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The community health worker as service extender, cultural broker and social change agent: a critical interpretive synthesis of roles, intent and accountability

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ABSTRACT

This paper is a critical interpretive synthesis of community health workers (CHWs) and accountability in low-income and middle-income countries. The guiding questions were: What factors promote or undermine CHWs as accountability agents? (and) Can these factors be intentionally fostered or suppressed to impel health system accountability? We conducted an iterative search that included articles addressing the core issue of CHWs and accountability, and articles addressing ancillary issues that emerged in the initial search, such as 'CHWs and equity.' CHWs are intended to comprise a 'bridge' between community members and the formal health system. This bridge function is described in three key ways: service extender, cultural broker, social change agent. We identified several factors that shape the bridging function CHWs play, and thus, their role in fomenting health system accountability to communities, including the local political context, extent and nature of CHW interactions with other community-based structures, health system treatment of CHWs, community perceptions of CHWs, and extent and type of CHW unionisation and collectivisation. Synthesising these findings, we elaborated several analytic propositions relating to the self-reinforcing nature of the factors shaping CHWs' bridging function; the roles of local and national governance; and the human resource and material capacity of the health system. Importantly, community embeddedness, as defined by acceptability, social connections and expertise, is a crucial attribute of CHW ability to foment local government accountability to communities.

Key questions

What is already known?

- There exists a moderate body of research assessing the public health impact of CHWs and assessing CHW motivation, supervision and job challenges.

What are the new findings?

- This paper breaks new ground in that it synthesises extant research through the lens of accountability, offering insights into the accountability ecosystem in which CHWs operate, and highlighting weaknesses in assumptions regarding CHWs and Universal Health Coverage. This synthesis surfaces the importance of the governance context.

What do the new findings imply?

- In addition to arguing for further research, the paper suggests that the impact of CHW programs cannot be separated from larger questions related to governance, community trust and the collective power of CHWs. Governments and donors should consider these factors in determining their expectations of CHW programs.
- The accountability framing raised many questions that were unanswered by extant research, including an emic perspective of CHWs' accountability objectives and whether CHW unionisation fosters stronger alliances with the populations served.

INTRODUCTION

Background

Government accountability is a fundamental premise of democratic political systems. Governmental obligations are expressed in multilateral global health compacts, the international human rights regime, and national laws and policies. Public sector delivery of services is a key mechanism for realising accountability to fulfil the right to health.

Governments, donors and other global health agenda setters identify public sector Community Health Workers (CHWs) as potentially crucial to realising health service coverage goals, and, in some contexts, to the delivery of preventive and curative health services. In general, the term CHW describes workers who: are members of the communities where they work; are (at least in part) selected by the communities they serve; have

little or no secondary education; and represent and/or deliver formal health services in the biomedical tradition.[1] Aside from these commonalities, the characteristics of CHWs—including gender, age, education, training, scope of practice, remuneration and even nomenclature—can vary widely by programme.[1]

This paper is a critical interpretive synthesis (CIS) of CHWs and accountability in low-income and middle-income countries (LMICs), with selected insights from high income countries. CIS entails the iterative assessment of multi-disciplinary evidence,[2] facilitating the exploration of disparate fields such as global health and accountability.

History/evolution of CHW programmes and accountability in LMICs

CHW programmes have a long history, dating back to the 1930s with China's 'Farmer Scholars.' The 1960s/1970s saw a flurry of smaller scale CHW programmes in various countries, followed by efforts at national-scale government programmes.[3–6] The emphasis of these early programmes was on CHWs with a 'generalist' mandate. Embedded within communities, CHWs would act as agents of social change by bringing health services to communities, promoting community interests vis-a-vis the health sector, and, through their culturally appropriate and physically accessible preventive and curative work, helping to improve the quality of government health services.[7 8]

Economic and political trends in the 1980s/1990s—including a global recession, a debt crisis in many LMICs, and donor imposed structural adjustment policies—undercut momentum for comprehensive primary healthcare and resulted in waning financial and political support for CHW programmes with broad mandates.[9]

Then, in the early 2000s, global support for vertical or disease-specific CHW programmes burgeoned in the context of efforts to meet coverage and treatment objectives enshrined in the health-related Millennium Development Goals. Renewed interest in CHWs led to a proliferation of new and revived programmes, with increasing focus and reliance on CHWs as a mechanism for expanding communities' access to maternal, newborn and child health and other basic health services. Many of these programmes have produced robust evidence that CHW programmes can contribute to improvements in population health outcomes.[10–13]

Accountability

When evoked as a principle in public sector governance, accountability can be described as 'the continuing concern for checks and oversight, for surveillance and institutional constraints on the exercise of power'.[14] In this paper, we distinguish between 'downward accountability,' or accountability from the health system to the communities they serve, and 'upward accountability' relations of front-line service providers to policy implementers, who in turn report to policy-makers.

This conceptual simplicity can be muddied by actual dynamics on the ground, where informal accountabilities—such as to politicians, religious institutions, foreign donors or powerful community members—may be more determinative than formal accountability relationships enshrined in law or policy. Acknowledging the importance of informal accountabilities, some theorists discuss the 'culture of accountability' or describe accountability as an 'emergent property' of a system.[15] This approach emphasises the importance of political commitment, institutional rules and professional norms in shaping accountability in practice.[15–19]

CHW programmes are one approach for governments to fulfil the right to health, but such fulfilment depends on the accountability ecosystem—both formal and informal—in which CHWs operate. In some contexts, CHWs have an explicit mandate to be agents of downward accountability, meaning that they are expected to improve health system accountability to communities they serve.[20] In other settings, they have an implicit downward accountability function, such as representing community concerns to the local health facility or educating the community about their rights and entitlements.[21] At the same time, CHWs programmes enshrine formal upward accountability, as CHW report to supervisors or political actors.[22–25]

Despite the fact that governmental CHW programmes generally entail the expectation that CHWs foster health system accountability to the community (and vice-versa), an accountability lens has not been widely applied to studies on CHWs, outside of several exceptions.[26–29]

METHODS

This paper is a modified CIS. CIS is iterative and inductive, and it entails synthesising data across a diverse body of empirical literature and the development of new analytic propositions, synthesising arguments and questions.[2 30–32] Following a 'principle of pluralism' facilitates synthesis across different fields to illuminate the issue as a whole.[33] The approach is apt for assessing CHWs and accountability, as they are topics from distinct fields (public health and governance) with few studies that focus on their intersection.

We describe our study as a modified CIS because we began with the development of a background brief for a June 2017 'think in' on CHWs and accountability. The subsequent development of the review was informed partly by issues arising at the think-in.[34] We explain in detail.

The guiding questions for the think in on CHWs and accountability were as follows: What factors promote or undermine CHWs as accountability agents? (and) Can these factors be intentionally fostered or suppressed to impel health system accountability? Based on initial review of articles addressing themes related to CHWs and accountability, the authors developed a list of relevant topics, including the notion of CHWs as a bridge between

health systems and communities; CHWs interfacing with community-based structures; treatment of CHWs by the health system; CHW professional associations/unions; community perceptions of CHWs; CHWs and social accountability; and CHW perceptions of accountability. Our team conducted an electronic literature search in April 2017 using PubMed. We also did a rapid search of CHW-like programmes, including 'barefoot doctors,' 'visiting nurses,' 'peer health educators,' 'health mediators,' and 'patronage nurses.' We limited our focus to government-supported CHW programmes, though we did not exclude the few articles identified that focused on NGO-supported CHWs. Papers were screened for English language and relevance based on title (and abstract, if needed), and then read in full. Reference lists were used to identify further articles. This research was used to draft a background note for the think in. Based on feedback from colleagues at the meeting, we then decided to expand this background note into a more formal literature synthesis.

The second electronic literature search was conducted in December 2017 using PubMed, ScienceDirect, Scopus and Google Scholar. After having conducted the first search, we decided that the search term 'CHW' was adequate to capture government-run CHW programmes, so we no longer searched for synonyms of 'CHW'. The following search terms were used: (CHW OR "community health worker") AND (accountability OR governance OR responsiveness OR "human rights" OR empower OR empowered OR empowerment). Results were filtered to only show items published since 1978, as 1978 was the year of the Alma-Ata Conference on Primary Healthcare, which represents a conceptual starting point in the current discussions on CHWs. GoogleScholar returned a number of results where 'CHW' stood for something other than 'CHW', and so the first 250 hits were screened for relevance to CHWs. Those 103 results were exported into Mendeley, along with all the search results from the other databases, for a total of 238 unique results. These were then screened for English language and relevance to accountability based on title (and abstract, if needed), narrowing the pool down to 51 results. Abstracts for all 51 items were reviewed, and 13 'core' articles were identified to be most relevant to the topic of CHWs and accountability. These 'core' articles were read in full by two of the authors (CW and MS) to identify any other 'ancillary' topics that might provide useful context for the review.

We then conducted abbreviated literature searches on these 'ancillary' topics through the lens of accountability, which included CHWs in primary healthcare versus vertical health programmes; the ecology of CHW programmes (ie, in cases where there are multiple programmes, how do they interact); CHW task mix; fidelity of CHW programme implementation; equity in CHW programme impacts; gender and CHW programmes; CHWs and political context/local control; and community monitoring/accountability structures. Each search was conducted independently by one of the four authors. The searches were not meant to be exhaustive and rather sought to identify 5–7 articles germane to each topic, which were then used, in conjunction with the 13 'core' articles to prepare a brief synthesis of each 'ancillary' topic for all the authors to review. We focused on LMICs, but included articles from high income countries we felt would offer particularly relevant insights. The intent of these mini 'ancillary' reviews was to draw out the contextual and political economic factors that shape CHWs and their role in the larger accountability ecosystem. Limiting ourselves to a search on just CHWs and accountability would have led us to a more managerial focus that insufficiently probed the power dynamics shaping CHW ability to function as accountability agents.

The 'ancillary' syntheses were then integrated into the existing CHW and accountability think in background note, including as they expanded, provided nuance, or contradicted summaries and propositions already put forward in the draft. The authors were in contact regularly throughout the process to discuss the main rubrics and structure of the paper. In August 2019, we did a rapid literature review in Google Scholar on CHWs and accountability to make sure we included any research that had appeared since our last search. We integrated 36 articles at this time.

Patient and public involvement

Because this paper is not directly related to patient care, this research was done without patient involvement. Patients were not invited to comment on the study design and were not consulted to develop patient relevant outcomes or interpret the results. Nor were patients invited to contribute to the writing or editing of this document for readability or accuracy.

FINDINGS

CHW function and accountability

CHWs comprise a 'bridge' between community members and the formal health system. This bridge function is described in three key ways in the peer-reviewed literature and in programme documents: service extender, cultural broker, and social change agent. These three roles can be seen as existing on a continuum from extending the reach of the current health system, to effecting change in the health system and in other social determinants of health. However, many CHW job descriptions contain elements of more than one of these roles. The multifaceted nature of the CHW bridging role is depicted in figure 1. We describe each of these roles, and then briefly discuss how each relates to health system accountability to communities.

CHWs are often simply used to deliver health services to community members who would otherwise not have access, thereby functioning as a 'service extender'.[5] There is abundant evidence supporting the claim that CHWs can effectively bridge the service provision gap between the health system and underserved communities by, for

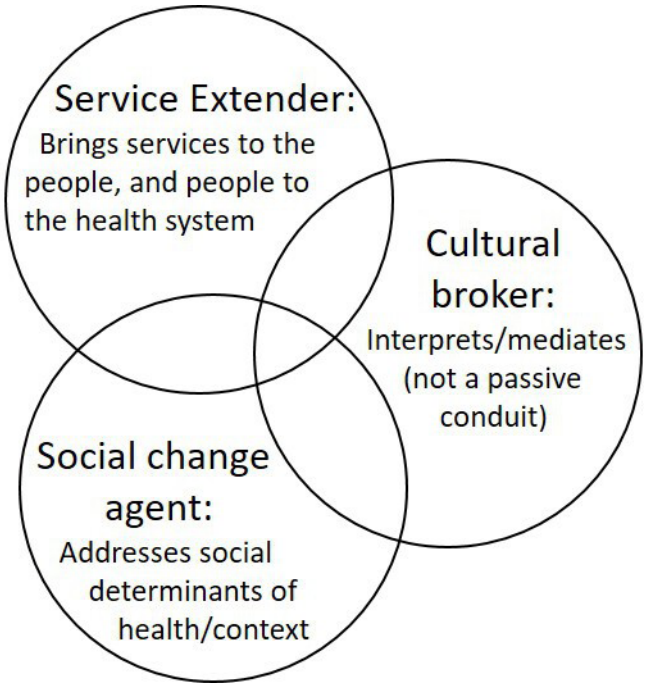

Figure 1 Key programme approaches to the CHW bridge function. CHW, community health worker.

example, offering home-based preventive and curative services such as antiretroviral therapy and insecticide-treated bed net distribution, and providing health education to communities.[11–13] In this way, CHWs help to promote government realisation of its obligations to fulfil the right to health. Service extension more meaningfully promotes health system accountability if it remedies—rather than perpetuates—existing inequities. Most CHW programmes are equity oriented in their design, insofar as they target rural populations, urban slums, and other geographies that are disproportionately poor and/or hard to reach.[9] There have been two reviews of whether and how CHWs promote equity. In their systematic review, McCollum *et al* found evidence that CHWs can reduce inequities in health service access and utilisation based on gender, place of residence, education and socioeconomic status; but, they also found that programmes rarely track equity systematically.[35] For the second review, Blanchard *et al* found mixed results on whether or not coverage of CHW services was equitable, as well as on the impact of CHW coverage on equity in antenatal care, skilled birth attendance, and essential newborn care. The authors found that home based care practices improved more equitably than care seeking, raising important questions about CHW ability to address health systems challenges.[36] Moreover, CHW programmes can replicate some of the barriers community members face at the clinic level at the community level. For example, a study in Pakistan found that lower caste CHWs were more likely to visit (and to be respected by) their lower caste peers[37]; Ved *et al* had similar findings in India.[38]

In contexts where programme planners are trying to address cultural differences or mistrust, CHWs may be expected to fulfil a 'cultural broker' role.[28 39] Cultural brokers may communicate health system priorities and information to communities in culturally appropriate and acceptable ways, and, communicate community needs and concerns to a health system that suffers from cultural inaccessibility.[40 41] For example, CHWs in Bangladesh have used folk music or theatre to spread awareness of health issues.[10] Many CHW programmes in high-income countries are focused almost exclusively on a cultural brokerage role. In southeastern Europe, Roma Health Mediators function as linguistic and cultural interpreters and try to tailor health provider advice to the life context of poor Romani patients.[42] However, developing culturally appropriate approaches requires that CHWs be granted sufficient flexibility to alter health messages as necessary. In Thailand, CHWs have described how supervisory emphasis on specific protocols and activities has limited their ability to tailor their support in response to community needs.[6]

The latter form of the cultural broker role—communicating community needs and concerns to the health system—may be a promising channel through which CHWs can foster health system accountability to communities. For example, health extension workers in Ethiopia's government-led Health Extension Programme develop a plan of action based on community needs, which is then submitted to the village council and distributed to district and regional councils and health offices.[43] In Australia, the Aboriginal and Torres Strait Islander Health Workers provide cultural mentorship to non-Aboriginal and Torres Strait Islander colleagues and advocate for culturally appropriate care.[28] Programmatic, social, management and political dynamics can shape the feasibility of cultural brokerage. For example, Brazilian CHWs felt their ability to elicit information about community needs was dependent on the long-term nature of their relationship with the neighbourhoods in which they work,[40] suggesting frequent staff turnover might constrain cultural brokerage. The hierarchical nature of health systems can prioritise the downward flow of information, such that health workers are expected to tell CHWs what to do, not gather information from them.[27] These same dynamics limit CHW ability to influence decision-makers with the expertise and information they have gathered.[44–46] In fact, a review of six country case studies found no evidence that CHWs influenced health service priorities or resource allocations based on their identification of local needs.[47]

Expansive conceptualisations describe CHWs as 'agents of social change'[8 48] or 'liberators',[49] advocating on behalf of their communities on topics relating to healthcare access, quality and the social determinants of health. The concept of the social change agent is integral to the explicit programme theory and/or the formal mandate of many CHW programmes. In Brazil and Bangladesh, for example, CHW training reportedly 'privileges the determination and understanding of social, economic and environmental characteristics of the community'.[10]

WHO guidelines recommend that CHW preservice training should include 'social and environmental determinants of health' and 'interpersonal skills related to […] community engagement and mobilisation,' if the cadre is expected to perform these functions.[50] However, of the three 'bridging' functions CHWs might serve, the role of social change agent is the least well documented in the literature.[35 48] The scant research attempting to assess the change agent role finds that this function is rarely realised, due in part to political and organisational barriers. For instance, even though Brazil's CHW programme model asserts that CHWs should be agents of social change, and CHWs may indeed witness and understand the social determinants that impact their communities,[40] the programme has been criticised for falling short of actualising social change and instead focusing too narrowly on the biomedical aspects of the CHW role.[10] This criticism has also been voiced for India's CHW programme, with Accredited Social Health Activists (ASHAs) being limited by lack of institutional support in a hierarchical health system, a remuneration structure that privileges delivery of services rather than affecting broader social change and challenges in fomenting community participation.[27 51 52] Even in an early review of CHW programmes in Botswana, Colombia and Sri Lanka—in the era of CHWs with a 'generalist' mandate—Gilson *et al* concluded that CHWs acted primarily as service extenders, rather than change agents.[53] This disconnect between rhetoric and reality can be due to unrealistic expectations of CHW programmes; poor implementation of programmes as they are designed; donor prioritisation of the service extender role, rather than the change agent role; and programme design that does not address the underlying drivers of health inequities, including power relations.[8 53–55]

It is important to note that there are many examples of NGO-employed community-based health workers who act as social change agents. For example, in Guatemala, NGO-employed Community Defenders collect individual complaints about barriers and discrimination experienced while seeking healthcare. They then use this evidence to advocate for municipal, provincial and national government action to address violations of the state's right to health commitments.[56 57] However, NGO-run CHW programmes are rarely national in scope. They can serve an important demonstration purpose and highlight issues to be addressed on a subnational or national policy level, but, with isolated exceptions (such as Bangladesh, where an NGO works with the government to support CHWs), they are rarely in a position to address population needs on a broad scale.[58]

Having defined the three key bridging functions CHWs are often envisioned to provide, we now examine a series of factors that may shape the CHW role in the accountability ecosystem. Table 1 summarises these findings, which we then examine serially in the narrative.

Local political context

Our literature review surfaced ways in which the local political context influences the design and implementation of CHW programmes, including, for example, whether or not CHWs are able to realise a change agent role. We synthesise those that were most prominent in the literature here, and discuss their implications for accountability.

First, politicians may be champions or hindrances for CHW programmes. Given the 'moral legitimacy that attaches to healthcare',[59] it is perhaps unsurprising that politicians are often outwardly supportive of CHW programmes, even treating the provision of health services as a platform for political propaganda.[59] Sustained political support has been posited as one of five key governance 'outputs' essential for effective governance of national CHW programmes in an empirically derived framework.[60] Nonetheless, while political support can ensure consistent funding, political interference in a programme can undermine equity-oriented downward accountability. Examples include inappropriate selection of CHWs through political patronage, or locating CHWs in areas where demand for, and ownership of, the programme is weak, motivated by political favouritism or efforts to build political support in new communities.[5 44 58 61] Two large literature reviews regarding CHW programmes concluded that these programmes are comparatively less vulnerable to the 'moods of policy swings' (as compared with other health services) and more likely to produce positive outcomes where there is a high degree of community ownership or embeddedness.[1 62] The literature suggests that ensuring community ownership and embedding CHW programmes into local power structures can be more difficult to achieve in national, centrally planned programmes as compared with in smaller programmes that emerge locally, usually affiliated with non-governmental organisation (NGOs) or churches.[1 63]

Relatedly, meaningful community participation in CHW programmes is also influenced by the local political context.[63] The spirit of community participation can be undermined by authoritative regimes, leading programmes to become more coercive than participatory in nature. Indeed, in conditions of strong antistate sentiment or authoritarian rule, government-affiliated CHWs can be perceived as agents of state surveillance, as was reported as part of an evaluation of a primary healthcare programme implemented in repopulated villages of a former war zone in Chalatenango, El Salvador and in Pakistan, among others.[62–64]

Interactions with other community-based structures

The primary healthcare movement sought to vest authority for planning, managing and monitoring health activities in local bodies. In addition to CHWs, community-based structures that include community members such as community or Village Health Committees (VHCs) or teams are a common strategy to promote

Table 1 Key factors influencing CHW accountability ecosystems

Theme	Subtheme	Influence on accountability ecosystem
Local political context	Type of political regime	In political and bureaucratic systems that are characterised by informality, CHW recruitment and placement may be vulnerable to patronage, undercutting accountability for the equitable delivery of services. Less centralised regimes may prioritise community ownership, supporting downwards accountability and programme sustainability; the inverse is also true, in centralised regimes, CHWs may function as a mechanism for community accountability to the state. Regimes that prioritise upwards accountability can interfere in selection or placement of CHWs, leading to coercive programmes and community mistrust.
	Electoral cycle	The imperative to support healthcare as a voting issue can lead to politicians' concrete support of CHWs.
Interactions with other community-based structures	Formal linkages to VHCs/ similar local structures	Creating formal linkages with VHCs and similar, and/or making CHWs formally accountable to representative political structures can improve downward accountability.
	Democratic deficit	Engagement with local structures that feature a democratic deficit can reproduce processes of exclusions that shape ill health.
Treatment of CHWs by the health system	Quantum and approach to remuneration	Remuneration risks shifting CHW accountability toward the health hierarchy and away from the community, but lack of adequate, regular remuneration undermines CHW morale and commitment to job duties. Activity-based incentives can lead to 'behavioural distortions' that weaken commitment or attention to community priorities.
	Mode and focus of supervision	Punitive supervision, absent supervision or supervision for government (vs community) priorities promotes upward, and undermines downward accountability. Strong supervisory and programmatic support of female CHWs helps address/ overcome gender norms that may otherwise limit their mobility and autonomy.
	Resourcing and service delivery context	Provision of job enablers (medical kits, etc) can enhance community perceptions of CHWs' position in the health system, and trust in CHWs' ability to do their job. Quality of care at facilities to which CHWs refer people shapes community trust in CHWs and willingness to follow CHW advice.
	Relationships with other health providers	Respect/disrespect shown to CHWs by other health providers influences community trust and willingness to follow CHW advice; social status (incl. gender) and other power differentials play a role.
Community perceptions of CHWs	CHW qualifications	Lack of education or certification can undercut community belief that CHWs are capable of responding effectively to community needs. Well trained, qualified, and enabled CHWs can build trust in responsiveness of health system to community needs.
	CHW embeddedness	Acceptance may be greater when CHWs come from the communities they serve, but this can be complicated by caste, gender and other identities.
	Attention given to community priorities	Attention to government (vs community) priorities may undermine downward accountability. In settings where trust in government is low, the extent to which CHWs are perceived as being aligned with government may shape community perceptions of CHW motivation and action.
CHW professional associations/unionisation	Improved CHW job conditions	Collective action can result in better/more regular salary and other benefits that strengthen CHW motivation and performance. Better salary and professionalisation could cause communities to question CHWs' understanding of and commitment to community priorities.
	Opportunities for lobbying	Collective membership can enable CHWs to effectively lobby for better governmental consideration of community health priorities.

CHW, community health worker; VHC, Village Health Committees.

local engagement. VHCs and similar community-based structures are government-sanctioned entities that can provide formal opportunities for interface among actors such as local elected politicians; other community representatives; religious figures; and health providers from local facilities.[65 66]

CHW programmes can interface with VHCs in a number of different ways, some of which may influence CHWs' ability to facilitate upward or downward accountability. First, some global guidelines and norms recommend VHC participation in CHW selection, under the assumption that it would ensure CHWs' competence and local acceptability.[1] A CHW selected by a nurse at the local health facility may feel differently accountable from one selected by a participatory committee that includes community members. Second, in some countries

CHW engagement with community-based structures is mandated as part of the national CHW policy.[67] This engagement can result in pro-accountability actions; in Chhattisgarh, India, CHWs support community members to use Village Health Nutrition and Sanitation Committees as opportunities to collectively demand accountability in public service delivery.[68]

Also, in isolated instances, CHW programmes are formally embedded within local representative political structures. For example, in Chhattisgarh, India, CHWs are selected by village councils. Though these councils may suffer from some democratic deficit, the intent of having them select CHWs is to ensure that CHWs are accountable to the community, rather than to the health hierarchy.[48 68] As a result of their not being supervised by the local health system bureaucracy, CHWs are better able to advocate vis-à-vis that bureaucracy.[48 68]

Treatment of CHWs by the health system

The resourcing and relative position and autonomy of CHWs in a health system impact CHWs' ability to carry out their role, including explicit and implicit accountability functions.[63 69]

CHW programme remuneration and incentives (financial and otherwise) vary from country to country. Some programmes have been described as being deeply rooted in the spirit of volunteerism and thus provide no monetary payments whatsoever.[23] Others have questioned the ethics of voluntary CHW programmes that often recruit from among the most highly impoverished in society. Schneider[63] among others, brings evidence to bear on the importance of 'fair' remuneration policies and incentive systems as a basis for sustained national programming.[70 71] Reflecting both ideological and operational debates regarding CHW remuneration, Closser's ethnographic work explores conflicts in how CHWs perceive themselves versus how the health system frames their role. In Pakistan, Female Heath Workers view their role as a job, and they need and expect to be remunerated and recognised (eg, through regularised conditions) as government employees. By contrast, the governmental programme to eradicate polio frames Female Health Workers as 'heroes' carrying out volunteer work to save children's lives.[72] With respect to promoting accountability, Ormel *et al* highlight the tension between CHW payment as a means through which to hold CHWs to account, but that might leave CHWs feeling more accountable to the health system than their communities.[73] Mohajer and Singh posit that the solution may lie in a two-cadre model: one that is full-time and paid, and the other part-time and volunteer, each with distinct scopes of practice.[41]

Different approaches to remuneration have relative strengths and weakness that, depending on the context, may produce either desirable or undesirable outcomes.[61 74–76] WHO recommends that remuneration be 'commensurate to the job demands, complexity, number of hours, training and roles that they undertake'.[50] A number of CHW programmes have encountered issues with delayed payment[26 73 77 78] or CHW dissatisfaction with the level of salary or incentives (financial or material) they receive, in some cases contributing to demotivation, poorer performance, and CHWs demanding informal payments.[26 73 77 79 80] There is evidence to suggest that failure to deliver promised incentives is of greater concern to CHWs than the value of the incentives themselves.[73]

Another important programme design concern related to remuneration and accountability is the payment of incentives to CHWs on completion of certain tasks or outcomes, such as accompanying women in labour to facilities and immunising children. Whereas Andreoni *et al* apply an economics lens to show how tailored contracts can incentivise desired outcomes[81] in a working paper on pay-for-performance incentives (not specific to CHWs), Miller and Babiarz outline a variety of 'behavioural distortions' that can arise from contracting certain outcomes: workers can focus their efforts disproportionately on the contracted outcomes, thereby crowding out other important but non-contracted activities[82]; when making decisions between multiple contracted outcomes, workers might focus on those with the highest marginal return (ie, greatest financial reward for least effort); and, they can choose to prioritise patients who are most likely to produce the desired outcomes, that is, cherry-picking healthier people who live in less remote settings.[83–85] Some of these concerns have been borne out in large government-run CHW programmes in LMICs.[75] Indeed, evidence from India consistently supports the conclusion that when CHWs encounter incentive-based payments, they focus their efforts on the incentivised activities (usually biomedical care) and neglect other tasks (such as social activism).[26 27 44 66 68]

Supervision is a common challenge, with implications for both downward and upward accountability. Inadequate or inappropriate supervision, such as supervisors not visiting employee work sites or supervisory overemphasis on data reporting, can demotivate CHWs.[47 73 75 80 86] CHW perceptions of supervision have also been shown to predict job satisfaction, organisational and community commitment, work conscientiousness and performance.[87 88] A trial of team-based goal setting for CHWs in Bihar in which health workers worked in teams towards collective goals and were rewarded with public recognition and non-financial incentives demonstrated improvements in motivation and performance.[89] Other alternative approaches to supervision such as community supervision (community defines expectations, tracks performance and provides feedback), group supervision (supervisory visits include multiple CHWs, who can work together to find creative solutions to shared problems) and peer supervision are also being tested,[9 90 91] but these remain areas for further research, according to a recent literature and consultative review.[61]

Medicine and equipment shortages among CHWs or at facilities and poor quality of care in facilities limit

CHWs' ability to perform their duties and gain community trust.[10 26 40 44 73 79 92] CHWs regularly refer patients to health facilities for further care, and if those clinical services are not available when they arrive or providers reject or ignore CHW referrals, the CHW's credibility can be damaged.[26 27 88] In Malawi, CHWs facing supply shortages reported purposefully avoiding their communities and CHW duties rather than dealing with community dissatisfaction.[86]

CHWs may also feel disrespected by health providers, which can be detrimental to the formation of positive working relationships that enable CHWs to fulfil the cultural broker or social change agent role. In Zambia, CHWs have reported feeling that facility staff did not consider them to be part of the service delivery team, or did not trust them to dispense drugs or even to be in the dispensary alone.[79] CHWs in Malawi and Australia felt nurses considered them inferior because their work was perceived to be less important[28 86] or because they were less educated.[93] Not only can disrespectful treatment of CHWs harm their relationships with health providers, it can also negatively impact CHW performance[44 88] and degrade community trust in the health system more broadly.[86 94]

CHW treatment by the health system is gendered. In many contexts, CHWs are primarily—if not exclusively—women. Bias can manifest in normalised poor treatment by fellow healthcare workers, including sexual harassment and general disrespect from male colleagues.[95 96] CHW programmes can explicitly address gender dynamics within the health systems and communities at large, through activities such as strong supervisory support.[38 97] Failure to address or accommodate gender hierarchies can lead to high rates of absenteeism due do social limitations on women's mobility.[37]

Community perceptions of CHWs

CHWs commonly report that they feel respected or appreciated by the community for their role as a CHW,[10 98 99] however, there are a number of contextual factors that can influence the CHW–community relationship. Community perceptions of CHWs' motivation and competence shape their willingness to communicate with and to listen to CHWs, which in turn shapes CHW ability to fulfil the role of service extender, cultural broker or social change agent. The embeddedness of CHW programmes is widely understood to shape community acceptance and relevance.[38] We identified empirical support for the importance of embeddedness, as well as several factors that complicate this assumption.

Acceptance may be greater when CHWs are from the community they serve, have higher levels of training, were selected by the community, and have some medical or other resources at their disposal.[1 26 40 100 101] Interestingly, a study in Uganda found community acceptability to be adversely affected by CHWs' low levels of education and social status, characteristics that are often expected to improve acceptance by making CHWs more relatable and less intimidating than health facility staff. Community acceptance in this study increased as CHWs gained more experience.[99] Similarly, Grossman-Kahn *et al* found the informality of the Brazilian CHW role to result in lower community regard, and proposed that formal certification may increase community confidence in CHWs.[40] These studies suggest that professionalising CHWs may not inherently impair embeddedness. Furthermore, the gender, caste, HIV status and other attributes of CHWs can also shape the way they are received by various communities.[100–102]

There is also evidence that when communities perceive CHWs to be affiliated with state actors whose interests differ from patients', they are less likely to be understood as boosting health system accountability to patients. In India, CHWs are incentivised to encourage women to deliver in facilities even though this may contradict the preferences of some patients.[103 104] The fact that CHWs promote services that reflect health system priorities aligns them with the health system in the eyes of the community.[27 44 52] Direct government interference can further align them with the government and undercut CHW fulfilment of their mandate. For instance, CHWs in Ethiopia are sometimes made to participate in work in areas unrelated to their health duties at the request of government administrators from other sectors: 'Sometimes we are involved in the activities coming from women affairs and the education sector. We are also involved in political matters. We are quarrelling many times with people about these things. If we are not involved in these activities, they cut our salary'.[105] In contrast, in Thailand, seeing CHWs work alongside public health professionals increased CHW credibility in the eyes of the community.[6] The extent to which health system affiliation damages community perceptions of CHWs may depend in part on whether or not the community has a history of mistrusting the government.[106 107]

CHW professional associations/unionisation

In some countries, CHWs have unionised or formed professional associations to advocate for labour rights and other policy changes. Collective voice or action may be especially difficult, but potentially impactful, in hierarchical government health systems, especially among CHWs who occupy low-status positions both in the health system and in society more broadly.

In India, ASHAs have staged a number of protests and strikes at both the state and national levels seeking increased wages and permanent government employee status.[108 109] Their efforts have resulted in some successes, such as securing social security and maternity benefits, increased wages, accident benefits and life insurance coverage.[38 110] Meanwhile, the All Pakistan Ladies Health Workers Welfare Association has pursued a legal strategy rather than political advocacy, resulting in a number of favourable rulings from Pakistan's Supreme Court.[72 111] In the USA, the Massachusetts Association of CHWs has on two occasions drafted legislation that was ultimately

passed, one of which reformed state law to require the Massachusetts Department of Public Health to develop recommendations for building a sustainable CHW workforce.[112] CHW associations also exist in Australia, Brazil, Nepal, Niger, Nigeria, Peru, Romania and South Africa, with varying remits, membership coverage and achievements.[113]

However, in order to engage the state as a collective, CHWs must have adequate self-efficacy and political space. Closser *et al* explored the discourses and experience of empowerment among unpaid female CHWs in Ethiopia.[114] Their work and Mlotshwa *et al* identified positive experiences in relation to mobility and self-actualization, but described how requiring women to work without compensation on predetermined tasks reinforced gender hierarchies and limited the female CHWs' ability to exercise political power or gain authority within the health system.[101 115]

It is unclear whether and under what conditions CHW organising promotes community interests. Community interests may be served simply by the virtue of better morale among CHWs, or through more direct action, such as CHWs lobbying for greater or more appropriate resource allocation to the community. However, much of the organising described above focused on labour rights, and did not engage larger questions of the political determinants of health inequalities. There has been some discussion in the Indian context about lack of civil society support for CHW organising, as community members are CHW service recipients rather than CHW labour rights allies.[110] In Chhattisgarh, India, volunteer CHWs are attempting to unionise for government employment, which some feel would take them further away from the community and embed them more firmly in the government.[48]

DISCUSSION

Summary of findings

The CHW linking role can be understood on a continuum, from service extender to social change agent, with service extenders extending the reach of the current health system, and social change agents effecting change in the health system and in other social determinants of health. CHW fulfilment of these linking functions has implications for the type of accountability they engender. Service extenders may improve coverage and access to preventive and curative services, potentially in a way that promotes equity. Social change agents can provide these biomedical services and address some of the social determinants of health, potentially by creating a source of countervailing power at the community level. In a social change agent scenario, CHWs are grassroots representatives of community interests, and they leverage their official position and access to make demands on the state. However, the social change agent function may only be feasible in situations where the political context allows for CHWs to both represent and counteract the state.

Our synthesis addresses a number of factors that shape CHWs' role in the accountability ecosystem. Some of these factors—such as supervision and remuneration—are typically addressed in studies, reviews and recommendations related to CHWs. Other factors—such as unionisation and other forms of collective action—are less commonly included. Many papers reviewed raised the prospect that there may exist inherent tensions between downward and upward accountability in the CHW role. Reality is more complex than just upward versus downward, however. Multiple accountabilities may coexist, with CHWs balancing demands from their communities, the government, and other actors with power, such as local politicians.

Analytical propositions

These propositions are mid-level theories, representing aggregation and synthesis of the findings.

Though we presented the findings in a serial fashion, the themes identified are all inter-related and self-reinforcing. For example, the degree of CHW embeddedness is a feature of programme design, but this feature can promote CHW effectiveness, which in turn reinforces their embeddedness in the community.

CHWs are part of the community health system, but the ways CHWs promote accountability depends heavily on the type of governance at local and national level. Our synthesis certainly showed that many of the functions traditionally included in health systems stewardship are important for CHW accountability. However, here, we are concerned with more micro attributes of governance, such as decision space within the health sector, government tolerance for input and dissent, and to what extent the government's approach to development is 'top down.' State intent is key; the government may want the CHW programme to effect transformative change, surveil community members, or something in the middle. Even local or programmatic decisions like incentive structures can be one way to communicate state intent. Mohajer and Singh suggest that the creation of more than one cadre or more decentralised cadres may help to address some of the inherent tensions related to CHWs and accountability.[41] This approach may be especially pertinent in settings where mistrust of the national government is high. Indeed, as the discussion of CHWs' treatment by the health system and labour organising reveals, CHWs can more successfully act as agents of accountability when the state is accountable to them.

Community embeddedness, as defined by acceptability, social connections and expertise, is a crucial attribute of CHW ability to foment local government accountability to communities. Embeddedness does not shape CHW influence over the local health sector, but it does shape their ability to change behaviours within the community and to learn about community priorities. However, the determinants of acceptability vary by context, and seem to be related to community trust in the government. Fostering embeddedness is also not simple, as it relates

to all elements of the programme, ranging from funding, scope of practice, training and in-built mechanisms for interactions with other community structures. Jonathan Fox proposes the notion of 'vertical accountability,' as the idea that civil society efforts to instigate institutional change are most effective when they have explicit strategies to address power structures at multiple levels.[115] State intent and capacity may direct and support CHWs to be agents of downward accountability, but without community acceptance and participation there is little hope for transformative change. Meanwhile, embeddedness facilitates CHW effectiveness at the community level, but not necessarily above that. We do not expect that a government-run CHW programme should have the same accountability objectives as a civil society monitoring effort, but the conceptual model of vertical accountability suggests that a framework for accountability and CHWs might include embeddedness, collective action among CHWs above the level of the local health facility, and the political context.

While national governance and community embeddedness matter greatly, CHW ability to function in all three roles also depends on the human resource and material capacity of the local health system. While national governance and community embeddedness matter greatly, CHW ability to function in all three roles also depends on the human resource and material capacity of the local health system. The local health system is generally responsible for providing CHWs with supervision and payment; competently and respectfully receiving patients CHWs refer; facilitating CHWs' service extender and cultural broker roles; and, demonstrating respect for CHWs' role. Where such support is not present, it can undercut achievement of coverage objectives, as well as community trust and respect for CHWs.

Future research

The accountability framing raised many questions that were unanswered by extant research.

While there is significant literature on what CHWs do and what challenges they face in completing their mandated tasks, there is much less emic literature on what CHWs want, including whether and how CHWs want to foster health system accountability to communities. Perhaps many seek professional status and training, and are not interested in acting beyond the service extender role, such as representing the priorities of the communities they serve or galvanising action on the social determinants of health. If they do want to act as social change agents, we need to know more about what political conditions allow CHWs to create countervailing power that pushes the state to go further in delivering quality services and in addressing community priorities. Existing research on CHW unionisation focuses on their advocacy for improved working conditions. We need to understand more about if and how CHW engagement of the state as a collective actor fosters stronger alliances with the populations they serve, or takes CHWs further away from the community, due to professionalisation and their wielding political power. This is related to some of the conflicting findings on embeddedness; to what extent does CHWs mirroring the demographic and social make up of their communities engender trust and/or reproduce harmful social hierarchies? Local level, contextualised research and action is needed.

In addition, there are several pertinent research questions that could be explored by integrating health systems research approaches with accountability research approaches. First, there is a larger political science literature on structures straddling the state and society. VHCs and similar entities can be such mechanisms. Cross synthesis and integration of existing and new CHW and community governance literature would help us to flesh out an ecology of state-society interface within and beyond health. This ecology is an integral backdrop to CHWs' functioning, particularly for the social change agent end of the linking continuum. Second, group or peer supervision of CHWs and incentive structures that reward community accountability emerged as potentially innovative approaches for more adaptive, locally driven CHW programmes. Assessing the impact of such programmes from a public health and accountability perspective would shed light on their ability to improve programme outcome metrics and accomplish broader human rights and governance goals.

CONCLUSION

In summary, our synthesis raises conceptual questions and describes relevant findings in peer-reviewed literature. We build on strong health systems research to propose areas for future research and to suggest political economy lenses that may further elucidate CHW decision space and accountability functions. Whether and how CHWs promote government accountability for service delivery is inevitably tied to the larger political and technical objectives and capacity of the state.

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REFERENCES

1 Lehmann U, Sanders D. *Community health workers: what do we know about them. The state of the evidence on programmes, activities, costs and impact on health outcomes of using community health workers*. Geneva: World Health Organization, 2007.
2 Dixon-Woods M, Cavers D, Agarwal S, *et al*. Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups. *BMC Med Res Methodol* 2006;6:35.
3 Berman P. Community-based health programmes in Indonesia: the challenge of supporting a national expansion. In: Frankel S, ed. *The community health worker: effective programmes for developing countries*. Oxford, England: Oxford University Press, 1992: 63–87.
4 Desai PB. Community health work: India's experience. In: Frankel S, ed. *The community health worker: effective programmes for developing countries*. Oxford, England: Oxford University Press, 1992: 125–55.
5 Walt G. *Community health workers in national programmes: just another pair of hands?* Milton Keynes, Buckinghamshire, UK: Open University Press, 1990.
6 Kowitt SD, Emmerling D, Fisher EB, *et al*. Community health workers as agents of health promotion: analyzing Thailand's village health volunteer program. *J Community Health* 2015;40:780–8.
7 Packard RM. *A history of global health: interventions into the lives of other peoples*. Baltimore: JHU Press, 2016.
8 Colvin CJ, Swartz A. Extension agents or agents of change? community health workers and the politics of care work in postapartheid South Africa. *Ann Anthropol Pract* 2015;39:29–41.
9 Perry H, Crigler L. Developing and strengthening community health worker programs at scale. A reference guide and case studies for program managers and policymakers. USAID/MCHIP, 2014. Available: https://www.mchip.net/sites/default/files/mchipfiles/MCHIP_CHW%20Ref%20Guide.pdf [Accessed 15 Mar 2019].
10 Bhutta ZA, Lassi ZS, Pariyo G, *et al*. *Global experience of community health workers for delivery of health related millennium development goals: a systematic review, country case studies, and recommendations for integration into National health systems*. Geneva, Switzerland: WHO, Global Health Workforce Alliance, 2010.
11 Gilmore B, McAuliffe E. Effectiveness of community health workers delivering preventive interventions for maternal and child health in low- and middle-income countries: a systematic review. *BMC Public Health* 2013;13:847.
12 Perry H, Zulliger R, Scott K, *et al*. *Case studies of large-scale community health worker programs: examples from Afghanistan, Bangladesh, Brazil, Ethiopia, niger, India, Indonesia, Iran, Nepal, Pakistan, Rwanda, Zambia, and Zimbabwe*. Washington, DC, USA: Jhpiego Corporation, 2017.
13 Perry HB, Zulliger R, Rogers MM. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annu Rev Public Health* 2014;35:399–421.
14 Schedler A. Conceptualizing Accountability. In: Schedler A, Diamond L, Plattner MF, eds. *The Self-Restraining state: power and accountability in new Democracies*. Boulder: Lynne Rienner Publishers, 1999: 13–28.
15 Freedman LP, Schaaf M. Act global, but think local: accountability at the frontlines. *Reprod Health Matters* 2013;21:103–12.
16 O'Connell L. Program accountability as an emergent property: the role of stakeholders in a program's field. *Public Adm Rev* 2005;65:85–93.
17 Chynoweth SK, Zwi AB, Whelan AK. Socializing accountability in humanitarian settings: a proposed framework. *World Dev* 2018;109:149–62.
18 Murthy RK, Klugman B. Service accountability and community participation in the context of health sector reforms in Asia: implications for sexual and reproductive health services. *Health Policy Plan* 2004;19:i78–86.
19 George A. 'By papers and pens, you can only do so much': views about accountability and human resource management from Indian government health administrators and workers. *Int J Health Plann Manage* 2009;24:205–24.
20 National Health Mission [India]. About accredited social health activist (ASHA). Ministry of health and family welfare, government of India website, 2014. Available: http://nhm.gov.in/communitisation/asha/about-asha.html [Accessed Mar 2018].
21 Standing H, Chowdhury AMR. Producing effective knowledge agents in a pluralistic environment: what future for community health workers? *Soc Sci Med* 2008;66:2096–107.
22 Druetz T, Ridde V, Kouanda S, *et al*. Utilization of community health workers for malaria treatment: results from a three-year panel study in the districts of Kaya and Zorgho, Burkina Faso. *Malar J* 2015;14:71.
23 Glenton C, Scheel IB, Pradhan S, *et al*. The female community health volunteer programme in Nepal: decision makers' perceptions of volunteerism, payment and other incentives. *Soc Sci Med* 2010;70:1920–7.
24 Maes K. Community health workers and social change: an introduction. *Ann Anthropol Pract* 2015;39:1–5.
25 Dias J, Tomé T. Inverted State and Citizens' Roles in the Mozambican Health Sector, 2018. Available: https://bulletin.ids.ac.uk/index.php/idsbo/article/view/2964 [Accessed 30 Dec 2019].
26 Saprii L, Richards E, Kokho P, *et al*. Community health workers in rural India: analysing the opportunities and challenges accredited social health activists (ASHAs) face in realising their multiple roles. *Hum Resour Health* 2015;13:95.
27 Scott K, Shanker S. Tying their hands? institutional obstacles to the success of the ASHA community health worker programme in rural North India. *AIDS Care* 2010;22:1606–12.
28 Topp SM, Edelman A, Taylor S. "We are everything to everyone": a systematic review of factors influencing the accountability relationships of Aboriginal and Torres Strait Islander health workers (AHWs) in the Australian health system. *Int J Equity Health* 2018;17:67.
29 De Koning KO, Kok M, Ormel H, *et al*. A common analytical framework on factors influencing performance of close-to-community providers. kit Royal tropical Institute, 2014. Available: http://www.reachoutconsortium.org/media/2859/reachout-inter-country-analysis-and-framework-report.pdf [Accessed 30 Dec 2019].
30 Heaton J, Corden A, Parker G. 'Continuity of care': a critical interpretive synthesis of how the concept was elaborated by a national research programme. *Int J Integr Care* 2012;12:e12.
31 Ako-Arrey DE, Brouwers MC, Lavis JN, *et al*. Health systems guidance appraisal—a critical interpretive synthesis. *Implement Sci* 2015;11:9.
32 Moat KA, Lavis JN, Abelson J. How contexts and issues influence the use of policy-relevant research syntheses: a critical interpretive synthesis. *Milbank Q* 2013;91:604–48.
33 Greenhalgh T, Robert G, Macfarlane F, *et al*. Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review. *Soc Sci Med* 2005;61:417–30.
34 Schaaf M, Fox J, Topp SM, *et al*. Community health workers and accountability: reflections from an international "think-in". *Int J Equity Health* 2018;17:66.
35 McCollum R, Gomez W, Theobald S, *et al*. How equitable are community health worker programmes and which programme features influence equity of community health worker services? A systematic review. *BMC Public Health* 2016;16:419.
36 Blanchard AK, Prost A, Houweling TAJ. Effects of community health worker interventions on socioeconomic inequities in maternal and newborn health in low-income and middle-income countries: a mixed-methods systematic review. *BMJ Glob Health* 2019;4:e001308.
37 Mumtaz Z, Salway S, Nykiforuk C, *et al*. The role of social geography on lady health workers' mobility and effectiveness in Pakistan. *Soc Sci Med* 2013;91:48–57.
38 Ved R, Scott K, Gupta G, *et al*. How are gender inequalities facing India's one million ASHAs being addressed? policy origins and adaptations for the world's largest all-female community health worker programme. *Hum Resour Health* 2019;17:3.
39 McKenna B, Fernbacher S, Furness T, *et al*. "Cultural brokerage" and beyond: piloting the role of an urban Aboriginal Mental Health Liaison Officer. *BMC Public Health* 2015;15:881.

40 Grossman-Kahn R, Schoen J, Mallett JW, *et al*. Challenges facing community health workers in Brazil's family health strategy: a qualitative study. *Int J Health Plann Manage* 2018;33:309–20.
41 Mohajer N, Singh D. Factors enabling community health workers and volunteers to overcome socio-cultural barriers to behaviour change: meta-synthesis using the concept of social capital. *Hum Resour Health* 2018;16:63.
42 Roman G, Gramma R, Enache A, *et al*. The health mediators-qualified interpreters contributing to health care quality among Romanian Roma patients. *Med Health Care Philos* 2013;16:843–56.
43 Bilal NK, Herbst CH, Zhao F. Health extension workers in Ethiopia: improved access and coverage for the rural poor. In: *Yes Africa can: success stories from a dynamic continent*. , 2011: 24, 433–43.
44 Musinguzi LK, Turinawe EB, Rwemisisi JT, *et al*. Linking communities to formal health care providers through village health teams in rural Uganda: lessons from linking social capital. *Hum Resour Health* 2017;15:4.
45 Schaaf M. *Mediating Romani health. policy and program opportunities*. New York: Open Society Institute, 2004. https://www.opensocietyfoundations.org/uploads/f2ec2de8-eda8-494a-9ce9-4e969acb2368/roma_health_mediators.pdf
46 Lehmann U, Friedman I, Sanders D. Review of the utilisation and effectiveness of community-based health workers in Africa. global health trust, joint learning initiative on human resources for health and development (JLI), JLI working paper, 2004. Available: https://pdfs.semanticscholar.org/7a0c/fd44975b00b045c7957c9327a87c9fcc6b63.pdf [Accessed 30 Dec 2019].
47 Kane S, Kok M, Ormel H, *et al*. Limits and opportunities to community health worker empowerment: a multi-country comparative study. *Soc Sci Med* 2016;164:27–34.
48 Nandi S, Schneider H. Addressing the social determinants of health: a case study from the Mitanin (community health worker) programme in India. *Health Policy Plan* 2014;29:ii71–81.
49 Werner D. *The village health worker: lackey or liberator?* Palo Alto, California, USA: Hesperian Foundation, 1981.
50 Cometto G, Ford N, Pfaffman-Zambruni J, *et al*. Health policy and system support to optimise community health worker programmes: an abridged who guideline. *Lancet Glob Health* 2018;6:e1397–404.
51 Hamal M, Dieleman M, De Brouwere V, *et al*. How do accountability problems lead to maternal health inequities? A review of qualitative literature from Indian public sector. *Public Health Rev* 2018;39:9.
52 Joshi SR, George M. Healthcare through community participation: role of ASHAs. *Econ Polit Wkly* 2012;10:70–6.
53 Gilson L, Walt G, Heggenhougen K, *et al*. National community health worker programs: how can they be strengthened? *J Public Health Policy* 1989;10:518–32.
54 Maes K, Closser S, Vorel E, *et al*. Using community health workers: discipline and hierarchy in Ethiopia's women's development army. *Ann Anthropol Pract* 2015;39:42–57.
55 Kok MC, Kane SS, Tulloch O, *et al*. How does context influence performance of community health workers in low- and middle-income countries? Evidence from the literature. *Health Res Policy Syst* 2015;13:13.
56 Flores W. Community Defenders of the right to health in Guatemala. community of practitioners on accountability and social action in health (COPASAH), 2015. Available: https://copasah.wordpress.com/2015/04/24/community-defenders-of-the-right-to-health-in-guatemala-walter-flores [Accessed 1 Jun 2018].
57 Hernández A, Ruano AL, Hurtig AK, *et al*. Pathways to accountability in rural Guatemala: a qualitative comparative analysis of citizen-led initiatives for the right to health of Indigenous populations. *World Dev* 2019;113:392–401.
58 Perry H, Zulliger R, Scott K. Case studies of large-scale community health worker programs: examples from Bangladesh, Brazil, Ethiopia, India, Iran, Nepal, and Pakistan. Afghanistan: community-based health care to the Ministry of public health, 2013. Available: https://www.mcsprogram.org/wp-content/uploads/2017/01/CHW-CaseStudies-Globes.pdf [Accessed 30 Dec 2019].
59 Smith-Nonini S. "Popular" health and the state: dialectics of the peace process in El Salvador. *Soc Sci Med* 1997;44:635–45.
60 Schneider H. The governance of national community health worker programmes in low- and middle-income countries: an empirically based framework of governance principles, purposes and tasks. *Int J Health Policy Manag* 2019;8:18.
61 Agarwal S, Kirk K, Sripad P, *et al*. Setting the global research agenda for community health systems: literature and consultative review. *Hum Resour Health* 2019;17:22.
62 Scott K, Beckham SW, Gross M, *et al*. What do we know about community-based health worker programs? A systematic review of existing reviews on community health workers. *Hum Resour Health* 2018;16:39.
63 Østebø MT, Cogburn MD, Mandani AS. The silencing of political context in health research in Ethiopia: why it should be a concern. *Health Policy Plan* 2017;33:258–70.
64 Closser S, Jooma R. Why we must provide better support for Pakistan's female frontline health workers. *PLoS Med* 2013;10:e1001528.
65 Kahssay HM, Taylor ME, Berman P, World Health Organization. Community health workers: the way forward. Available: https://apps.who.int/iris/handle/10665/42034 [Accessed 30 Dec 2019].
66 Singh R, Purohit B. Limitations in the functioning of village health and sanitation committees in a North Western state in India. *Int J Med Public Health* 2012;2:39–46.
67 Kok MC, Ormel H, Broerse JEW, *et al*. Optimising the benefits of community health workers' unique position between communities and the health sector: a comparative analysis of factors shaping relationships in four countries. *Glob Public Health* 2017;12:1404–32.
68 Garg S, Pande S. Learning to sustain change: Mitanin community health workers promote public accountability in India. accountability research center, 2018. Available: https://accountabilityresearch.org/publication/learning-to-sustain-change-mitanin-community-health-workers-promote-public-accountability-in-india/ [Accessed 30 Dec 2019].
69 Scott K, George AS, Ved RR. 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 Res Policy Syst* 2019;17:29.
70 Maes K, Closser S, Tesfaye Y, *et al*. Volunteers in Ethiopia's women's development army are more deprived and distressed than their neighbors: cross-sectional survey data from rural Ethiopia. *BMC Public Health* 2018;18:258.
71 Maes K, Closser S, Tesfaye Y, *et al*. Psychosocial distress among unpaid community health workers in rural Ethiopia: comparing leaders in Ethiopia's women's development army to their Peers. *Soc Sci Med* 2019;230:138–46.
72 Closser S. Pakistan's lady health worker labor movement and the moral economy of heroism. *Ann Anthropol Pract* 2015;39:16–28.
73 Ormel H, Kok M, Kane S, *et al*. Salaried and voluntary community health workers: exploring how incentives and expectation gaps influence motivation. *Hum Resour Health* 2019;17:59.
74 Bhattacharyya K, Winch P, LeBan K. Community Health Worker Incentives and Disincentives: How They Affect Motivation, Retention, and Sustainability. In: *Basic support for Institutionalizing child survival project (basics II)*. Arlington, VA, USA: United States Agency for International Development (USAID), 2020.
75 Singh D, Negin J, Otim M, *et al*. The effect of payment and incentives on motivation and focus of community health workers: five case studies from low- and middle-income countries. *Hum Resour Health* 2015;13:58.
76 Vareilles G, Pommier J, Marchal B, *et al*. Understanding the performance of community health volunteers involved in the delivery of health programmes in underserved areas: a realist synthesis. *Implement Sci* 2017;12:22.
77 Oxford Policy Management (OPM). *Lady health worker programme: external evaluation of the National programme for family planning and primary health care: summary of results*. Islamabad, Pakistan: OPM Ltd, 2009. https://www.opml.co.uk/files/Publications/6241-evaluating-lady-health-worker-programme/lhw-4th-evaluation-summary-of-results.pdf?noredirect=1
78 Zulu JM, Kinsman J, Michelo C, *et al*. Hope and despair: community health assistants' experiences of working in a rural district in Zambia. *Hum Resour Health* 2014;12:30.
79 Topp SM, Price JE, Nanyangwe-Moyo T, *et al*. Motivations for entering and remaining in volunteer service: findings from a mixed-method survey among HIV caregivers in Zambia. *Hum Resour Health* 2015;13:72.
80 Kok MC, Dieleman M, Taegtmeyer M, *et al*. Which intervention design factors influence performance of community health workers in low- and middle-income countries? A systematic review. *Health Policy Plan* 2015;30:1207–27.
81 Andreoni J, Callen M, Khan Y, *et al*. *Using preference estimates to customize incentives: an application to polio vaccination drives in Pakistan*. National Bureau of Economic Research, 2016.
82 Miller G, Babiarz KS. *Pay-For-Performance incentives in low- and middle-income country health programs. (NBER working paper 18932)*. Cambridge, MA, USA: National Bureau of Economic Research, 2020.
83 Lohmann J, Houlfort N, De Allegri M. Crowding out or no crowding out? A Self-Determination theory approach to health worker motivation in Performance-based financing. *Soc Sci Med* 2016;169:1–8.

84 Alonge O, Lin S, Igusa T, *et al*. Improving health systems performance in low- and middle-income countries: a system dynamics model of the pay-for-performance initiative in Afghanistan. *Health Policy Plan* 2017;32:1417–26.
85 Smith S, Deveridge A, Berman J, *et al*. Task-shifting and prioritization: a situational analysis examining the role and experiences of community health workers in Malawi. *Hum Resour Health* 2014;12:24.
86 Kok MC, Namakhoma I, Nyirenda L, *et al*. Health surveillance assistants as intermediates between the community and health sector in Malawi: exploring how relationships influence performance. *BMC Health Serv Res* 2016;16:164.
87 Vallières F, Hyland P, McAuliffe E, *et al*. A new tool to measure approaches to supervision from the perspective of community health workers: a prospective, longitudinal, validation study in seven countries. *BMC Health Serv Res* 2018;18:806.
88 Ludwick T, Turyakira E, Kyomuhangi T, *et al*. Supportive supervision and constructive relationships with healthcare workers support CHW performance: use of a qualitative framework to evaluate CHW programming in Uganda. *Hum Resour Health* 2018;16:11.
89 Grant C, Nawal D, Guntur SM, *et al*. 'We pledge to improve the health of our entire community': improving health worker motivation and performance in Bihar, India through teamwork, recognition, and non-financial incentives. *PLoS One* 2018;13:e0203265.
90 Roberton T, Applegate J, Lefevre AE, *et al*. Initial experiences and innovations in supervising community health workers for maternal, newborn, and child health in Morogoro region, Tanzania. *Hum Resour Health* 2015;13:19.
91 Henry JV, Winters N, Lakati A, *et al*. Enhancing the supervision of community health workers with WhatsApp mobile messaging: qualitative findings from 2 low-resource settings in Kenya. *Glob Health Sci Pract* 2016;4:311–25.
92 National Health Systems Resource Centre (NHSRC) [India]. *ASHA: which way forward…? executive summary – evaluation of ASHA programme*. New Delhi, India: NHSRC, 2011. http://www.nipccd-earchive.wcd.nic.in/sites/default/files/PDF/Evaluation_of_ASHA_Program_2010-11_Report.pdf
93 Jackson D, Brady W, Stein I. Towards (re)conciliation: (re) constructing relationships between indigenous health workers and nurses. *J Adv Nurs* 1999;29:97–103.
94 Grant M, Wilford A, Haskins L, *et al*. Trust of community health workers influences the acceptance of community-based maternal and child health services. *Afr J Prim Health Care Fam Med* 2017;9:1–8.
95 Steege R, Taegtmeyer M, McCollum R, *et al*. How do gender relations affect the working lives of close to community health service providers? empirical research, a review and conceptual framework. *Soc Sci Med* 2018;209:1–3.
96 Mumtaz Z, Salway S, Waseem M, *et al*. Gender-Based barriers to primary health care provision in Pakistan: the experience of female providers. *Health Policy Plan* 2003;18:261–9.
97 Simmons R, Mita R, Koenig MA. Employment in family planning and women's status in Bangladesh. *Stud Fam Plann* 1992;23:97–109.
98 Geoffrey B, Lorna M, Clare K. Village health team functionality in Uganda: implications for community system effectiveness. *Sci J Pub Health* 2016;4:117–26.
99 Okuga M, Kemigisa M, Namutamba S, *et al*. Engaging community health workers in maternal and newborn care in eastern Uganda. *Glob Health Action* 2015;8:23968.
100 Panday S, Bissell P, Van Teijlingen E, *et al*. Perceived barriers to accessing Female Community Health Volunteers'(FCHV) services among ethnic minority women in Nepal: A qualitative study. *PloS one* 2019;10:e0217070.
101 Mlotshwa L, Harris B, Schneider H, *et al*. Exploring the perceptions and experiences of community health workers using role identity theory. *Glob Health Action* 2015;8:28045.
102 Musoke D, Ssemugabo C, Ndejjo R, *et al*. Reflecting strategic and conforming gendered experiences of community health workers using photovoice in rural Wakiso district, Uganda. *Hum Resour Health* 2018;16:41.
103 Gopalan SS, Durairaj V, Varatharajan D. Addressing maternal healthcare through demand side financial incentives: experience of Janani Suraksha Yojana program in India. *BMC Health Serv Res* 2012;12:319.
104 Mukhopadhyay DK, Mukhopadhyay S, Mallik S, *et al*. A study on utilization of Janani Suraksha Yojana and its association with institutional delivery in the state of West Bengal, India. *Indian J Public Health* 2016;60:118.
105 Kok MC, Kea AZ, Datiko DG, *et al*. A qualitative assessment of health extension workers' relationships with the community and health sector in Ethiopia: opportunities for enhancing maternal health performance. *Hum Resour Health* 2015;13:80.
106 Singh D, Cumming R, Negin J. Acceptability and trust of community health workers offering maternal and newborn health education in rural Uganda. *Health Educ Res* 2015;30:947–58.
107 Puett C, Alderman H, Sadler K, *et al*. 'Sometimes they fail to keep their faith in US': community health worker perceptions of structural barriers to quality of care and community utilisation of services in Bangladesh. *Matern Child Nutr* 2015;11:1011–22.
108 Express News Service. Asha workers protest, burn effigy of health minister. the Indian express, 2014. Available: http://indianexpress.com/article/cities/ludhiana/asha-workers-protest-burn-effigy-of-health-minister [Accessed 3 Mar 2017].
109 The Hindu. ASHA workers seek better wages. The Hindu, 2018. Available: http://www.thehindu.com/news/cities/Visakhapatnam/asha-workers-seek-better-wages/article23580905.ece [Accessed 3 Mar 2017].
110 Bhatia K. The contemporary Rights-based debate on community health workers: an analytical perspective from India. *Indian J Soc Work* 2019;80:141–8.
111 Daily Times. Ministers served notices for not regulating LHWs. daily times, 2017. Available: http://dailytimes.com.pk/islamabad/05-Apr-17/ministers-served-notices-for-not-regulating-lhws [Accessed 2 May 2017].
112 Mason T, Wilkinson GW, Nannini A, *et al*. Winning policy change to promote community health workers: lessons from Massachusetts in the health reform era. *Am J Public Health* 2011;101:2211–6.
113 National Academy for State Health Policy. State community health worker models, 2017. Available: https://nashp.org/state-community-health-worker-models/ [Accessed 2 Jan 2020].
114 Closser S, Napier H, Maes K, *et al*. Does volunteer community health work empower women? Evidence from Ethiopia's women's development army. *Health Policy Plan* 2019;34:298–306.
115 Fox JA. *Scaling accountability through vertically integrated civil society policy monitoring and advocacy*. Washington DC: Accountability Research Center, 2016.