Health Policy and Planning, **37**, 2022, 169–188
DOI: https://doi.org/10.1093/heapol/czab112
Advance access publication date: 14 September 2021
Original Article

Moving from community-based to health centre-based management: impact on urban community health worker performance in Ethiopia

Teralynn Ludwick[1,*], Misganu Endriyas[2], Alison Morgan[1,3], Sumit Kane[1] and Barbara McPake[1]

[1]Nossal Institute for Global Health,Melbourne School of Population and Global Health, University of Melbourne, Melbourne, 333 Exhibition Street, Carlton, Victoria, 3000 Australia
[2]Health Research and Technology Transfer Office, SNNPR State Health Bureau, Hawassa, Sidama, Ethiopia
[3]Global Financing Facility, The World Bank Group, Washington, DC, USA

*Corresponding author. Nossal Institute for Global Health, Melbourne School of Population and Global Health, University of Melbourne, Melbourne, 333 Exhibition Street, Carlton, Victoria, 3000 Australia. E-mail: t.ludwick@unimelb.edu.au

Accepted on 14 September 2021

Abstract

Community health worker (CHW) performance is influenced by the way in which management arrangements are configured vis-a-vis the community and health services. While low-/middle-income contexts are changing, the literature provides few examples of country efforts to strategically modify management arrangements to support evolving CHW roles (e.g. chronic disease care) and operating environments (e.g. urbanization). This paper aims to understand the performance implications of changing from community-based to health centre-based management, on Ethiopia's Urban Health Extension Professionals (UHEPs), and the tensions/trade-offs associated with the respective arrangements. We conducted semi-structured interviews/focus groups to gather perspectives and preferences from those involved with the transition (13 managers/administrators, 5 facility-based health workers and 20 UHEPs). Using qualitative content analysis, we deductively coded data to four programme elements impacted by changed management arrangements and known to affect CHW performance (work scope; community legitimacy; supervision/oversight/ownership and facility linkages) and inductively identified tensions/trade-offs. Community-based management was associated with wider work scope, stronger ownership/regular monitoring, weak technical support and weak health centre linkages, with opposite patterns observed for health centre-led management. Practical trade-offs included: heavy UHEP involvement in political/administrative activities under *Kebele*-based management; resistance to working with UHEPs by facility-based workers and health centre capacity constraints in managing UHEPs. Whereas the Ministry of Health/UHEPs favoured the health centre-led management to capitalize on UHEPs' technical skills, *Kebele* officials were vested in managing UHEPs and argued for community interests over UHEPs' professional interests; health facility managers/administrators held divided opinions. Management arrangements influence the nature of CHW contributions towards the achievement of health, development and political goals. Decisions about appropriate management arrangements should align with the nature of CHW roles and consider implementation setting, including urbanization, political decentralization and relative capacity of managing institutions.

Keywords: Community health workers, health auxiliary, urban, Ethiopia, healthcare teams, governance

Introduction

In many low- and middle-income countries (LMICs), including in sub-Saharan Africa, community health workers (CHWs) have become integral to primary healthcare service delivery and an important vehicle for moving towards universal health coverage in the context of significant health workforce shortages and other health system constraints (Frymus *et al.*, 2013; Tulenko *et al.*, 2013; Cometto *et al.*, 2018; Assefa *et al.*, 2019; Lehmann *et al.*, 2019; Perry and Hodgins, 2021). CHWs are individuals with typically less than 2 years training who deliver community-based promotive, preventive and (limited) curative health services on a paid or volunteer basis (Scott *et al.*, 2018). CHWs have shown to improve access to health services and health outcomes in many contexts (Lehmann and Sanders, 2007; van Ginneken *et al.*, 2010; Perry and Zulliger, 2012; Schneider *et al.*, 2016; Scott *et al.*, 2018). Despite widespread recognition that CHWs serve as an important building block for universal health coverage in many LMICs, reviews of large-scale programmes demonstrate that many programmes suffer from poor conceptualization, planning and management, with negative consequences for CHW performance (Tulenko *et al.*, 2013; Lehmann *et al.*, 2019). Among key recommendations for strengthening CHW performance in large-scale programmes is the need to focus on programme design and the way in which it supports effective people management and alignment with the local context (Agarwal *et al.*, 2019; Lehmann *et al.*, 2019).

Key messages

- Community health workers (CHWs) are important intermediaries between communities and health services. As CHWs take on new roles, such as members of health-care teams for chronic disease management, and the setting in which they work changes due to urbanization and other changes in low- and middle-income countries, CHWs may need to be managed differently in order to effectively perform their roles.
- Community-based management of CHWs in our study was associated with a wider scope of work, stronger ownership and regular monitoring, weak technical support and weak health centre linkages, with the opposite observed for the health centre-led management.
- Decision makers should consider the characteristics of the implementation setting in determining appropriate management arrangements, including urbanization, political decentralization and capacity of managing institutions at the community and facility level.
- Modifying management arrangements will require organizational change management strategies to address points of resistance and create the buy-in needed to support new ways of working.

Managing CHWs, and the many vertical and horizontal relationships that affect their performance, is complex (Rifkin, 1996; Abimbola *et al.*, 2014; Perry and Crigler, 2014). It involves negotiating shared responsibilities across different levels of government (health ministry to local government) and amongst a range of state and non-state actors, including NGOs, community and international actors (Schneider, 2019). CHWs need to be both embedded in community health systems and integrated in health service delivery systems in order to effectively fulfil their roles (Scott *et al.*, 2018; Lehmann *et al.*, 2019). The literature demonstrates that CHW performance is affected not only by their interactions with the health service delivery system (such as through supportive supervision and linkages with health facilities) but equally by their interactions with community health systems, including local political and civic groups (Lunsford *et al.*, 2015; Schneider and Lehmann, 2016; Kok *et al.*, 2017). Furthermore, features of the implementation setting, such as the economic and political context (e.g. administrative decentralization, capacity of health facilities/local governments to manage CHWs and historical programme legacies), influence and constrain how roles and responsibilities for managing CHWs are delineated between different actors, the strength of relationships between them and their effectiveness in supporting CHWs in their roles (van Ginneken *et al.*, 2010; Bovbjerg *et al.*, 2013; Perry and Crigler, 2014; Kok *et al.*, 2015b; Agarwal *et al.*, 2019; Assegaai and Schneider, 2019). Together, the 'hardware' features (technical design features), 'software' elements (relationships, norms, values, interests and power) and the context (e.g. economic and political environments) interact to influence CHW performance (Kok *et al.*, 2017). Thus, the effective management of CHW programmes must consider technical design features (e.g. oversight mechanisms, supervisory systems, communication and reporting structures), maintenance of relationships across health services and community systems and the interactions between technical elements, stakeholder relationships and the implementing context.

Policy guidance on large-scale CHW programmes suggests that management arrangements may need to be adapted for different settings within a given country and in response to changes in society, the health system and the evolution of CHW programmes (Perry and Crigler, 2014). Rapid urbanization, rising expectations of service quality, increase in non-communicable diseases (NCDs) and formalization of CHW roles, including through the integration of CHWs in interdisciplinary team models and career progression, are among the factors that are reshaping the roles of CHWs (Franklin *et al.*, 2015; Rachlis *et al.*, 2016; Do Valle Nascimento *et al.*, 2017; Cometto *et al.*, 2018; Ludwick *et al.*, 2020; Zebre *et al.*, 2021). These shifts have implications for the types of management structures that are needed to support CHWs and how deeply CHWs need to be embedded in clinical vs community structures. However, the CHW programme design, including management arrangements, has often not been adapted to reflect these changes (Wahl *et al.*, 2020). For example, in establishing new urban CHW cadres, several countries have largely replicated management arrangements (and other programme features) from their rural programmes (Government of India, 2014; Wang *et al.*, 2016). While overall the literature provides few examples of how countries have strategically attempted to modify management structures to support evolving CHW roles and changing operational environments, countries like South Africa and Ethiopia have begun doing so in the context of implementing new team-based CHW models (Schneider *et al.*, 2018; Mhlongo and Lutge, 2019; Ludwick *et al.*, 2021). Early studies from South Africa and Ethiopia suggest that management challenges (related to poor leadership, weak communications, change resistance, poor integration, underresourcing and understaffing and centralized approaches) have had significant negative effects on the implementation and performance of the outreach teams (Marcus *et al.*, 2017; Moosa *et al.*, 2017; Assegaai and Schneider, 2019; Nelson and Madiba, 2020; Ludwick *et al.*, 2021). Such cases can offer valuable lessons for informing policy decisions around tailoring management arrangements for different contexts and evolving CHW roles.

This study uses the transition of Ethiopia's Urban Health Extension Professionals (UHEPs) programme into Family Health Teams (FHTs) as a case study to compare and contrast two different management arrangements that were implemented in the same setting. Ethiopia's 2014–15 reform for urban primary care involved changes both to UHEP roles (as members of FHTs) and to the management structures responsible for overseeing the urban cadre in pilot sites. Drawing on the perspectives of UHEPs, facility-based health workers and health and municipal administrators who were involved with the transition to the FHTs, we aim to examine: (1) the influence of community-based and health centre-based management on four aspects of CHW performance (UHEP scope of work, community legitimacy, level of supervision, oversight and ownership and linkages with health centres); (2) the strengths, weaknesses and trade-offs of the two management arrangements in relation to the interests of different

stakeholders and (3) wider policy implications for determining appropriate and feasible management arrangements to support urban CHW cadres and CHW-integrated healthcare teams in LMICs.

Setting

Ethiopia is among the fastest urbanizing countries, with the urban population expected to triple from 2012 to 2037 to reach 42 million (Ermias *et al.*, 2019). Following the success of its rural-based programme, in 2009, Ethiopia launched the UHEP programme, which now serves over 400 cities (World Health Organization, 2017) (John Snow Inc., 2018a). In contrast to their rural counterparts who receive only 12 months training, UHEPs hold clinical nursing diplomas (10th grade education plus 3 years of college). As salaried workers employed by the Ministry of Health (MoH), UHEPs provide preventative and health promotion services in their catchments of approximately 500 households. The health extension packages developed by the MoH that define UHEP activities cover: hygiene and environmental health; family health; disease prevention and control; injury prevention and control and first aid (John Snow Inc, 2018a). Recently, these packages were extended to include chronic diseases and mental health (Hailemariam *et al.*, 2018). UHEPs are expected to spend 75% of their time on home visits and outreach activities (Molla *et al.*, 2020). They also provide referrals to health centres, which, in urban areas, provide basic outpatient and preventative services to catchments of about 40 000 people (World Health Organization, 2017).

For the last 30 years, Ethiopia's health sector has been characterized by a process of decentralization (Bergen *et al.*, 2019). Under the 2015–20 Health Sector Transformation Plan, district (*woreda*) health offices became largely responsible for actualizing national priorities in healthcare (Bergen *et al.*, 2019). As in rural areas, UHEPs in our study sites were based at *Kebele* offices (a subdivision of the *woreda/sub-cities* and lowest level of municipal administration). They were assigned supervisors from the health centre to provide technical support, with *Kebele* officials in charge of regular monitoring of UHEP activities. Coordination and review meetings between health centre, *Kebele* management and city administration were to be organized quarterly.

In 2014–15, the federal government began piloting FHTs as part of a primary healthcare reform to strengthen community-based, urban service provision for low-income and vulnerable households, including those with chronic diseases (John Snow Inc., 2018b). Chronic diseases now account for 39% of deaths in Ethiopia (World Health Organization, 2018; WHO Africa, 2019). At the same time, the reform was intended to respond to performance challenges faced by UHEPs, including weak health centre linkages, lack of professional development, low motivation and poor community satisfaction (Fetene *et al.*, 2016; John Snow Inc, 2018a; Molla *et al.*, 2020).

The reform called for three to five FHTs to be established per health centre in six selected pilot cities and to include: a family health doctor/health officer/Bachelor-degree-holding nurse as lead; five or six UHEPs; a social worker; and laboratory, pharmacy and administrative staff as needed. While previous policy called for UHEPs to cover all catchment households, FHTs focused on low-income and vulnerable households with prioritized health needs (pregnant women/young children; those with chronic diseases and elderly/bedridden). Teams were to be supplied with blood pressure monitors, glucometers, first aid kits and medicines as needed. On alternating days, FHTs were to be assigned either to outreach visits or to receiving FHT-referred clients in a dedicated outpatient room (John Snow Inc, 2018b). As part of FHT formation, the MoH recommended that the UHEPs' duty station be moved from *Kebele* administrative offices to health centres and for UHEPs to report directly to health centre-based administrators. Figure 1 presents the programme logic.

Methods

We used a qualitative, case study approach in which we compare and contrast the performance of Ethiopia's UHEPs under two different management arrangements—a health centre-based and a local government (*Kebele*) based one. Prior to the implementation of the FHTs, UHEPs were based in the community and reported directly to *Kebele* officials. With the implementation of the FHTs, the UHEP duty station and reporting lines were moved to health centres. Thus, the implementation of the FHTs presented a unique context where stakeholders had experiences operating under both local government and health centre-based management arrangements. This context allowed us to examine performance under each management arrangement, including the tensions and trade-offs resulting from respective arrangements. In their conceptualization of management roles, Shenhar and Renier outline three key responsibilities: responsibility for results and organizational interest; responsibility for people (working conditions, rewards, instilling motivation and professional development) and responsibility for relationships (informal/formal across groups and organizations) (Shenhar and Renier, 1996). In the context of change, managers are also important for managing change resistance, skill gaps and information (Tucker, 2017). With these broad roles in mind, we examine how management arrangements in the UHEP programme influence four key aspects of UHEP performance (scope of work, community legitimacy, level of supervision, oversight and ownership and linkages with health centres) in a changing work environment. Although grouped differently, these areas correspond with the four key programme areas outlined in the Program Assessment and Improvement Matrix (AIM CHW Tool)—a tool intended to help programme implementers assess programme functionality and improve performance (Figure 2) (Crigler *et al.*, 2013).

Using a qualitative approach to examine the perspectives of FHT members, their managers, and other administrators, our study investigates:

1. How did community-based vs health centre-based management influence UHEP scope of work, community legitimacy, level of supervision, oversight and ownership and health centre linkages?
2. What tensions and trade-offs are associated with the two management arrangements?

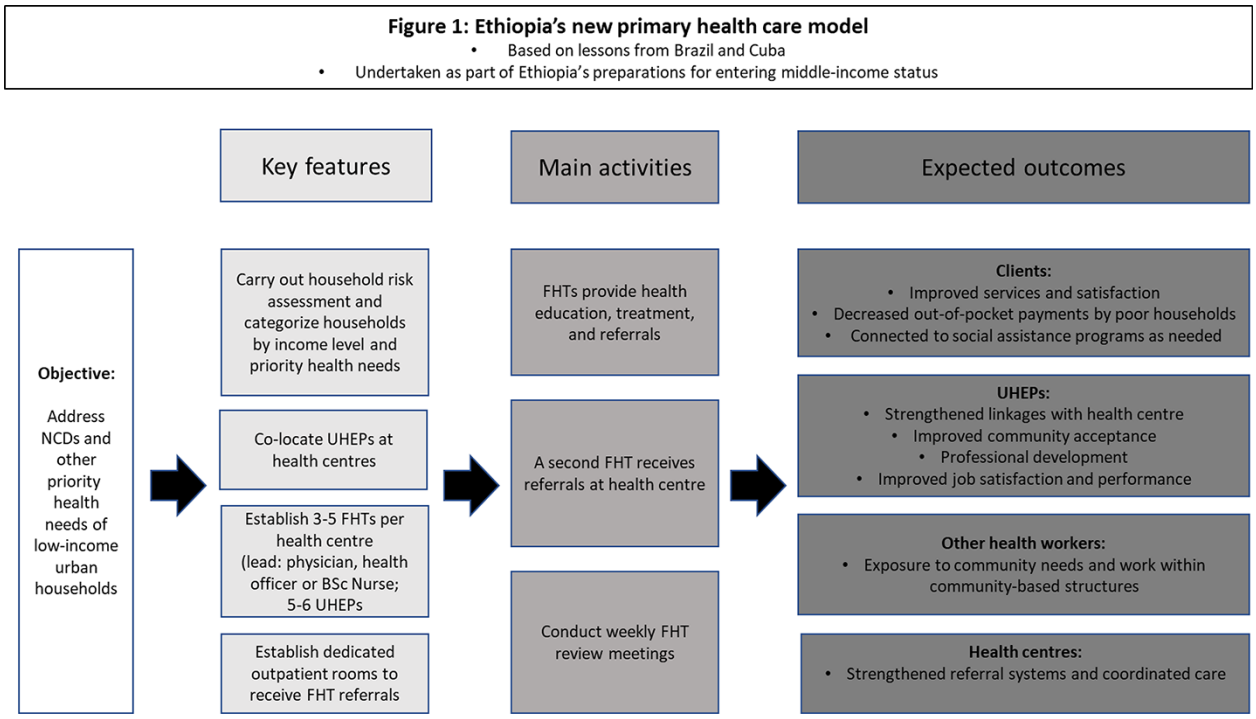

Figure 1. Ethiopia's new primary healthcare model.

Figure 2: AIM CHW program functionality matrix	
Human resource management	CHW role
	Opportunity for advancement
	Individual performance evaluation
	Recruitment
Capacity building	Initial and continuing training
	Supervisoin
	Program performance evaluation
Support	Equipment and supplies
	Incentives
	Community involvement
Links	Documentation and information
	Management
	Referral
	Linkages to health system
	Country ownership

Figure 2. AIM CHW tool functionality matrix.

Source: Crigler L, Furth R, Bjerregaard D. 2011. Community Health Worker Assessment and Improvement Matrix (CHW AIM): A Toolkit Improving Community Health Worker Programs and Services. Publisher by the USAID Health Care Improvement Project. Bethesda, MD: University Research Co., LLC (URC).

Study site, sampling and recruitment

In cities where the FHTs were piloted, we were able to examine the unique situation where stakeholders had experienced both community and health centre-based management arrangements. Among the six regional cities where the FHTs were piloted, there was little documentation regarding the strength of FHT implementation across the implementation sites. Thus, we selected our study site based on pre-existing relationships in the city and interest by the respective state health bureau in examining FHT implementation. Good access to the implementing organization and individuals was an important criterion for our site selection (Crowe *et al.*, 2011).

In our study site, the FHTs were trialled in one health centre covering three surrounding *Kebele*s. Because FHTs were piloted in sites with a pre-established UHEP programme, nearly all UHEPs, managers and administrators who were involved with FHT implementation in our study site had experience under both management arrangements. This allowed our study participants to compare and reflect on the differences between the two management arrangements. Using administrative lists obtained from the state health bureau, we recruited: all (21) UHEPs and six facility-based health workers who participated in the FHTs and all five health centre managers and UHEP supervisors who had a role in FHT implementation. We also recruited: at least one *Kebele* official from each of the three *Kebele*s where the FHTs were piloted (*Kebele* head and/or designated other) and at least one representative from the state health bureau, MoH and NGO implementing partners, respectively. In total, 13 managers/administrators (one woman), 20 UHEPs (all women) and five facility-based health workers (three women) involved with the FHTs participated. Non-participants included one facility-based health worker on long-term leave and one UHEP no-show.

Data collection

Given the small number of facility-based health workers, managers and administrators involved in FHT implementation and the sensitive nature of sharing information about

a federal initiative that was poorly implemented, we conducted semi-structured interviews. Among the more numerous UHEPs, we selected half (10) for interviews. Interview guides inquired about:

- roles, responsibilities and level of engagement with the UHEP program; changes to their interactions and relationships following FHT implementation;
- the nature of UHEP activities, community receptivity, supervision/oversight and linkages with health centres under the two management arrangements;
- initial expectations and reactions to the FHT program; intended/unintended outcomes for UHEPs, community members and the health centre under the FHT program; challenges encountered; and,
- advantages and disadvantages of the two arrangements, personal preferences and recommendations;

The remaining 11 UHEPs (who were not selected for interviews) were invited to participate in one of two focus group discussions in order to gain general information on the types of activities performed and collective insight related to community receptivity and other elements of the programme that were less subject to individual perspective.

We recruited local university staff as research assistants and provided a 2-day orientation. Interview guides were translated into Amharic (by Ethiopian co-author ME) and back-translated by research assistants to ensure consistency of interpretation. As is the practice in qualitative, interview-based research, the interview topic guides were examined and adjusted in minor ways on an iterative basis to clarify emerging meanings and add additional topics/probes on important themes. Research assistants conducted interviews/focus groups in private offices or offsite locations to ensure privacy and independence. Based on local advice, participants were provided with honoraria (~USD $7 in mobile phone credit) to offset time and travel costs to interview locations. Written consent was obtained from participants. Conversations were audio-recorded and then simultaneously translated and transcribed by research assistants. Debriefing sessions were held daily to discuss main findings and raise areas for new inquiry.

Ethical approval was obtained from the SNNPR State Health Bureau's Health Research Ethical Clearance (reference: £'-6-19/37453) in Ethiopia and from the University of Melbourne (reference: 1954330). Data were collected between July and October 2019. The authors and data collection team were not involved with UHEP programme or FHT implementation.

Analysis

We used a manifest analysis approach to qualitative content analysis (Hsieh and Shannon, 2005). We deductively coded data to four features of CHW programming (scope of work; community legitimacy; level of supervision, oversight and ownership and health facility linkages) that were impacted by the changed management arrangements and that are known to affect CHW performance. We compared perspectives within and between participant groups (UHEPs, facility-based health workers, health centre-based administrators, *Kebele*-based administrators and other programme administrators). This enabled us to triangulate perspectives on performance from different groups (Yin, 2009). Within these four categories, we inductively identified tensions and trade-offs related to the two management arrangements. We did so by coding text as positive or negative statements in order to understand participant perspectives and opinions regarding how performance outcomes were affected by the two respective management arrangements and preferences for ideal arrangements. This allowed us to see where preferences aligned or diverged between participant groups and to elicit tensions and trade-offs of the two management arrangements regarding feasibility and the way in which the respective arrangements served the interests of the different participant groups. The primary author coded the data in NVivo 11 and conducted the analysis. Interpretation was validated by an Ethiopian co-author (Teralynn Ludwick) who reviewed all transcripts.

Results

In the following sections, we present the perspectives, tensions and trade-offs of the two management arrangements (*Kebele*-based vs. health centre-based) on four programme elements affecting UHEP performance: (1) scope of work; (2) community legitimacy; (3) level of supervision, oversight and ownership and (4) health centre linkages. Excerpts and quotations illustrating stakeholder perspectives are presented in accompanying Tables 1–4.

1. Changes to location and management arrangements influence UHEP scope of work

1a. Influence of Kebele-based management on UHEP scope of work

Under the original configuration, *Kebele* officials had the most direct role in assigning UHEP tasks and priorities. *Kebele* officials assigned UHEPs wide-ranging tasks related to local government priorities and initiatives that spanned health, community development, and political and administrative agendas (see Box 1). These assignments went beyond the 15 health extension packages developed by the MoH (related to hygiene and environmental health; family health; disease prevention and control; injury prevention and control and first aid), which define the scope of UHEP activities (Table 1, Quote 1.1). Household visits were completed by UHEPs in an ad hoc manner in between assisting with other *Kebele* priorities (Table 1, Quote 1.2).

1b. Influence of health centre-led management on UHEP scope of work

The new FHT arrangement, which based UHEPs at the health centre under the direction of health centre administrators, was put in place by the MoH to better align UHEP tasks with MoH priorities. As such, UHEPs expected that *Kebele* officials would subsequently have limited authority to assign them tasks (Table 1, Quote 1.3). UHEPs were enthusiastic about expanding their scope of work to include treatment services and clinical follow-up within the FHT programme (Table 1, Quote 1.4).

1c. Tensions and trade-offs of the two management arrangements

Under *Kebele* management, the wide-ranging assignments generated dissatisfaction from UHEPs and the MoH and discord with *Kebele* officials regarding what were appropriate

Table 1. Influence of location and management arrangements on UHEP scope of work

	Key findings	Quote number	Illustrative, supporting excerpts
1a. Influence of *Kebele*-based management	• UHEPs assigned a wide range of health, community and administrative tasks, which are determined by local administration priorities • Time and focus for the health extension package (developed by the MoH) squeezed out	Box 1	See Box 1 for list of indicative tasks
		1.1	*We are almost in all activities [laughing]; I can say, we are multisectoral (UHEP-FGD1)*
		1.2	*As most of our activities were not organized, if there is urgent work from the Kebele side, we will spend most of our time on it (UHEP-1)*
1b. Influence of health centre-led management	• UHEP tasks determined according to MoH priorities	1.3	*We will be expected to only do activities that are ordered by the health center head (UHEP-9)*
	• Opportunity to support curative services as part of FHTs	1.4	*As part of the FHT, we can provide additional services, not just health information. For example, giving pharmaceutical advice is not part of health extension program. But as part of the FHT visit, the pharmacist prescribed medication for a hypertensive patient. Then we began counselling the patient to take the medication appropriately and advised him of possible side effects. We are now following-up with the patient based on the information provided by the pharmacist and we will report to him if there are any serious issues that need his attention (UHEP-6).*
1c. Tensions and trade-offs	• Discord regarding appropriate roles for UHEPs (community agents vs health professionals) • Co-option into political tasks	1.5	*Since UHEPs are part of the Kebele administrative body, they are responsible for contributing to all Kebele activities and agendas, including income generating activities, good governance, education, health, and security issues… They don't just work on health issues (Administrator-10).*
		1.6	*UHEPs' involvement with Kebele political agendas described as 'co-option' and associated with 'underutilization' of UHEPs (Administrator-9, Administrator-7)*
		1.7	*We prefer to do health-related tasks as we are health professionals (UHEP-8).*
		1.8	*Because we are based at the Kebele office, we feel far from our profession and are not able to exercise our professional skills (UHEP-3).*
		1.9	*The Kebele officials pressure us to prioritize political activities. As we are based at the Kebele, they take our attendance and control our movement. In this way, they pressure us to work on non-health activities. They force us to take part in most of Kebele and political meetings. I have to do what they order me to do, because I can't offend them, otherwise there would be negative consequences for me (UHEP-1).*
		1.10	*The rural health extension worker training and tasks are well-aligned. In contrast, UHEPs are trained in clinical practice duties. At the same time, the need for a public health worker is high; This creates a mismatch in training and expectations, resulting in UHEP dissatisfaction (Administrator-7).*
	• Strongly appealed to UHEPs, but unclear expectations for UHEP roles in FHTs vs other health prevention and community activities	1.11	*Most UHEPs saw 'no advantage' in being based at the Kebele.*
		1.12	*The disadvantage of being based at the health centres is that it is difficult to do community-level preventive activities as the health center is more focused on providing curative services for patients coming to the health facility (UHEP-6).*

(continued)

Table 1. (Continued)

	Key findings	Quote number	Illustrative, supporting excerpts
		1.13	*The FHT governance structure recommends that UHEPs should be based at the health center. But, UHEPs have files and previous work that they have been doing at the Kebele office. They still have tasks to do at the Kebele based on the previous disease prevention approach and tasks to do at the health facility based on the new FHT approach at the same time. They couldn't completely stop carrying out their previous tasks at the Kebele and focus only on the FHT tasks. If the FHT visits were the only tasks the UHEPs were expected to perform, they should be based at the health center. But, we couldn't separate the two approaches because they have responsibilities both at the Kebele as UHEP and at the health center as FHT members (Administrator-1).*
		1.14	*Because they have returned to the Kebele, they are no longer focusing exclusively on the FHT activities; they are also performing additional political activities. This mixed approach is impeding implementation of the FHTs (Administrator-5).*

Table 2. Influence of location and management arrangements on UHEP legitimacy in the community

	Key findings	Quote number	Illustrative, supporting excerpts
2a. Influence of *Kebele*-based management	• UHEPs able to build longstanding relationships with community members	2.1	*We have been working in the Kebele for nine years and have known many children since their birth. That makes us like a close family member of that household. Because of this long relationship, they tell us if they have any health-related problems (UHEP-FGD2).*
	• *Kebele* officials support UHEPs in getting compliance from households	2.2	*When we want to encourage proper liquid waste management, most households will not pay attention to us. But, when we go with Kebele officials, they will accept our recommendation. If they are not implementing health extension packages, the Kebele will withhold other Kebele services (UHEP-5).*
	• UHEPs used as political agents	2.3	*The Kebele forces us do these political and administrative activities because we have better acceptability in the community than the Kebele authorities. So, they are using us in order to access the community and reduce the probability of a community member rejecting their request (UHEP-4).*
2b. Influence of health centre-led management	• Increased acceptance of UHEPs by the community due to affiliation with facility-based staff and focus on providing treatment	2.4	*Households telling FHTs 'Please come again' (Administrator-6)*
		2.5	*During FHT visits, households started asking if we can provide treatment services and questioned us, 'so why have you been doing only sanitation related activities so far!' They really appreciated us then (UHEP-8).*
		2.6	*While we were working together with the health center staff in the FHT, we had more acceptance because the community knows that the team members are from the health center. So, if we were at the health center, people will consider that we are doing only health-related tasks. When we work in the FHT with other health professionals, the community's acceptance is higher (UHEP-9).*
2c. Tensions and trade-offs	• Community less receptive to UHEP work due to their affiliation with *Kebele* administration	2.7	*Everyone considers us to be a Kebele worker rather than a health worker; whenever we inform them about something, they perceive it to be a political task; they don't even respect us and say that they are not willing to obey what we say, assuming that it is some political matter and they are not a supporter of the leading political party (UHEP-8).*
		2.8	*If we are based in the Kebele, the community will give less attention to the health extension program—just as they do with other Kebele activities (UHEP-1).*

(continued)

Table 2. (Continued)

	Key findings	Quote number	Illustrative, supporting excerpts
	• UHEPs feel delegitimized and devalued as health professionals due to political interference in their work	2.9	*Because we are located at the Kebele office, the community doesn't even consider us to be health professionals; they don't give us equal value compared to people who come from the health centre (UHEP-5).*
	• Decreased embeddedness of UHEPs in community	2.10	*In general, it is difficult to do the work from the health centre. They can't serve the community well; they won't know the community health problems properly and won't be able to solve them (Administrator-13).*
		2.11	*If a mother has a history of sexual abuse, she can freely tell the UHEP the problem at her home rather than going to the health center. Working in the health center may be good for the health extension workers, but for the community it is better if they stay in the Kebele (Administrator-12).*
	• Lack of consensus on how to manage UHEP relationships with community	2.12	*If we are working at the facility, the community will give value to the [extension] program as a health program. I see no special benefit in working at Kebele offices. The only thing that they are doing to support us is mobilizing the community members, which is their normal duty (UHEP-1).*
		2.13	*There is a need for clear and strong links between the UHEPs and the health centre. I believe UHEP offices should be physically moved from the Kebele office to the health center (Administrator-9).*
		2.14	*UHEPs are health professionals but they are assigned to address political issues…UHEPs should be stationed in the Kebele but the accountability should rest with the health center. This allows UHEPs good access to the Kebele but gets them away from the political tasks of the Kebele officials (Administrator-12).*

Table 3. Influence of location and management arrangements on the level of supervision, oversight and ownership of UHEPs

	Key findings	Quote number	Illustrative, supporting excerpts
3a. Influence of *Kebele*-based management	• Strong sense of ownership of UHEPs by *Kebele* administration, characterized by regular monitoring	3.1	*Since the health extension workers' job is based in the Kebele, it's primarily monitored by the Kebele (Administrator-13).*
		3.2	*[the Kebele administration] monitors our activities every 15 days as part of Kebele activities. The Kebele is monitoring our work actively, better than any of the others (UHEP-6).*
		3.3	*To check their actual performance, we are evaluating UHEP work as part of the Kebele administration work. We are doing so by considering them part of the Kebele administrative body. Since the government has invested a lot in the program and the community should benefit from their work, monitoring of health extension workers should be considered a priority task (Administrator-11).*
	• Weak, irregular oversight by health centre management and limited supportive supervision	3.4	*As the UHEPs were based at the Kebele office and have been reporting to them, the health centres were not supporting and following their activities properly (Administrator-1).*
		3.5	*The health centre provides supervision according to their own schedule…Previously the supervision from Kebele and health centre was just about reporting our activities (UHEP-7).*
		3.6	*There is a big gap regarding the supervision. If they [health centre leadership] were coming every month, there will not be such [supervisory] gaps; they could address any issues and we could move hand in hand with them (UHEP-3).*
	• Limited capacity of Kebele officials to provide technical support	3.7	*It would be good if the UHEP work was evaluated by someone who has good knowledge about the health extension program (Administrator-10).*
		3.8	*The Kebele can only monitor health extension workers (Administrator-11).*

(continued)

Table 3. (Continued)

	Key findings	Quote number	Illustrative, supporting excerpts
3b. Influence of health centre-led management on UHEP roles	• (Temporary) improvement in supportive supervision and feedback	3.9	*Previously the supervision from Kebele and health centre only amounted to reporting our activities. But recently there has been an improvement, and we feel that they are supporting us. The health centre supervision team routinely discusses our achievements and designs strategies to address performance issues (UHEP-7).*
		3.10	*At the FHT meetings, we were all responsible for raising ideas and sharing the challenges we faced [regarding the households we met] (HW1).*
		3.11	*Initially we held review sessions every Friday with the health centre officials. Soon, however, the level of supervision and commitment from the health centre became greatly reduced. After that, we began only reporting and left; this really creates lack of motivation (UHEP-5).*
3c. Tensions and trade-offs	• UHEP dissatisfaction with Kebele officials as 'bosses'	3.12	*When we are placed at the Kebele office, the Kebele administrator or head of the sub-city administration office becomes our immediate boss; but, the head of the health centre should have been the one giving us orders. We prefer to do health-related tasks as we are health professionals. The health centre head should be our immediate boss because we will not be evaluated for the non-health related activities we do (UHEP-8).*
		3.13	*I prefer to be supported by the health centre supervisor as he has better knowledge of our work. We will be successful if we are supported by someone who is knowledgeable about the health extension program. Kebeles don't understand the health activities we are doing (UHEP-5).*
		3.14	*The Kebele chairperson is technically in charge of UHEPs as in rural areas;, however, the UHEPs dislike this administrative structure because they are health professionals, yet end up being overseen by a Kebele representative who is often a lay person (Administrator-8).*
	• Competing directions from Kebele offices and health centres	3.15	*The challenge is that the Kebele assigns us to carryout its own agenda, while at the same time, the health centre assigns us separate activities. Some of the orders clash with each other, but the Kebele forces us to do only their activities. We get confused in the middle, as both are monitoring our job. This usually results in us having disagreements with both the Kebele and health centre (UHEP-7).*
	• Work evasion by UHEPs	3.16	*It is really disadvantageous to be located at the Kebele. We are not discharging our duties properly; we can easily skip from our daily routine tasks that we were expected to perform. If they can't find us at the Kebele office, they will blindly consider that we shifted to work in the community. This creates space for us to abuse the job (UHEP-8).*
		3.17	*This move [to health centres] should also help with UHEP accountability, as previously UHEPs were often absent (Administrator-13).*
		3.18	*Currently there are a lot of false reports by health extension workers (Administrator-11).*
	• Lack of health centre capacity to support UHEP	3.19	*The site selection was inappropriate. It would have been better if it was implemented in another health centre where it can be easily implemented and managed. Every Friday we meet at the health centre for review meetings and prepare a plan for the next week. Unfortunately, the meeting room is also used by others and there were times we had to cancel our meeting because other facility staff had already occupied the room. Another challenge was shortage of manpower (Administrator-6).*

(continued)

Table 3. (Continued)

	Key findings	Quote number	Illustrative, supporting excerpts
		3.20	*During the implementation in Addis Ababa, there was a budget for the transportation service and airtime [mobile credit] for FHT members to communicate during the process of referring clients from home to the health centre. But here, there was not this type of support. Insufficient budget was the main reason we did not provide similar support in [city](Administrator-1)*
		3.21	*The health centre can't solve the challenges related with infrastructure and room shortages (the health centre has no capacity to construct new rooms)(Administrator-3).*
	• Lack of commitment to dedicating limited health centre resources for UHEP outreach activities	3.22	*Despite the shortage of rooms in the health centre, they should attempt to efficiently share them. They should also invest their internal financial resources from service charges and consider this program like other activities managed by the centre (Administrator-10).*
		3.23	*We also have some disagreement about the logic of providing services to someone at home without even properly serving our clients who are coming to the health centre (Administrator-5).*
	• Resistance by Kebele officials in devolving oversight responsibility to health centres	3.24	*There was disagreement among the different stakeholders about where UHEPs should be stationed. In Addis Ababa, UHEPs were already stationed at the health centre, so there was no change. But in [City] they were originally stationed in the Kebele and there was no consensus around moving them to the health centre (Administrator-7).*
		3.25	*We have tried both ways now. It's difficult for the health centre to monitor the UHEPs' daily work. When the UHEPs work from the health centre, they did not visit households appropriately. We couldn't find them in their workplace. When health extension workers are not doing their job appropriately, its better managed by the Kebele (Administrator-11).*
		3.26	*I think it will be good to include a supervisor with a health background within the Kebele administration to support the UHEPs and he can provide technical support to them (Administrator-10).*

Table 4. Influence of location and management arrangements on UHEP linkages with health centre staff and services

	Key findings	Quote number	Illustrative, supporting excerpts
4a. Influence of *Kebele*-based management	• Low intensity but ongoing linkages	4.1	*We don't have strong acquaintance; but sometimes one midwife or a nurse will be assigned to assist us. We only get them once in a while as this one person is expected to go round to all nine UHEPs across the whole Kebele. These individuals were coming to assist us even before the establishment of the FHT and they continue to do so now (UHEP-9).*
		4.2	*Once in a while we go out to support the UHEP, but because we have a high workoad we can't make these support visits regularly (HW-2).*
4b. Influence of health centre-led management	• Health facility workers more responsive to UHEP work and community health issues, supporting improved UHEP job satisfaction	4.3	*My attitude towards UHEPs changed after I took the FHT training and starting to work with them. I came to appreciate their role in the community (HW-2).*
		4.4	*It helped us to be empathetic to those who were in need (HW-1).*
		4.5	*We were all responsible for attending the FHT meetings, raising ideas and sharing the challenges we faced. For instance, we discussed a diabetic child whom we found was facing discrimination from his friends at the school due to his physical weakness; then we agreed to communicate this issue to the school head and were able to address it (HW-1).*

(continued)

Table 4. (Continued)

	Key findings	Quote number	Illustrative, supporting excerpts
		4.6	*The UHEPs began to feel good because they have been considering themselves as the health centre staff (Administrator-4).*
	• Improved service coordination between UHEPs and health centre workers	4.7	*We were also able to reduce the very long process at the health centre for referring bedridden patients. There was a high level of cooperation between the health centre and the FHT; we could call to tell the health centre team that we are sending a case and as a result there wasn't a long process to accept or provide the service (UHEP-9).*
		4.8	*Referred mothers can now easily receive ready-to-use therapeutic foods from the health centre to take home. Previously, this was very difficult, as they used to only give the clients we referred one to two sachets, suspecting that they will simply sell the sachets. When we work as a team, everyone takes responsibility and those at the health centre can easily witness the situation (UHEP-8).*
		4.9	*As a result of the cooperation in the FHT, I can also easily help the UHEPs to access medicines from our pharmacy without them having to go through a lot of bureaucracy (HW-2).*
4c. Tensions and trade-offs	• Facility-based workers do not consider UHEPs as clinically competent, professional colleagues, negatively affecting UHEP motivation	4.10	*Although we fall under the [Name] health centre, we are not even considered as staff in the health centre. They considered us only as community workers. They don't even properly manage the people we are referring. They don't consider us as professionals. And this doesn't motivate us and is obstacle for our work (UHEP-FGD1).*
		4.11	*Some [facility-based workers] don't even know us. They say to us 'are you working here?' We only meet them in trainings (UHEP-FGD1).*
		4.12	*We have diplomas and some even have bachelor-level nursing degrees…but when we refer a person with cough and night sweats for a TB test, the facility-based providers reject our referral and say to the client 'who told you this?' (UHEP-FGD1).*
		4.13	*I did not have any personal acquaintance with them [UHEPs]. I only saw them when they came here to the health centre to get some equipment or medicines (HW-2).*
	• Disengagement in FHTs by facility-based health workers and administrators due to staffing, capacity constraints and lack of incentives	4.14	*The challenge is that the FHTs requires a massive amount of professional manpower. We don't have that here. We have to take double shifts even to cover the work in the health centre. There are six FHTs that require individual pharmacists. But despite that we try to go in shifts to help the FHT when there is a requirement for us to do so (HW-2).*
		4.15	*As we were used to working only at the health facility, it was tiresome to go to the community and provide services without transportation being provided. Also we had a large workload as we had to attend the home-to-home visits in the morning and then work at the health centre in the afternoon. The FHT is extra work, but we get nothing beyond our regular salary (HW-1).*
		4.16	*The health professionals…are not happy. They expect additional incentives when they do home-to-home visits. They are complaining about this (Administrator-5).*
		4.17	*I think it will not be possible to implement the FHTs in all 12 Kebeles. If they are doing FHT visits across all the Kebeles, there won't be any health workers available at the health centre. At present, we tried it in only 3 Kebeles (Administrator-5).*
	• Ineffectiveness of FHTs discourages participation	4.18	*Now we are just making the FHT visits barehanded; and for this, the [skills of the] UHEPs are sufficient; they are already sending client referrals in this manner. But if we could be provided with equipment [blood pressure equipment, glucometers]when making the visits, it would be good (HW-5).*
		4.19	*There is an issue of time management. So much time is wasted simply waiting for team members to show up to make the visits (HW-3).*

(continued)

Table 4. (Continued)

Key findings	Quote number	Illustrative, supporting excerpts
• Divergent opinions among facility-based health professionals regarding their appropriate role in outreach work and vis-à-vis UHEPs	4.20	*In my opinion, I don't think the FHTs provide any benefit to the health centre [HW-1].*
	4.21	*When the FHTs began, what the UHEPs did was introduce the household to the facility team and then they would refrain from doing anything else. Previously the UHEPs used to do everything by themselves; but when the facility team accompanied them, the UHEPs just left everything to become the burden of the facility team (HW-3).*
	4.22	*The FHTs provided a very good bridge between the UHEPs and the other health workers and helped the UHEPs to be seen as members of the health centre; that being said, there is still a clear divide between the health centre workers and the UHEPs (Administrator-8).*
	4.23	*We have to consider community work as part of the health centre task (HW-4).*
	4.24	*I would like to stress that it would be better if the FHT program could be continued. I think the program was interrupted due to shortage of resources and supplies. In addition, no one was taking the program as their own responsibility (HW-1).*

activities for UHEPs. *Kebele* officials considered UHEPs as part and parcel of the *Kebele* administration and thus should be key agents in implementing the *Kebele*'s community agenda (Table 1, Quote 1.5). In contrast, health administrators saw UHEP involvement in *Kebele* agendas, particularly political and administrative ones, as 'inappropriate' [participant's term] (Table 1, Quote 1.6). UHEPs were equally dismayed as they considered themselves to be trained health professionals (Table 1, Quotes 1.7 and 1.8). UHEPs felt controlled by *Kebele* officials and disempowered to resist the assignment of political tasks by their 'bosses' [UHEP term] (Table 1, Quote 1.9). An administrator further noted that the clinical training provided to UHEPs creates expectations for their roles, which are mismatched with the public health services they provide in practice (Table 1, Quote 1.10). While there was no agreement on which community and administrative tasks UHEPs considered to be appropriate tasks for their position, generally, UHEPs believed that these activities should be limited with the bulk of their time focused on delivering the MoH health extension packages.

UHEPs strongly supported relocation and reporting to the health centre, with many stating there was 'no advantage' in being based at the *Kebele* (Table 1, Quote 1.11). Most believed they could still effectively carry out their community-based work while being stationed at the health centre, although one UHEP acknowledged that their focus on health prevention activities in the community may diminish (Table 1, Quote 1.12). However, the legacy of the old management arrangements significantly hampered transition to the new UHEP role. Under the new arrangement, it proved hard to silo their new role in the FHTs from their previous work as there was little policy guidance about the extent to which UHEPs were supposed to continue to perform their other community roles, and *Kebele* officials continued to exert control over UHEPs (Table 1, Quote 1.13). Despite the MoH's objective to focus UHEP tasks on FHT visits for prioritized households and health conditions, the FHT programme was weakly implemented (reasons outlined in subsequent sections), with UHEPs conducting only a handful of FHT visits. Both UHEPs and health administrators noted that once UHEPs returned to the *Kebele* offices, UHEP roles reverted to their original ones, with little focus on FHTs (Table 1, Quote 1.14).

Box 1. Indicative health, community, administrative and political tasks conducted by UHEPs

As reported by UHEPs and administrators, UHEPs were involved with:

Health-specific tasks: providing health education (e.g. monthly pregnant mothers' conference), follow-up of priority individuals (e.g. pregnant women and infants, TB and HIV patients and those with NCDs), supporting health campaigns (e.g. vitamin A supplementation, deworming and child immunizations), health centre referrals, environmental sanitation campaigns (e.g. cleaning neighbourhood ditches, constructing toilets, preparing liquid waste disposal sites) and healthcare insurance enrolment and fee collection

Community development tasks: supporting the 'women's development army' (model households), agriculture-related activities and identifying and enrolling low-income community members in the safety net program

Administrative and political tasks: registration (e.g. vital event registration, documenting those with (un)registered trade licenses, issuance of *Kebele* ID cards and inventory of pharmacies and clinics in catchment); political activities (e.g. mobilizing the community to pay taxes, attending and enlisting community members to attend *Kebele* meetings and supporting election campaigns); supporting research activities

Key comparisons

- Scope of work: *Kebele*-based management led to a wider scope of community-based activities for UHEPs (e.g. community development, administrative and political activities), whereas health centre-based management led to a more technical focus that included opportunities for UHEPs to support curative services as part of FHTs.
- Tensions/trade-offs: While *Kebele*-directed activities contributed to UHEP work dissatisfaction, role politicization and discord with the MoH, UHEP roles as part of FHTs were short lived; the FHT roles created tensions with expectations for UHEPs to support other community-based health activities.

2. Changes to location and management arrangements influence UHEP legitimacy in the community

2a. Influence of the Kebele-based management on UHEP legitimacy in the community

UHEPs recognized the positive effect of their longstanding presence in the community as important for building the trust of community members to confide in them about health issues (Table 2, Quote 2.1). They also acknowledged the assistance (power) of *Kebele* officials in getting community members to cooperate, particularly on addressing sanitation issues (Table 2, Quote 2.2), although it is unclear how this forceful approach affected rapport and trust in the community. On the other hand, under *Kebele* management, UHEPs complained that *Kebele* officials used UHEPs and their longstanding relationship in the community to accomplish political ends (Table 2, Quote 2.3).

2b. Influence of the health centre-led management on UHEP legitimacy in the community

Under the FHT structure, UHEPs felt that they were better accepted and more valued by community members. Health centre administrators made similar observations, conveying that households were telling the teams 'Please come again' after receiving FHT services (Table 2, Quote 2.4). UHEPs and health centre administrators associated improved receptivity with focusing exclusively on health services, the expanded range of services offered (beyond prevention) and their connection to the facility-based health staff (Table 2, Quotes 2.5 and 2.6).

2c. Tensions and trade-offs of the two management arrangements

On balance, UHEPs strongly believed that their association with the *Kebele* administration and their forced participation in carrying out the (political) activities of the administration negatively affected their credibility in the community. According to UHEPs, community members perceived their work to be politically motivated and were consequently less willing to engage with the health extension programme activities (Table 2, Quotes 2.7 and 2.8). Under *Kebele* management, UHEPs felt that the community did not respect or value them as health professionals and differentiated them from facility-based health workers (Table 2, Quote 2.9). All UHEPs, except one, believed that UHEPs should not be based at or managed by *Kebele* offices due to their negative influence on UHEP receptivity in the community. The remaining individuals worried that UHEPs might lose focus on preventative activities if based at the health centre.

While all sides acknowledged issues of poor community receptivity, there were contested views as to whether stationing and managing UHEPs from health centres was the right response. Despite the perceived gains in community acceptability when UHEP activities were managed as part of FHTs, *Kebele* officials asserted that UHEPs are less accessible to community members when based at the health centre (Table 2, Quote 2.10). They contended that community members are more comfortable sharing health issues in the familiarity of their homes, including sensitive issues, and that UHEPs would have insufficient connection to the issues facing their communities (Table 2, Quotes 2.10 and 2.11). *Kebele* officials observed that what is best for communities may be in tension with what UHEPs want (Table 2, Quote 2.11). In contrast, UHEPs consistently asserted that there were zero or minimal advantages in being located at the *Kebele*. UHEPs contended that the main contribution of *Kebele* officials with regards to the health extension programme is in mobilizing community and that this duty should remain even if UHEPs are relocated to health centres (Table 2, Quote 2.12). Health administrators held mixed views. Some strongly supported the MoH recommendation for UHEPs to be based at health centres in order to prevent UHEPs from being deployed for 'political purposes' and to integrate them as 'health professionals' (Table 2, Quote 2.13). In contrast, others believed it was important for UHEPs to remain embedded in the community but recommended strengthening supervision and accountability to the health centre to prevent them from being pulled into the political tasks of the *Kebele* officials (Table 2, Quote 2.14).

Key comparisons

- UHEP legitimacy in the community: Kebele-based management was useful for supporting compliance but also led to community members rejecting UHEP health promotion efforts due to their association with the political administration; conversely, health centre-based management increased community receptivity by associating UHEPs with health centre staff and services
- Tensions/trade-offs: Stationing UHEPs in the community enabled UHEPs to build longstanding relationships but contributed to the politicization of UHEP activities and poor receptivity; moving UHEPs to the health centre led to disagreement as to whether community needs could be well served under this arrangement

3. Changes to location and management arrangements influence level of supervision, oversight and ownership of UHEPs

3a. Influence of Kebele-based management on supervision, oversight and ownership

Oversight of UHEPs was intended to be a shared responsibility, with health centres responsible for providing technical supervision and *Kebele* officials responsible for regular monitoring of activities. Through joint committees, both stakeholders were to provide leadership of the programme direction.

Kebele officials considered UHEPs as part of the *Kebele* administration and, by extension, their duty to oversee UHEP activities (Table 3, Quote 3.1). To this end, UHEPs reported that *Kebele* officials did provide regular monitoring (Table 3, Quote 3.2). *Kebele* administrators indicated that they were trying to strengthen oversight in order to better capitalize on the UHEP workforce (Table 3, Quote 3.3). With monitoring predominantly managed by *Kebele* officials, respondents perceived that health centre administrators were shirking their responsibility to provide technical support and leadership (Table 3, Quote 3.4). UHEPs reinforced this perspective, indicating that engagement by health centre leadership was infrequent, deprioritized and largely amount to the 'evaluation' of their activity reports (Table 3, Quote 3.5). UHEPs reported that monthly meetings between *Kebele* and health centre management were usually deferred to quarterly, creating gaps in setting UHEP work priorities and solving issues (Table 3, Quote 3.6). Other administrators acknowledged the limited technical capacity of the *Kebele* administration to go beyond monitoring and provide supportive supervision (Table 3, Quotes 3.7 and 3.8).

3b. Influence of health centre-led management on the level of supervision, oversight and ownership of UHEPs

Initially health centre-led management seemed to strengthen the supportive supervision of UHEPs, shifting from simple reporting of activities to developing strategies to address challenges faced by UHEPs (Table 3, Quote 3.9). Facility-based health workers (albeit very few) who attended the FHT team debriefing meetings were jointly engaged in finding solutions to challenges faced by particular households (Table 3, Quote 3.10). However, due to numerous implementation challenges (particularly resourcing and staffing constraints), the FHT programme lasted only briefly. FHT workspaces were repurposed and UHEPs returned to their *Kebele* stations. With their return to the *Kebele*, the recently enhanced health centre-led supervision soon faded as well (Table 3, Quote 3.11). Patterns of oversight reverted to their original format.

3c. Tensions and trade-offs of the two management arrangements

UHEPs disagreed with the *Kebele*'s authority to set UHEP priorities while monitoring their performance against metrics set by the MoH (Table 3, Quote 3.12). Overall, UHEPs believed that they should be primarily accountable to health centres. As health professionals, UHEPs were displeased about being overseen by 'lay people' at the *Kebele* Office who had limited technical knowledge of health extension work and did not understand UHEP roles (Table 3, Quotes 3.13 and 3.14). However, in practice, *Kebele* officials served as their 'immediate boss'. In the context of active management of UHEP activities by *Kebele* officials and lack of clear communication between health centres and *Kebele* offices over UHEP activities to be prioritized, UHEPs felt caught between meeting expectations of *Kebele* leaders and carrying out activities mandated by the MoH (Table 3, Quote 3.15). These issues contributed to UHEP dissatisfaction and work evasion (Table 3, Quote 3.16) with administrators acknowledging false reporting and absenteeism (Table 3, Quotes 3.17 and 3.18).

Implementing the FHTs imposed new demands on the health centre's infrastructure and resources. Several administrators suggested it was a 'mistake' to initiate the FHTs at the health facility due to insufficient space to house a large UHEP cadre, staffing constraints (further outlined in the section on health centre linkages) and other resource issues (Table 3, Quotes 3.19 and 3.20). Administrators noted that while the MoH was driving the FHT programme, health centres and supervisors did not feel they were in a position to solve the capacity issues around facility space, staffing and resourcing (Table 3, Quote 3.21). Other administrators contended that despite the capacity constraints, the health centre did not invest its available internal resources as they do with other programmes, suggesting a lack of commitment by the health centre (Table 3, Quote 3.22). Others expressed doubts that it was better to provide doorstep clinical services when health centre services are already constrained (Table 3, Quote 3.23). Thus, these constraints appeared to have contributed to low health centre commitment to oversee and house the UHEPs who soon returned to *Kebele*.

In contrast, *Kebele* administrators, who had always disagreed with transferring UHEP management to health centres, welcomed the return of UHEPs under their direction (Table 3, Quote 3.24). According to *Kebele* officials, the experimental transition demonstrated that the *Kebele* was able to manage the UHEPs better than the health centre (Table 3, Quote 3.25). Rather than moving UHEPs to health centres, *Kebele* officials suggested it would be better to bring a health supervisor into the *Kebele* administration in order to provide stronger technical support to UHEPs (Table 3, Quote 3.26).

Key comparisons

- Level of supervision, oversight and ownership: Under the *Kebele*-based arrangement, *Kebele* officials provided regular monitoring, but technical support was limited; in the context of limited engagement by the health centre leadership, the *Kebele* largely directed UHEP activities and UHEPs engaged in work evasion tactics; changing to the health centre-based arrangement improved the quality of supportive supervision in the short-run.
- Tensions/trade-offs: *Kebele* offices demonstrated increased investment and commitment to overseeing UHEPs; while UHEPs favoured health centre-led supervision, the health centre management could not sustain primary responsibility for UHEP oversight.

4. Changes to location and management arrangements influence UHEP linkages with health centre staff and services

4a. Influence of Kebele-based management on UHEP linkages with health centre staff and services

UHEPs noted that the *Kebele*-based management arrangements provided some designated mechanisms for connecting UHEP community-based work with clinical staff and services. Connections revolved mainly around client referrals, occasional supportive supervision by nurses/midwives during household visits and periodic participation of nurses/midwives in the pregnant women's forum. In general, UHEPs and facility-based health workers characterized their linkages as weak but ongoing (Table 4, Quotes 4.1 and 4.2).

4b. Influence of health centre-led management on UHEPs' linkages with health centre staff and services

Facility-based health workers indicated that they came to appreciate the UHEPs' work through the FHT training and became more responsive to community needs (Table 4, Quotes 4.3 and 4.4). Engaging in the weekly FHT review meetings, which were managed by the health centre, contributed to joint effort and responsibility for addressing community needs (Table 4, Quote 4.5). Working together in the FHTs also helped improve the coordination of services. FHT members gave examples of expedited processes for referring bedridden patients (Table 4, Quote 4.7) and improving ease of access to medicines and therapeutic goods (Table 4, Quotes 4.8 and 4.9). This shift in engagement helped UHEPs feel that they were part of health centre staff (Table 4, Quote 4.6). However, this shift in dynamics was short lived as facility-based health workers chose not to regularly participate in the FHTs or attend FHT meetings (reasons elaborated in the following section). Health centre management did not appear to provide any repercussions for non-participation. Once UHEPs returned to *Kebele* offices, linkages with the health centre became minimal.

4c. Tensions and trade-offs of the two management arrangements

Separate management of UHEPs by *Kebele* officials was associated with limited personal connections with and poor recognition of UHEP clinical skills by facility-based staff, which negatively affected UHEP motivation. According to UHEPs, facility-based workers considered UHEPs as 'community workers' rather than 'health professionals', which UHEPs attributed to being based in the *Kebele* and managed as part of the *Kebele* workforce (Table 4, Quote 4.10). UHEPs indicated that many facility-based workers did not know who they were, despite the fact that UHEPs 'fall under the health centre' (Table 4, Quotes 4.10 and 4.11). Despite their training as diploma-level nurses, UHEPs felt that facility-based staff (who held bachelor-level nursing degrees) did not acknowledge them as equals or even consider them capable of making accurate clinical diagnoses of referred community members (Table 4, Quote 4.12). Facility-based health workers confirmed that prior to the establishment of the FHTs, they had weak personal relationships with UHEPs and limited understanding of their roles (Table 4, Quote 4.13).

All participating facility-based health workers complained vocally about staff shortages and the burden of being assigned both clinical and outreach shifts without transportation or incentives (Table 4, Quotes 4.14 and 4.15). These complaints were well known to the health centre management (Table 4, Quote 4.15). The burden on individuals was also increased by the heath centre's decision to assign only six staff (among dozens) to the FHTs. Furthermore, early efforts to set aside meeting space for the UHEPs/FHTs and establish a dedicated patient referral room for the FHTs were not sustained due to insufficient space and competing demands (as outlined earlier).

Beyond capacity constraints, some facility-based health workers perceived that the FHTs offered little benefit to the health centre and felt they should focus on their 'formal jobs' (Table 4, Quote 4.20). They felt that the FHTs were not appropriately resourced (Table 4, Quote 4.18) and were poorly organized, resulting in a waste of time (Table 4, Quote 4.19). Furthermore, as the division of roles within the FHT was unclear, one facility-based health worker expressed resentment about UHEPs passing on their work to facility-based workers (Table 4, Quote 4.21). While FHT engagement helped reshape relationships between UHEPs and other health centre workers to some extent, overall, the implementation was too weak to fundamentally change the hierarchical nature of the relationship (Table 4, Quote 4.22). UHEPs noted how their position at 'the bottom of the team' and the continued 'poor attitude towards UHEP work' presented challenges to working at the health centre.

Facility-based workers held contrasting views about the continuation of the FHTs. One individual recommended equipping *Kebele* offices as 'small clinics' where UHEPs could be based and readily provide services to community members. In contrast, others indicated the need for a mentality shift to consider community work as part and parcel of health centre services (Table 4, Quotes 4.23 and 4.24). As such, they indicated that they would be happy to continue with the FHTs if resourcing and staffing issues were addressed (Table 4, Quote 4.23). From the viewpoint of administrators, some did not think it was feasible to implement widely given the staffing issues (Table 4, Quote 4.17).

Key comparisons

- Health facility linkages: Under *Kebele*-based management, UHEPs had weak linkages with health facility staff and were not perceived as health professionals, which negatively affected UHEP motivation; referrals, service coordination and responsiveness of facility-based workers to UHEPs and the community improved with health centre-led management.
- Tensions/trade-offs: Health centre administrators and facility-based staff perceived the team outreach visits as burdensome and irregularly participated due to resource/staffing constraints and unsupportive attitudes.

Discussion

Our study examines a strategic effort by a national CHW programme to reconfigure how an urban CHW cadre is managed by local government and health facilities in order to respond to changing health priorities and operational challenges. In doing so, our paper illustrates important interactions between programme design, local context and management arrangements and their influence on CHW performance; it adds to the limited number of empirical studies that examine strategic changes to CHW management arrangements in the context of evolving CHW roles and is one of the few to focus on the urban setting specifically. By comparing and contrasting two management arrangements (community-based and health facility-based) that were implemented in the same setting, we observed four general performance trade-offs: the *Kebele*-led model was associated with wider scope of UHEP work, higher ownership and regular monitoring, weak technical support and weak health centre linkages, with the opposite patterns observed for the health centre-led management. Our findings raise important considerations for determining appropriate management configurations for different contexts and the achievement of different aims.

All management configurations have trade-offs

The two management arrangements in our study context produced different tensions and trade-offs with regards to the scope of CHW roles, legitimacy in the community, level of supervision, oversight and ownership and strength of linkages with health centre staff and services—factors that are known to affect performance (Kok *et al.*, 2015a; 2017). We found that *Kebele*-led management was advantageous for fostering strong local ownership and UHEP involvement in a diverse range of health and community development initiatives and providing regular monitoring of activities. However, direct *Kebele* management led to considerable time spent executing local political and administrative tasks, which had negative impacts on UHEP motivation and legitimacy in the community as shown in other Ethiopian studies (Kok *et al.*, 2015c). Political interference in CHW activities is known to undermine their legitimacy (Schaaf *et al.*, 2020). In contrast, under health centre-led management, UHEPs felt validated as health professionals, worked with FHTs to improve care coordination and provision of services, which were more highly valued by the community, and benefited from supportive supervision and team approaches to problem solving—factors associated with CHW motivation globally (Ludwick *et al.*, 2018; Vallières *et al.*, 2018). However, in the context of limited clinic resources and push back from facility-based health workers, this management arrangement was soon abandoned. Similar challenges with leadership, supervision, team composition and resource constraints have been documented in the ward-based CHW outreach teams in South Africa, with managers recommending teams to be located external to clinics (Austin-Evelyn *et al.*, 2017; Marcus *et al.*, 2017; Moosa *et al.*, 2017). Thus, both of the management arrangements presented different challenges and opportunities.

In applying Shenhar and Renier's conceptualization of management responsibilities, we can see that the changed UHEP management arrangements had an overall impact on (1) results achieved and advancement of organizational interests (e.g. limited number of FHT visits and UHEP involvement in administrative/political tasks); (2) on UHEP working conditions (e.g. work evasion, motivation and skill development through FHTs) and (3) on the strength of formal and informal relationships between different stakeholders (e.g. UHEP role accepted by facility-based workers and tensions with *Kebele* officials). While intended as a resource to help managers understand the different aspects of their roles and assess their own strengths and weaknesses, we found Shenhar and Renier's conceptualization useful for illuminating the interrelationships between the three core areas of management responsibilities (results, working conditions and relationships) and the performance-related tensions and trade-offs that surface.

In light of Ethiopia's implementation challenges, our findings highlight the importance of aligning management structures with: local health priorities and the types of roles to be performed by CHWs; the broader context (in our case, urban setting and decentralized political arrangements) and health centre and local government capacity. We discuss these issues below.

Management arrangements should align with the nature of the roles assigned to CHWs

Our study shows that management arrangements ascribe power and control over CHWs and task assignment. As such, management arrangements should align with the type of roles that are prioritized in a given context. In contexts where CHWs are to play a more technical role aligned with particular health priorities of the MoH, co-location and more direct reporting to health centres may be more appropriate. In contrast, day-to-day oversight by local government offices (or NGOs and community-based health posts, as done in Tshwane district, South Africa) may be more appropriate for CHW engagement in local health and development priorities (Kinkel *et al.*, 2013). In our study context, Ethiopia intentionally modified the management arrangements in order to direct the work of UHEPs towards particular MoH priorities, namely FHT visits for low-income households with NCDs and prioritized health conditions. Ethiopia's shift corresponds with growing global interest in including CHWs as part of interdisciplinary teams and 'networks of care' to improve continuity of care from clinic to community, particularly related to NCDs management and maternal care (Franklin *et al.*, 2015; Carmone *et al.*, 2020; Ludwick *et al.*, 2021); establishing such teams will require enhanced communication and reporting between CHWs and clinic-based staff and, by extension, at least some level of direct oversight by facility administration. Beyond clinical supervision, successful US models suggest that maintaining a non-clinical supervisor who understands community work (e.g. social worker or NGO administrator) has been key to effectively supporting CHWs within interdisciplinary teams (Gunderson *et al.*, 2018; Garfield and Kangovi, 2019). Further research is needed to understand effective management configurations for CHW-integrated healthcare teams in LMIC settings and how to promote effective care coordination with healthcare teams without fully medicalizing CHW work (Garfield and Kangovi, 2019).

Effective management arrangements should consider institutional structures and capacity

While our study highlights the importance of aligning management arrangements with the nature of CHW roles, the literature suggests that what is possible, appropriate and effective also needs to consider how responsibility for health service delivery is divided between different levels of government, as well as the respective capacity of local governments and health facilities (Gopinathan *et al.*, 2014). Over the last decades, a process of decentralization in Ethiopia transferred increasing responsibility for health service delivery to districts (*woredas*), including day-to-day management of UHEPs (Bergen *et al.*, 2019). The high level of ownership of UHEPs by *Kebele* officials observed in our study may reflect observations by others—that implementation may be easier when CHW programme governance aligns closely with political system goals, such as service decentralization (Perry and Crigler, 2014). It also parallels calls by managers of CHW-integrated outreach teams in South Africa to decentralize the implementation process (Kinkel *et al.*, 2013; Marcus *et al.*, 2017). At the same time, thicker lines of accountability to local government relative to the MoH created tensions regarding the extent to which UHEPs should focus on MoH priorities (which trained and remunerated UHEPs) relative to *Kebele* priorities. The literature suggests that CHWs find it favourable to formally associate with technical health departments; they wish to be seen as health professionals and to enhance their status and legitimacy within communities (Kane *et al.*, 2010; Druetz *et al.*, 2015). It is therefore unsurprising that shifting the

management of UHEPs from *Kebele* officials to health centre administrators was viewed favourably by the UHEPs while creating resistance among *Kebele* officials. This policy shift ran counter to expectations of decentralized authority and divested *Kebele* officials of their control over UHEP activities. In contexts where NGOs have a significant role in CHW programming, the establishment of teams can similarly produce tensions related to changes in NGO autonomy and power over CHW activities (Kinkel *et al.*, 2013; Angwenyi *et al.*, 2018).

Efforts to modify management arrangements will also need to carefully consider health centre capacity. The literature indicates that shifting the management of community health services to health facilities requires appropriate planning, resourcing and staff engagement to ensure that health centre staff have the capacity to absorb additional functions (Perry and Crigler, 2014; Assegaai and Schneider, 2019). Otherwise, assigning new supervisory and administrative responsibilities can overburden the already overstretched health facility staff (Jobson *et al.*, 2020), as seen in our study and other examples of newly implemented team models in Malawi and South Africa (Austin-Evelyn *et al.*, 2017; Angwenyi *et al.*, 2018). While Brazil has mandated that clinic-based nurses and physicians supervise CHWs, with nurses often reserving up to 50% of their time, such arrangements have proven challenging for staff with large patient loads and would not be feasible in countries with massive health worker shortages (Svitone *et al.*, 2000; Perry and Crigler, 2014). Our study shows important trade-offs between quality and regularity of supervision provided in the two management arrangements. Assessment criteria for determining appropriate ratios of CHWs to health centre staff and supervisors may be helpful for guiding Ethiopia and other LMICs in making determinations about health centre capacity to manage CHWs.

Changes in the broader implementation environment and implications for modifying management arrangements

Changes in the operating environment, such as urbanization, rising expectations of service quality and CHWs' demands for professional development, are influencing what CHWs do and what community members expect from them, with implications for management arrangements (Elsey *et al.*, 2019; Ludwick *et al.*, 2020). These changes may place greater emphasis on stronger connections with and management by health services. As diploma-level nurses, the UHEP cadre in Ethiopia was more highly trained than their rural counterparts, contributing to perspectives by UHEPs and the MoH that their skills as diploma-level nurses were being underutilized and their activities would be better directed by health facilities. In urban areas where CHWs compete against readily available informal and formal providers and community members may have higher levels of education, stronger affiliation with health facilities and recognition as a professional health provider may help improve their legitimacy and motivation. While association with the privileged medical system is known to be empowering to CHWs (Kane *et al.*, 2016), the literature (and our study) suggest that historical legacies related to programme design, existing CHW scope of work and resistance by other professional cadres may present constraints to more medicalized roles for CHWs, active engagement by clinical staff and health facility-led management (Doherty and Coetzee, 2005; Perry and Crigler, 2014; Strodel and Perry, 2019).

It is also clear from our findings that managers from the health centre and from the *Kebele* acted in ways to preserve their organizational interests by placing emphasis on clinical activities and on the role of UHEPs as members of the local government administrative, respectively. As management arrangements influence who has power and control over CHW cadres, changing management arrangements can threaten organizational interests. Recent lessons from South Africa and other countries that have established CHW-integrated healthcare teams suggest that intentional organizational change management strategies are needed to create incentives at multiple levels (budgetary, political, professional) to build buy-in and ownership needed to support such changes—both among those likely to lose control and those expected to take on additional responsibility (Moosa *et al.*, 2017; O'Reilly *et al.*, 2017; Ludwick *et al.*, 2021). In order to modify management arrangements, policy makers will need to target points of resistance related to administrative burdens (e.g. resourcing, administrative and supervisory responsibilities), issues of professional territoriality and organizational jurisdiction (Clements *et al.*, 2007; Mickan *et al.*, 2010). It will be important for future studies to investigate effective management configurations for supporting CHWs within interdisciplinary teams and change management strategies needed to support transitions to team-based healthcare models.

Limitations

By examining the transition from community-based to health centre-based management, our study provides a unique comparison of two arrangements implemented in the same setting. While our findings are from a single study site in which the new management arrangement was poorly implemented and short lived, our findings, nevertheless, offer important insights into the tensions and trade-offs of different management configurations, their impacts on CHW performance and challenges in managing such transitions. Given the weak FHT implementation in our study site and the limited time UHEPs were situated at the health centre, our results may understate (or overstate) the potential impact of the health centre management if fully implemented and sustained over time. It is hard to say whether interactions with the community would continue to improve and whether tensions with facility-based workers may resolve or further deteriorate over time. On the other hand, the poor sustainability observed reveals important tensions with regards to political dynamics, decentralization and the clinical orientation of health facilities and their implications for CHW performance. We also acknowledge that reliance on qualitative data only (in the absence of any reliable performance reports) and issues around social desirability bias, which is strong in Ethiopia (Østebø *et al.*, 2018), may have resulted in other dynamics and performance-related issues being obscured.

Conclusion

Who manages CHWs has important implications for the types of roles CHWs carryout and their performance. Our analysis of different trade-offs and tensions suggest that there is

no ideal management configuration, but that decision makers should carefully consider the alignment of management arrangements with the types of roles CHWs are to perform and the implementation setting, including urbanization, political decentralization and relative capacity of managing institutions. Modifying management arrangements to respond to evolving CHW roles and contexts will require organizational change management strategies to address points of resistance and create the buy-in needed to support new ways of working.

Data availability

The data underlying this article will be shared on reasonable request to the corresponding author.

Funding

This work was supported by the Canadian Institutes of Health Research [FRN: 164268] and the University of Melbourne (Melbourne Research Scholarship).

Acknowledgements

We would like to express our gratitude to the people who went above and beyond during the fieldwork in Ethiopia, particularly Mahteme Feleke Debela, Fanuel Belayneh and Tesfaye Tufa for your research assistance, Fikadu Reta, Melisew Dejene and Logan Cochrane for your support and troubleshooting and Anteneh Asefa Mekonnen who made it all possible. I am also grateful to Margaret Kelaher who is no longer with us.

Author contribution

M.E. is an employee of the SNNPR State Health Bureau, Research and Technology Transfer Office in Ethiopia. His role is to contribute to independent assessment of health programmes in the region. He did not have a role in Family Health Team (FHT) implementation and does not have any professional relationships with those involved in FHTs. He did not conduct any interviews or focus groups but helped ensure good cultural translation of the tools into local languages, reviewed anonymized transcripts and validated interpretation of findings.

Ethical approval. Ethical approval was obtained from the SNNPR State Health Bureau's Health Research Ethical Clearance (reference: £'-6-19/37453) in Ethiopia and from the University of Melbourne (reference: 1954330). Written consent was obtained from all participants.

Conflict of interest statement. The authors have no conflict of interest to declare.

References

Abimbola S, Negin J, Jan S, Martiniuk A. 2014. Towards people-centred health systems: a multi-level framework for analysing primary health care governance in low- and middle-income countries. *Health Policy and Planning* **29**: ii29–39.

Agarwal S, Kirk K, Sripad P *et al.* 2019. Setting the global research agenda for community health systems: literature and consultative review. *Human Resources for Health* **17**: 22.

Angwenyi V, Aantjes C, Kondowe K *et al.* 2018. Moving to a strong(er) community health system: analysing the role of community health volunteers in the new national community health strategy in Malawi. *BMJ Global Health* **3**: 996.

Assefa Y, Gelaw YA, Hill PS, Taye BW, Van Damme W. 2019. Community health extension program of Ethiopia, 2003-2018: successes and challenges toward universal coverage for primary healthcare services. *Globalization and Health* **15**: 1–11.

Assegaai T, Schneider H. 2019. National guidance and district-level practices in the supervision of community health workers in South Africa: a qualitative study. *Human Resources for Health* **17**: 25.

Austin-Evelyn K, Rabkin M, Macheka T *et al.* 2017. Community health worker perspectives on a new primary health care initiative in the Eastern Cape of South Africa Fox MP (ed). *PLoS One* **12**: e0173863.

Bergen N, Ruckert A, Kulkarni MA *et al.* 2019. Subnational health management and the advancement of health equity: a case study of Ethiopia. *Global Health Research and Policy* **4**: 12.

Bovbjerg RR, Eyster L, Ormond BA, Anderson T, Richardson E. 2013. *The Evolution, Expansion, and Effectiveness of Community Health Workers*. Washington, DC: The Urban Institute.

Carmone AE, Kalaris K, Leydon N *et al.* 2020. Developing a common understanding of networks of care through a scoping study. *Health Systems and Reform* **6**: e1810921.

Clements D, Dault M, Priest A. 2007. Effective teamwork in healthcare: research and reality. *Healthcare Papers* **7**: Spec No: 26–34.

Cometto G, Ford N, Pfaffman-Zambruni J *et al.* 2018. Health policy and system support to optimise community health worker programmes: an abridged WHO guideline. *The Lancet Global Health* **6**: e1397–404.

Crigler L, Hill K, Furth R, Bjerregaard D. 2013. *Community Health Worker Assessment and Improvement Matrix (CHW AIM): A Toolkit for Improving Community Health Worker Programs and Services*. Bethesda: USAID Health Care Improvement Project.

Crowe S, Cresswell K, Robertson A *et al.* 2011. The case study approach. *BMC Medical Research Methodology* **11**: 100.

Do Valle Nascimento TMR, Resnicow K, Nery M *et al.* 2017. A pilot study of a community health agent-led type 2 diabetes self-management program using motivational interviewing-based approaches in a public primary care center in São Paulo, Brazil. *BMC Health Services Research* **17**: 1–10.

Doherty TM, Coetzee M. 2005. Community health workers and professional nurses: defining the roles and understanding the relationships. *Public Health Nursing* **22**: 360–5.

Druetz T, Ridde V, Kouanda S *et al.* 2015. Utilization of community health workers for malaria treatment: results from a three-year panel study in the districts of Kaya and Zorgho, Burkina Faso. *Malaria Journal* **14**: 71.

Elsey H, Agyepong I, Huque R *et al.* 2019. Rethinking health systems in the context of urbanisation: challenges from four rapidly urbanising low-income and middle-income countries. *BMJ Global Health* **4**.

Ermias A, Bogaert J, Wogayehu F. 2019. Analysis of city size distribution in Ethiopia: empirical evidence from 1984 to 2012. *Journal of Urban Management* **8**: 237–44.

Fetene N, Linnander E, Fekadu B *et al.* 2016. The Ethiopian health extension program and variation in health systems performance: what matters? *PLoS One* **11**: e0156438.

Franklin CM, Bernhardt JM, Lopez RP, Long-Middleton ER, Davis S. 2015. Interprofessional teamwork and collaboration between community health workers and healthcare teams. *Health Services Research and Managerial Epidemiology* **2**: 233339281557331.

Frymus D, Kok M, De Koning K, Quain E. 2013. *Community Health Workers and Universal Coverage: Knowledge Gaps and a Need Based Global Research Agenda by 2015*. Geneva: Global Health Workforce Alliance.

Garfield C, Kangovi S. 2019. Integrating community health workers into health care teams without coopting them. *Health Affairs (Blog)*. 10.1377/hblog20190507.746358 (posted 10 May 2019).

Gopinathan U, Lewin S, Glenton C. 2014. Implementing large-scale programmes to optimise the health workforce in low- and middle-income settings: a multicountry case study synthesis. *Tropical Medicine & International Health* **19**: 1437–56.

Government of India. 2014. *National Urban Health Mission: Guidelines for ASHA and Mahila Arogya Samiti in the Urban Context*. New Delhi: Government of India.

Gunderson JM, Wieland ML, Quirindongo-Cedeno O *et al.* 2018. Community health workers as an extension of care coordination in primary care. *Journal of Ambulatory Care Management* **41**: 333–40.

Hailemariam D, Kitaw Y, Kaba M *et al.* 2018. Ethiopia's urban primary health care reform: practices, lessons, and the way forward. *Ethiopian Journal of Health Development* **21**: 4–9.

Hsieh HF, Shannon SE. 2005. Three approaches to qualitative content analysis. *Qualitative Health Research* **15**: 1277–88.

Jobson G, Naidoo N, Matlakala N *et al.* 2020. Contextual factors affecting the integration of community health workers into the health system in Limpopo Province, South Africa. *International Health* **12**: 281–6.

John Snow Inc. 2018a. *Ethiopia's Urban Health Extension Worker Program*. Addis Ababa: John Snow, Inc.

John Snow Inc. 2018b. *Ethiopia's Primary Health Care Reform: Practice, Lessons, and Recommendations*. Addis Ababa: John Snow, Inc.

Kane S, Kok M, Ormel H *et al.* 2016. Limits and opportunities to community health worker empowerment: a multi-country comparative study. *Social Science & Medicine* **164**: 27–34.

Kane SS, Gerretsen B, Scherpbier R, Dal Poz M, Dieleman M. 2010. A realist synthesis of randomised control trials involving use of community health workers for delivering child health interventions in low and middle income countries. *BMC Health Services Research* **10**: 286.

Kinkel HF, Marcus T, Memon S, Bam N, Hugo J. 2013. Community oriented primary care in Tshwane District, South Africa: assessing the first phase of implementation. *African Journal of Primary Health Care and Family Medicine* **5**: 36–44.

Kok MC, Broerse JEW, Theobald S *et al.* 2017. Performance of community health workers: situating their intermediary position within complex adaptive health systems. *Human Resources for Health* **15**: 59.

Kok MC, Dieleman M, Taegtmeyer M *et al.* 2015a. Which intervention design factors influence performance of community health workers in low- and middle-income countries? A systematic review. *Health Policy and Planning* **30**: 1207–27.

Kok MC, Kane SS, Tulloch O *et al.* 2015b. How does context influence performance of community health workers in low- and middle-income countries? Evidence from the literature. *Health Research Policy and Systems* **13**: 1–14.

Kok MC, Kea AZ, Datiko DG *et al.* 2015c. A qualitative assessment of health extension workers' relationships with the community and health sector in Ethiopia: opportunities for enhancing maternal health performance. *Human Resources for Health* **13**: 1–12.

Lehmann U, Sanders D. 2007. 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, 42.

Lehmann U, Twum-Danso NAY, Nyoni J. 2019. Towards universal health coverage: what are the system requirements for effective large-scale community health worker programmes? *BMJ Global Health* **4**: e001046.

Ludwick T, Endrias M, Kane S, Morgan A, Mcpake B. 2021. Challenges in implementing community-based healthcare teams in a low-income country context: lessons from Ethiopia's family health teams. *International Journal of Health Policy and Management*. 10.34172/ijhpm.2021.52.

Ludwick T, Morgan A, Kane S, Kelaher M, Mcpake B. 2020. The distinctive roles of urban community health workers in low-and middle-income countries: a scoping review of the literature. *Health Policy and Planning* **35**: 1039–1052.

Ludwick T, Turyakira E, Kyomuhangi T *et al.* 2018. Supportive supervision and constructive relationships with healthcare workers support CHW performance: use of a qualitative framework to evaluate CHW programming in Uganda. *Human Resources for Health* **16**: 11.

Lunsford SS, Fatta K, Stover KE, Shrestha R. 2015. Supporting close-to-community providers through a community health system approach: case examples from Ethiopia and Tanzania. *Human Resources for Health* **13**: 1–9.

Marcus TS, Hugo J, Jinabhai CC. 2017. Which primary care model? A qualitative analysis of ward-based outreach teams in South Africa. *African Journal of Primary Health Care and Family Medicine* **9**: a1252.

Mhlongo EM, Lutge E. 2019. The roles, responsibilities and perceptions of community health workers and ward-based primary health care outreach teams (WBPHCOTs) in South Africa: a scoping review protocol. *Systematic Reviews* **8**: 1–7.

Mickan S, Hoffman SJ, Nasmith L. 2010. Collaborative practice in a global health context: common themes from developed and developing countries. *Journal of Interprofessional Care* **24**: 492–502.

Molla S, Feleke A, Tsehay CT. 2020. Women's satisfaction with their urban health extension programme and associated factors in Gondar administrative city, northwest Ethiopia: a community-based cross-sectional study. *BMJ Open* **10**: 39390.

Moosa S, Derese A, Peersman W. 2017. Insights of health district managers on the implementation of primary health care outreach teams in Johannesburg, South Africa: a descriptive study with focus group discussions. *Human Resources for Health* **15**: 7.

Nelson C, Madiba S. 2020. Barriers to the implementation of the ward-based outreach team program in Mpumalanga province: results from process evaluation. *Journal of Primary Care & Community Health* **11**: 2150132720975552.

O'Reilly P, Lee SH, O'Sullivan M *et al.* 2017. Assessing the facilitators and barriers of interdisciplinary team working in primary care using normalisation process theory: an integrative review. *PLoS One* **12**: e0177026.

Østebø MT, Cogburn MD, Mandani AS. 2018. The silencing of political context in health research in Ethiopia: why it should be a concern. *Health Policy and Planning* **33**: 258–70.

Perry H, Crigler L. 2014. *Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policymakers*. Baltimore.

Perry H, Zulliger R. 2012. *How Effective are Community Health Workers? An Overview of Current Evidence with Recommendations for Strengthening Community Health Worker Programs to Accelerate Progress in Achieving the Health-related Millennium Development Goals*. Baltimore: Johns Hopkins Bloomberg School of Public Health.

Perry HB, Hodgins S. 2021. Health for the people: past, current, and future contributions of national community health worker programs to achieving global health goals. *Global Health Science and Practice* **9**: 1–9.

Rachlis B, Naanyu V, Wachira J *et al.* 2016. Community perceptions of community health workers (CHWs) and their roles in management for HIV, tuberculosis and hypertension in Western Kenya Siedner MJ (ed). *PLoS One* **11**: e0149412.

Rifkin SB. 1996. Paradigms lost: toward a new understanding of community participation in health programmes. *Acta Tropica* **61**: 79–92.

Schaaf M, Warthin C, Freedman L, Topp SM. 2020. The community health worker as service extender, cultural broker and social

change agent: a critical interpretive synthesis of roles, intent and accountability. *BMJ Global Health* **5**: 2296.

Schneider H. 2019. The governance of national community health worker programmes in low- and middle-income countries: an empirically based framework of governance principles, purposes and tasks. *International Journal of Health Policy and Management* **8**: 18–27.

Schneider H, Emmanuelle D, Besada D, Rohde S, Sanders D. 2018. Ward-based primary health care outreach teams in South Africa: developments, challenges and future directions. *South African Health Review* **7**.

Schneider H, Lehmann U. 2016. From community health workers to community health systems: time to widen the horizon? *Health Systems & Reform* **2**: 112–8.

Schneider H, Okello D, Lehmann U. 2016. The global pendulum swing towards community health workers in low- and middle-income countries: a scoping review of trends, geographical distribution and programmatic orientations, 2005 to 2014. *Human Resources for Health* **14**: 65.

Scott K, Beckham SW, Gross M *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* **16**: 39.

Shenhar AJ, Renier J. 1996. How to define management: a modular approach. *Management Development Review* **9**: 25–31.

Strodel RJ, Perry HB. 2019. The National Village Health Guide Scheme in India: lessons four decades later for community health worker programs today and tomorrow. *Human Resources for Health* **17**: 76.

Svitone EC, Garfield R, Vasconcelos MI, Craveiro VA. 2000. Primary health care lessons from the Northeast of Brazil: the Agentes de Saude Program. *Revista Panamericana de Salud Publica/Pan American Journal of Public Health* **7**: 293–301.

Tucker E. 2017. Engaging employees: three critical roles for managers. *Strategic HR Review* **16**: 107–11.

Tulenko K, Møgedal S, Afzal MM *et al.* 2013. Community health workers for universal health-care coverage: from fragmentation to synergy. *Bulletin of the World Health Organization* **91**: 847–52.

Vallières F, Hyland P, McAuliffe E *et al.* 2018. 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 Services Research* **18**: 806.

van Ginneken N, Lewin S, Berridge V. 2010. The emergence of community health worker programmes in the late apartheid era in South Africa: an historical analysis. *Social Science & Medicine* **71**: 1110–8.

Wahl B, Lehtimaki S, Germann S, Schwalbe N. 2020. Expanding the use of community health workers in urban settings: a potential strategy for progress towards universal health coverage. *Health Policy and Planning* **35**: 91–101.

Wang H, Tesfaye R, Ramana GNV, Chekagn CT. 2016. *Ethiopia Health Extension Program: An Institutionalized Community Approach for Universal Health Coverage*. Washington, DC: World Bank.

WHO Africa. 2019. Ethiopia launches investment case for noncommunicable diseases. WHO News.

World Health Organization. 2017. *Primary Health Care Systems (PRIMASYS): Case Study from Ethiopia*. Geneva: World Health Organization.

World Health Organization. 2018. *Noncommunicable Diseases Country Profiles, 2018: Ethiopia*. Geneva: World Health Organization.

Yin RK. 2009. *Case Study Research : Design and Methods*. Thousand Oaks: Sage Publications.

Zebre G, Gizaw AT, Tareke KG, Lemu YK. 2021. Implementation, experience, and challenges of urban health extension program in Addis Ababa: a case study from Ethiopia. *BMC Public Health* **21**: 167.