethiopia, 2003-2018: Successes
12 and challenges toward universal coverage for primary healthcare services', *Globalization and*
13 *Health*. BioMed Central Ltd., 15(1). doi: 10.1186/s12992-019-0470-1.
14
15

16
17 Barger, D. *et al.* (2017) 'Multi-country analysis of the cost of community health workers kits and
18 commodities for community-based maternal and newborn care', *Health Policy and Planning*,
19 32(November), pp. i84–i92. doi: 10.1093/heapol/czx038.
20
21

22
23 Christoffersen-Deb, A. *et al.* (2015) 'Chamas for Change: an integrated community-based
24 strategy of peer support in pregnancy and infancy in Kenya', *The Lancet Global Health*, 3, p. S22.
25 doi: 10.1016/S2214-109X(15)70141-5.
26
27

28
29 Datiko, D. G. *et al.* (2019) 'Community participation and maternal health service utilization:
30 lessons from the health extension programme in rural southern Ethiopia', *Journal of Global*
31 *Health Reports*, 3, pp. 1–12. doi: 10.29392/joghr.3.e2019027.
32
33

34
35 Davey, S. *et al.* (2016) *Modelling the Cost of Community Health Services in Malawi : the Results*
36 *of Piloting a New Planning and Costing Tool*.
37

38
39 Davlantes, E. *et al.* (2019) 'Malaria case management commodity supply and use by community
40 health workers in Mozambique, 2017', *Malaria Journal*. BioMed Central, 18(1), p. 47. doi:
41 10.1186/s12936-019-2682-5.
42

43
44 Gimaiyo, G. *et al.* (2019) 'Can child-focused sanitation and nutrition programming improve
45 health practices and outcomes? Evidence from a randomised controlled trial in Kitui County,
46 Kenya', *BMJ Global Health*. BMJ Specialist Journals, 4(1), p. e000973. doi: 10.1136/bmjgh-2018-
47 000973.
48
49

50
51 Give, C. *et al.* (2019) 'Strengthening referral systems in community health programs: A
52 qualitative study in two rural districts of Maputo Province, Mozambique', *BMC Health Services*
53 *Research*. BioMed Central Ltd., 19(1). doi: 10.1186/s12913-019-4076-3.
54
55

56
57 Give, C. S. *et al.* (2015) 'Exploring competing experiences and expectations of the revitalized
58
59
60

1 M Kumar et al.

2 Supplementary file 1: Community health systems description

3
4 community health worker programme in Mozambique: an equity analysis', *Human Resources*
5 *for Health*. BioMed Central, 13(1), p. 54. doi: 10.1186/s12960-015-0044-0.

6
7 Greco, G. *et al.* (2017) 'Malawi three district evaluation : Community- based maternal and
8 newborn care economic analysis', (November), pp. 64–74. doi: 10.1093/heapol/czw079.

9
10 Joos, O. H. and Silva, R. (2016) 'Evaluation of a mHealth Data Quality Intervention to Improve
11 Documentation of Pregnancy Outcomes by Health Surveillance Assistants in Malawi : A Cluster
12 Randomized Trial Evaluation of a mHealth Data Quality Intervention to Improve Documentation
13 of Pregnan', (January). doi: 10.1371/journal.pone.0145238.

14
15 Kane, S. *et al.* (2016) 'Limits and opportunities to community health worker empowerment: A
16 multi-country comparative study', *Social Science & Medicine*. Pergamon, 164, pp. 27–34. doi:
17 10.1016/J.SOCSCIMED.2016.07.019.

18
19 Kok, M. C. *et al.* (2015) 'A qualitative assessment of health extension workers' relationships
20 with the community and health sector in Ethiopia: opportunities for enhancing maternal health
21 performance.', *Human Resources for Health*, 13(1). doi: 10.1186/s12960-015-0077-4.

22
23 Kok, M. C. *et al.* (2016) 'Health surveillance assistants as intermediates between the community
24 and health sector in Malawi: exploring how relationships influence performance', *BMC Health*
25 *Services Research*. BioMed Central, 16(1), p. 164. doi: 10.1186/s12913-016-1402-x.

26
27 Kok, M. C. *et al.* (2018) 'Does supportive supervision enhance community health worker
28 motivation? A mixed-methods study in four African countries', *Health Policy and Planning*,
29 (September), pp. 988–998. doi: 10.1093/heapol/czy082.

30
31 Kumar, M. B. *et al.* (2014) *Access to healthcare through community health workers in East and*
32 *Southern Africa*. New York, NY, USA.

33
34 Kumar, M. B. *et al.* (2019) 'Is quality affordable for community health systems? Costs of
35 integrating quality improvement into close-To-community health programmes in five low-
36 income and middle-income countries', *BMJ Global Health*. BMJ Specialist Journals, 4(4), p.
37 e001390. doi: 10.1136/bmjgh-2019-001390.

38
39 Lewin, S. *et al.* (2010) 'Lay health workers in primary and community health care for maternal
40 and child health and the management of infectious diseases (Review)', *Cochrane Database of*
41 *Systematic Reviews*, (3). doi: 10.1002/14651858.CD004015.pub3.www.cochranelibrary.com.

1 M Kumar et al.

2 Supplementary file 1: Community health systems description

3
4 Mahmud, I. *et al.* (2015) 'Exploring the context in which different close-to-community sexual
5 and reproductive health service providers operate in Bangladesh: a qualitative study', *Human*
6 *Resources for Health*. BioMed Central, 13(1), p. 51. doi: 10.1186/s12960-015-0045-z.

7
8
9 Malawi, G. of the R. of (2017) *National Community Health Strategy 2017-2022*. Available at:
10 [http://www.chwcentral.org/sites/default/files/National_Community_Health_Strategy_2017-](http://www.chwcentral.org/sites/default/files/National_Community_Health_Strategy_2017-2022%2BFINAL.pdf)
11 [2022%2BFINAL.pdf](http://www.chwcentral.org/sites/default/files/National_Community_Health_Strategy_2017-2022%2BFINAL.pdf).

12
13
14
15 McCollum, R. *et al.* (2016) 'Exploring perceptions of community health policy in Kenya and
16 identifying implications for policy change', *Health Policy and Planning*. Oxford University Press,
17 31(1), pp. 10–20. doi: 10.1093/heapol/czv007.

18
19
20
21
22
23
24
25 McCollum, R. *et al.* (2018) 'Health system governance following devolution: comparing
26 experiences of decentralisation in Kenya and Indonesia', *BMJ Global Health*. BMJ Specialist
27 Journals, 3(5), p. e000939. doi: 10.1136/bmjgh-2018-000939.

28
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51
52
53
54
55
56
57
58
59
60
Ministry of Health, F. (2007) *Health Extension Programme in Ethiopia*. Addis Ababa, Ethiopia.

Mireku, M. *et al.* (2014) *Context analysis: Close-to-community health service providers in Kenya*.

MISAU (2010) 'Programa de Revitalização dos Agentes Polivalentes Elementares', p. 37.

MISAU (2011) 'Guiao operacional para o programa dos agentes polivalentes elementares'.

Mushamiri, I. *et al.* (2015) 'Evaluation of the impact of a mobile health system on adherence to
antenatal and postnatal care and prevention of mother-to-child transmission of HIV programs
in Kenya', *BMC Public Health* 2015 15:1. BioMed Central, 15(1), p. 102. doi: 10.1186/s12889-
015-1358-5.

Ndimba, S. D. *et al.* (2015) 'Supervision of community health workers in Mozambique: a
qualitative study of factors influencing motivation and programme implementation', *Human*
Resources for Health. BioMed Central, 13(1), p. 63. doi: 10.1186/s12960-015-0063-x.

Nyirenda, L. *et al.* (2014) 'Report on the context analysis of close-to-community providers in
Malawi.', *REACH Trust*.

Olaniran, A. *et al.* (2017) 'Who is a community health worker? – a systematic review of
definitions', <https://doi.org/10.1080/16549716.2017.1272223>. Taylor & Francis. doi:
10.1080/16549716.2017.1272223.

Onono, M. *et al.* (2018) 'Using the RE-AIM framework to evaluate the implementation of

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Supplementary file 1: Community health systems description

integrated community case management in Kenya', *Acta Paediatrica*, 107(Suppl. 471), pp. 53–62. doi: 10.1111/apa.14662.

Ormel, H. *et al.* (2019) 'Salaried and voluntary community health workers: exploring how incentives and expectation gaps influence motivation', *Human Resources for Health*. BioMed Central, 17(1), p. 59. doi: 10.1186/s12960-019-0387-z.

Otiso, L. *et al.* (2017) 'Decentralising and integrating HIV services in community-based health systems: a qualitative study of perceptions at macro, meso and micro levels of the health system', *BMJ Global Health*. BMJ Specialist Journals, 2(1), p. e000107. doi: 10.1136/bmjgh-2016-000107.

Republic of Kenya, D. of P. S. M. (2013) *Scheme of Service for Community Health Services Personnel*.

Republic of Kenya Ministry of Health (2014) 'Strategy for Community Health', pp. 1–44.

Steege, R. *et al.* (2018) 'How do gender relations affect the working lives of close to community health service providers? Empirical research, a review and conceptual framework', *Social Science & Medicine*. Pergamon. doi: 10.1016/J.SOCSCIMED.2018.05.002.

Tumbelaka, P. *et al.* (2018) 'Analysis of Indonesia's community health volunteers (kader) as maternal health promoters in the community integrated health service (Posyandu) following health promotion training', *International Journal Of Community Medicine And Public Health*, 5(3). Available at: <http://ijcmph.com/index.php/ijcmph/article/view/2601/1830> (Accessed: 12 February 2018).

Wang, H. *et al.* (2016) *Ethiopia Health Extension Program: an institutionalized community approach for universal health coverage*. Washington, D.C.: The World Bank. doi: 10.1596/978-1-4648-0815-9.

Yourkavitch, J. *et al.* (2016) 'How do we know? An assessment of integrated community case management data quality in four districts of Malawi', *Health Policy Plan*, pp. 1–10. doi: 10.1093/heapol/czw047.

Selected questions from the discussion guide relevant to findings in this paper

Section A: General close-to-community experience

1. Describe broadly your experience with community health workers and programs. How long have you been working in this area? What makes you enjoy it? What are the biggest challenges?
2. What is the role of your organization in working with community health programs?
3. What is the quality of the community health services currently provided in the (geographic) areas where you work?

Section B: Financing CHWs

[NB: this may be public/national, public/sub-national, NGO, external funds; please ensure probing for domestic allocation e.g. between curative vs. preventive care, between different geography in the country, embedding of external programs into routine practice as well as applications to external donors]

4. Would you describe specifically any funding you give or generate related to community health.
 - a. What is the evidence or information that underpins this decision? (priority setting)
5. Who applies for the funding and what is the application process like? How long does it take?
6. What is the decision-making process for funding CHW programs?
 - a. Who decides and what criteria do they use?
 - b. What is the evidence or information that underpins this decision?
 - c. How do you decide where to give money (geographically)? Is this decided in advanced or based on applications?
7. Once a funding decision is made, how does the money get transferred? (Specifically: through domestic channels or through parallel programs/implementers?) Is this the same at all sites?

Section C: Case example of QI for CHWs

[NB: take QI for community health as a case example of a program or intervention that might be uptaken into routine practice and explore evidence needs, use, and possible financing mechanisms]

8. We touched briefly on quality of community health programs earlier. How do you understand the term 'quality improvement' in the context of community health?
 - a. *(interviewers: ask for other groups make up the CH ecosystem)*: How do you think communities see this? Supervisors/health systems? CHWs themselves?
9. Please describe any community health QI training and activities that you are an active participant in. If none, list any of which you are aware.
For each:
 - a. Please share how it is financed?
 - i. If you are funding it, what made you fund QI?

- ii. Is there a cost share between partners on this work? Who are they?
 - iii. What challenges were faced around costs?
 - iv. *(If donor financed)* who led the proposal development?
 - b. How do you evaluate the success of your QI program?
 - i. Did you conduct any economic evaluation and if so could you share that information?
 - c. What do you think could build on this in the future?
10. What are the benefits/outcomes/impacts you expect(ed) from any/this QI work with CHWs?
 - a. On the individuals involved?
 - b. On the institutions or facilities participating?
 - c. On the system more broadly?
 - d. Do you believe these changes will be sustained over the next 5 years? 10 years? Why or why not?
11. What evidence would you like to see that these benefits are being realized?
 - a. Are there any examples you could share about how that evidence has been effectively presented to you or by you?
Probe for documents/reports/evaluations and ask if they can be shared
12. What kind of change would be required to merit an (additional) investment of funds available to you in this area?
 - a. What evidence would help you know that it was worth the investment?
 - b. What degree of cost would be acceptable given that degree of change? – does QI deliver ‘bang for your buck’?
 - c. What do you view as competing with this type of intervention for financing?
13. What do you think are the cost implications of QI for CH?
14. Are you/Do you think national policymakers are interested in funding QI? Why or why not?
15. Other than financing, what would be required to achieve sustained change in this area?

Name	Sources	References	Created On	Created By	Modified On	Modified By	Color
coordination	20	48	19 Jan 2019 02:59	MBK	18 Mar 2019 11:09	MBK	
economic evaluation evi...	9	18	19 Nov 2018 05:23	MBK	18 Mar 2019 11:16	MBK	
evidence vs politics	12	19	10 Jan 2019 02:04	MBK	18 Mar 2019 13:00	MBK	
importance of EE at di...	5	6	10 Jan 2019 02:05	MBK	18 Mar 2019 11:46	MBK	
role of EE in policy fu...	7	9	10 Jan 2019 02:04	MBK	18 Mar 2019 12:58	MBK	
embedding	23	67	10 Jan 2019 02:06	MBK	3 Mar 2019 23:00	MBK	
CHS as part of health...	23	44	17 Jan 2019 05:53	MBK	18 Mar 2019 13:07	MBK	
discussion from quant...	6	7	10 Jan 2019 02:06	MBK	25 Jan 2019 09:09	MBK	
key stakeholders	10	13	10 Jan 2019 02:06	MBK	3 Mar 2019 22:59	MBK	
non-financial	23	33	10 Jan 2019 02:06	MBK	18 Mar 2019 13:13	MBK	
Equity	10	14	22 Jan 2019 02:42	MBK	18 Mar 2019 13:10	MBK	
Financing of CHS	18	48	19 Nov 2018 05:16	MBK	18 Mar 2019 13:00	MBK	
budget impact	1	2	18 Mar 2019 13:00	MBK	18 Mar 2019 13:01	MBK	
competition with QI fo...	19	27	10 Jan 2019 02:05	MBK	18 Mar 2019 13:04	MBK	
Cost-effectiveness	3	4	19 Nov 2018 05:19	MBK	18 Mar 2019 13:00	MBK	
Decisionmaker	12	22	19 Nov 2018 05:19	MBK	18 Mar 2019 11:16	MBK	
devolution	16	45	16 Jan 2019 23:41	MBK	18 Mar 2019 11:16	MBK	
Disinvestment	5	5	19 Nov 2018 05:19	MBK	18 Mar 2019 11:14	MBK	
Evidence for financing...	13	25	19 Nov 2018 05:19	MBK	18 Mar 2019 13:01	MBK	
external financing	15	40	25 Jan 2019 08:35	MBK	18 Mar 2019 12:59	MBK	
roles in financing of di...	24	51	14 Jan 2019 13:51	MBK	18 Mar 2019 12:59	MBK	
governance	1	1	3 Mar 2019 22:58	MBK	3 Mar 2019 22:58	MBK	
leadership	13	35	29 Jan 2019 08:04	MBK	18 Mar 2019 13:13	MBK	
parallel to health system	2	4	3 Mar 2019 22:52	MBK	18 Mar 2019 11:00	MBK	
QI for CHS	20	31	19 Nov 2018 05:16	MBK	18 Mar 2019 13:11	MBK	
Cases or examples of...	22	42	19 Nov 2018 05:16	MBK	18 Mar 2019 13:10	MBK	
community-facility lin...	18	32	19 Jan 2019 03:04	MBK	18 Mar 2019 13:07	MBK	
dissemination and lea...	3	4	18 Mar 2019 11:34	MBK	18 Mar 2019 13:14	MBK	
Evaluation of QI for CHS	7	10	19 Nov 2018 05:23	MBK	18 Mar 2019 13:02	MBK	
Perceived cost of QI f...	16	29	19 Nov 2018 05:18	MBK	18 Mar 2019 13:13	MBK	
Quality of CHS	24	58	19 Nov 2018 05:16	MBK	18 Mar 2019 12:55	MBK	
Accountability for qua...	12	13	19 Nov 2018 05:18	MBK	18 Mar 2019 11:05	MBK	
Measuring quality	26	55	19 Nov 2018 05:18	MBK	18 Mar 2019 13:08	MBK	

