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Article

Can the financial burden of being a community health volunteer in western Kenya exacerbate poverty?

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Summary

Community health volunteers (CHVs) act as vital links between communities and health facilities, bridging the health service delivery gap common in low- and middle-income countries. In 2013, changes in funding in western Kenya left most CHVs without their individual monthly stipend. In this article, we explore how the implementation of a pooled incentive model had an impact on the lives of CHVs from two counties in western Kenya. Participation in this form of table banking was meant to allow CHVs to pool their resources together and invest in income-generating activities to offset the costs of unpaid health work. A pre-post qualitative study, consisting of focus group discussions and in-depth interviews explored CHV compensation, motivations and challenges experienced in 2013 and 2015, prior to and after the implementation of this pooled incentive model. Following withdrawal of the monthly stipend, we found that CHVs continued to take on roles and responsibilities of paid health workers, motivated by shared social identities and connections to their communities. However, replacing the stipend with a pooled-group incentive model seemingly exacerbated the financial burden already experienced by this vulnerable population. This study brings into question the sustainability and viability of a volunteer community health worker programme and highlights the need to address the financial burden associated with the CHV role in western Kenya.

Key words: volunteers, poverty, healthcare, Kenya

INTRODUCTION

There is a critical shortage of healthcare providers globally, especially in sub-Saharan Africa. Physicians, nurses and other health professionals are unequally distributed, with the majority located in urban areas [World Health Organization (WHO), 2006]. This is especially problematic in Kenya, where 74% of the population resides in rural areas (World Bank Group, 2016). In order to

bridge the health service delivery gap in low- and middle-income countries, the utilization of community health workers (CHWs) or community health volunteers (CHVs) has become prevalent, in comparison to high-income countries which have not experienced a deficit in healthcare providers (WHO, 2007).

CHVs have been recognized for their potential to achieve population health goals where resources are limited, access to basic services is low and large disparities in health outcomes exist (Perry *et al.*, 2014; Cataldo *et al.*, 2015). When effectively selected, mentored and equipped with appropriate supplies, CHVs can improve key health behaviours and outcomes, extend the accessibility of health services and strengthen linkages between communities and services (Perry *et al.*, 2014). However, what is often overlooked is that CHVs working in low- and middle-income countries are members of the communities where they work, and therefore typically face the same financial insecurities as their fellow community members. The financial burden placed on CHVs can be exacerbated by conducting unpaid community health work and time taken away from other income-generating opportunities (Takasugi and Lee, 2012).

Theories of CHV motivation

The factors affecting CHV performance have been well described by several authors (Lehmann and Sanders, 2007; Naimoli *et al.*, 2014; Strachan *et al.*, 2015) and categorize incentives into non-financial (e.g. status in community), in-kind (e.g. bicycles) and financial at two levels—the community level and the health system level. Strachan *et al.* identified three layers of CHV motivation (Strachan *et al.*, 2015) from the standpoint of individual attitudes and behavioural intentions—the individual, organization/work context and societal/cultural levels. The authors further describe the social identity approach (SIA) in relation to CHV motivation. SIA recognizes not only individual processes that determine behaviour, but also accounts for interpersonal relationships and group membership and their perceived value to individuals. In this way, the SIA recognizes the influential role of collective and community relationships in CHV motivation. Although our study started out to explore the effects of changing the financial compensation model, all of these other factors were identified by our participants as playing a role.

CHVs in western Kenya

Based on the success of primary care models in other countries, in 2006 the Kenyan government launched a comprehensive package of services that emphasized health promotion, disease prevention and simple curative services, to be delivered at the household level by CHVs [Ministry of Health (MoH), 2006]. Community health extension workers (CHEWs) supervise and provide training, coaching and support to these CHVs. In contrast to CHVs, CHEWs are recognized as a part of the formal health system as government employees, and are based at health facilities (MoH, 2006). In western Kenya, the implementation of this community strategy was supported in part by the Academic Model Providing Access to Healthcare (AMPATH), through the United States Agency for International Development (USAID) and the President's Emergency Plan for AIDS Relief (PEPFAR), which provided resources and support to train 1370 CHVs and 130 CHEWs (AMPATH, 2013).

AMPATH consists of Moi University, Moi Teaching and Referral Hospital and a consortium of North American academic health centres working in partnership with the Government of Kenya (Einterz *et al.*, 2007). Since 2010, AMPATH has trained CHVs from communities across western Kenya to support the delivery of health education and services in alignment with Kenya's community strategy. CHVs are meant to manage health conditions at the household level and act as a link to health facilities. Their specific tasks include taking vital signs, advising on family health services and participating in health promotion and education activities (Rachlis *et al.*, 2016).

Prior to 2013, AMPATH provided CHVs with a monthly stipend of 2000 KSH (~20 USD), adhering to guidelines from the Kenyan government. This stipend was significantly lower than the average national minimum wage of 5218 KSH (~52 USD), yet was an important motivation for CHVs to participate in health activities. In 2013, a series of policy changes led AMPATH, like other non-governmental organizations supporting CHVs in Kenya, to discontinue the individual monthly stipend. The initial investment to launch the community strategy was meant to be sustained in the long term through the Government of Kenya. However, with devolution to a county governance system in 2013, it was left to the leadership of each individual county to prioritize and not all agreed to assume these high costs in their budgets. Further, a change in leadership at USAID favoured a programme more focused on HIV prevention and treatment, thus shifting resources away from the community strategy (USAID, 2014) to high burden HIV areas (PEPFAR, 2012). Together, these changes left implementing partners to find other means to sustain individual stipends for CHVs. In response, AMPATH introduced a pooled incentive model called GISE (Group Integrated Savings and Empowerment) to

provide CHVs with a way to pool their resources and invest in each other's income-generating activities. Participation in this form of table banking was meant to incentivize CHVs as a group, allowing them to earn income from profits generated from the group and their newly developed income-generating activities. This policy shift was aimed at mitigating the effect of the removal of the stipend and reducing dependency on unpredictable donor funding.

The GISE model trains groups of 15–30 individuals to create a constitution and learn basic accounting (Mukankusi *et al.*, 2009). In pooling their biweekly contributions, GISE groups issue loans to members at 10% interest, and this interest is added to the pooled sum of group money. Variations on this form of table banking have become increasingly popular over the past decade and have spread across the continents of Africa and Asia. The models have proven to be a flexible savings-led microfinance initiative, appropriate for resource-poor environments and vulnerable populations (Mukankusi *et al.*, 2009). Although pooled financial incentive models have been used by various organizations and populations, there is limited knowledge on the use and impacts of such models among groups of lay healthcare providers, such as CHVs. Our research question was to explore CHV compensation, motivations and challenges experienced in 2013 and 2015, prior to and after the shift to a pooled incentive model from an individual monthly stipend.

METHODS

This was a qualitative pre-post study with Government of Kenya AMPATH-supported CHVs, and paid Government of Kenya and AMPATH staff that worked closely with CHVs. Data were collected in both 2013 and 2015, before and after the withdrawal of the monthly stipend. Permission was obtained from sub-county Health Management Teams and local AMPATH managerial staff to contact CHVs and staff at two sub-counties: Bunyala and Eldoret West. In both 2013 and 2015, CHVs recruited for participation were over 18 years of age and had been a CHV for at least 4 months.

In 2013, focus group discussion (FGD) participants were selected purposefully and stratified by gender and performance. To stratify by gender, the two FGDs in Bunyala were with men, and the two FGDs in Eldoret West were with women. The rationale in doing so was to ensure that CHVs were comfortable speaking freely within their respective groups. In each community, one FGD was with high performing CHVs and one low performing, based on CHEW recommendations, to ensure that a range of motivations be represented. Prior to participating in the FDGs, CHVs were asked to complete an anonymous, one-page demographic survey that inquired about age, education level, socioeconomic status, marital status, number of dependents and number of years working as a CHV.

In 2015, the intention was to hold FGDs with the same participants as in 2013, however, it was challenging to locate all previous participants. In Bunyala, only 7 of the original 17 male CHVs were located. Ten additional CHVs were then recruited based on their participation in GISE. In Eldoret West, 12 of the original 18 female CHVs were located, and therefore no additional CHVs were recruited. In each county, one FGD was held with CHVs with more experience utilizing the GISE programme, and a second with those less experienced. In 2013, two active CHVs, and in 2015, two CHVs who had stopped working for AMPATH since the removal of the stipend, were interviewed using in-depth interview guides based off FGD guides. FGDs and interviews were audio-recorded and conducted in Kiswahili by a Kiswahili-speaking research team member.

In addition, four AMPATH staff and four CHEWs, selected for their diverse experience and work in proximity to CHVs in Bunyala and Eldoret West, were interviewed in 2013. The same CHEWs and two original AMPATH staff were interviewed again in 2015. Recruited staff were over the age of 18 and had been employed for a minimum of 6 months. Interviews were audio-recorded and conducted in English.

Data analysis

Audio-records from FGDs and interviews with CHVs were directly transcribed and translated from Kiswahili to English with help of a translator for qualitative data coding and analysis, while interviews with CHEWs and AMPATH primary healthcare staff were transcribed directly by the study team (AK and SM). Coding of the data was done by AK and SM across all responses, through familiarization of data, thematic analysis, indexing, mapping and interpretation. Themes related to CHV motivations and financial burden were summarized across FGDs and in-depth interviews, with comparisons made across both 2013 and 2015. FGD and interview transcripts were coded using NVivo software. Data collected from demographic surveys were summarized using frequencies and means and were calculated using Microsoft Excel.

RESULTS

Participant characteristics

In 2013 a total of 35 CHVs participated in FGDs and 29 in 2015, while 4 CHVs, 4 CHEWs and 4 AMATH staff

Table 1: Characteristics of CHVs in 2013 and 2015

Characteristics	2013($n = 35$)	2015($n = 29$)
Average age	38.6	41.6
Sex		
Male	48.6% (17)	58.6% (17)
Female	51.4 % (18)	41.4% (12)
Level of education		
Primary	17.1% (6)	37.9% (11)
Secondary	77.1% (27)	55.2% (16)
College	5.8% (2)	6.9% (2)
Marital status		
Married	88.6% (31)	75.9% (22)
Separated	8.5% (3)	17.2% (5)
Never been married	2.9% (1)	6.9% (2)
Material of home		
Mud	85.7% (30)	93.1% (27)
Wood	8.5% (3)	0% (0)
Cement/brick stone	5.8% (2)	6.9% (2)
Participation in other income-generating activity		
Yes	25.7% (9)	10.3% (3)
No	74.3% (26)	89.7% (26)
Average number of years active with AMPATH	2.6	4.2
Average number of dependents	4.7	4.7

were interviewed. At the start of the study, the average age of CHVs was 38 (Table 1). Most were married, reported four to five dependents, and had completed secondary education. The vast majority of participants lived in houses made of mud, and as such, were considered to have a low socioeconomic status.

With respect to the research question in examining the compensation, motivation and challenges faced by CHVs, two major themes emerged: (1) the differentiated value of CHVs as volunteers versus employees at the community and the health system levels and (2) the financial burden of community health work.

The differentiated value of CHVs as volunteers versus employees

A dilemma in community-based health work is balancing the duties and responsibilities appropriate for unpaid volunteer work versus paid work. In both 2013 and 2015, CHVs reported high personal satisfaction in performing community health work because it equipped them with knowledge that benefited the community, themselves and their families. They were rewarded by the positive behaviour change they witnessed around them. This intrinsic motivation did not change with the compensation scheme.

However, CHVs reported that community members valued them less when they found out they were not AMPATH employees. This was an often-stated source of discouragement in 2015 that undermined CHVs' ability to act as health resource persons in their communities. CHVs also described difficulty integrating themselves within the healthcare system because of their volunteer status. While CHVs described having positive relationships with health providers, allowing for an effective referral and networking strategy, other CHVs experienced difficulties with hospital staff and security who were reluctant to recognize CHVs and their referred clients as a legitimate part of the healthcare system.

Although no longer receiving a stipend in 2015, CHVs continued to be viewed as being accountable to their previous duties by both the healthcare system and their communities. CHVs reported in both 2013 and 2015 that their workload was high indicating no change with the withdrawal of their stipend. In 2013, some CHVs said they found it demotivating when CHEWs assigned tasks beyond their expected duties and unfairly reprimanded them when they were not completed in time. In 2013, CHVs expressed confusion about whether they were allowed to hold other forms of employment, fearing they might lose their CHV positions for taking paid jobs other than farming and fishing. This perspective was sharply different from CHEWs and AMPATH staff in 2013 who wanted CHVs to view their role as voluntary. From their perspective, this was critical to ensure they did not become dependent on unsustainable donor funding. And yet, among the CHVs operating at the healthcare system level, there was widespread recognition that the stipend had been viewed as a salary.

> The stipend has created a different mindset in most of the CHVs in the sense that it makes the volunteer work appear like employment. . ..[I]t has told the CHVs a story that AMPATH has them at heart regardless of how erratic the stipend delivery is to them. It tells them, 'we belong to AMPATH'. (2013, AMPATH Staff)

Participants reported that once recognized as CHVs in their communities, there was no way to relinquish their position. CHVs stated that even if they abandoned the CHV role, community members would seek them out regardless. Similar to a village elder, their identity had become valued and integral in the community. Navigating the blurred line between volunteerism and employment has produced financial concerns for CHVs.

The financial burden of health work for CHVs

Although CHVs in 2013 and 2015 recognized the social value of their roles, it was clear that it did not always seem to add up when accounting for the costs they

incurred in the CHV role. CHVs spoke about how their desire to improve their family's economic well-being was at odds with their role as volunteers. This led to family conflicts as children and spouses of CHVs expected more compensation for their time spent on community health work for household items and school fees. The stipend they received was low, particularly given the increasing costs of living and the amount of time they devoted to community health work. The following quotes illustrate the household challenges faced by CHVs:

> At the end of the month the [CHVs] were not paid enough and they had been working. They therefore could not supply their families with some of their basic needs, so they decide to leave the job. (2013, Female FGD 2, Eldoret West)

> My children can't get the basic needs like soap and you can't tell the community about being clean when the CHV is not clean. (2015, Female, FGD 3, Eldoret West)

Therefore, it was especially challenging for CHVs when the stipend was withdrawn and the GISE system introduced in late 2013. Two years later, CHVs reported they felt less valued by AMPATH. They said that it felt unfair to work so hard and have nothing tangible to show for it, especially since their lives became more financially precarious once the stipend was stopped. For some, their spouses were less supportive when they did not receive a stipend. Participating in the pooled incentive model did not seem to incentivize CHVs—as a group or as individuals. Indeed, in order to participate in GISE, CHVs had to contribute their own money to the pool. For CHVs living in poverty, finding the money to contribute to a table-banking scheme as a condition of being a volunteer created additional financial and social burdens that came to light following implementation. The following quote illustrates the poverty faced by CHVs:

> Firstly what makes our work hard is hunger, there is no food, and secondly is [the lack of] working tools. (2015, Male, FGD1, Bunyala)

An important way in which the stipend prior to 2013 had incentivized CHVs and their families was to offset the out-of-pocket expenses they incurred in performing expected duties. However, from the outset, in 2013, CHVs described insufficient transportation and materials required to facilitate their work. For example, some households on the periphery of a district were left out of routine community health coverage because CHEWs did not feel they could ask CHVs to use their own money for transport. This did not change with the introduction of the pooled incentive model. CHVs serving these communities, aware that this decision meant that households would be left out of immunization, reported taking on costs associated with outreach, such as paying for motorcycle rides. CHVs also said they paid out of their own pocket for transport to get pregnant women or ill patients to health facilities. In 2015, CHVs said they felt that it was still their responsibility to pay for such transport and ensure the individuals received the medical care they required. Until 2013, to coordinate their work, CHVs occasionally received cell phone credit that varied from 150 to 300 KSH/month (~1.50–3.00 USD). In 2015, CHVs were still not receiving sufficient airtime credit to communicate with their CHEWs and community members, and therefore had to pay for airtime themselves or leave their community health work tasks undone.

Even with withdrawal of the stipend and the introduction of the pooled-group incentive model, CHVs reported that community members continued to expect CHVs to distribute supplies whenever they visited. As these supplies were only sporadically delivered to the CHVs, it was challenging for them to make regular visits due to these expectations from the community.

> In my opinion, the negative attitudes of us within the community are brought about by the lack of items to give to the residents. . .. Because of the inadequate supply of such items, the residents feel as though we are disturbing them. I think family planning kits. . .have helped us a lot in that regard, because at least we have something to give out. . . (2013, Female FGD 3, Eldoret West).

In addition to these out-of-pocket expenses and expected community demands, CHVs also described the opportunity costs of their CHV work. In accounting for their time, CHVs reported spending 4–5 h per day, several days per week on community health work, leaving little time for their income-generating jobs. This created tension when a CHV's need for paid work conflicted with the number of hours required to complete their volunteer duties. CHVs mentioned being interrupted by CHV tasks while performing their paying job, such as when a woman went into labour and needed the CHV to accompany her to the hospital.

As a result, in 2015, CHVs reported that some of their peers reduced or abandoned their community health work once the stipend was suspended, as they were not able to meet their basic needs while spending the majority of their time on volunteer work.

> We lost some CHVs through that, especially those who served in the islands [in Bunyala], because you know the explanations they were giving us was that 'I have to

> work for my kids to go to school, and the only work I can do is to fish'. (2015, CHEW)

In 2015, among those CHVs still performing tasks in the programme, there was greater emphasis on how the financial burden of being a volunteer was taking a toll on them. Nevertheless, among these participants, there continued to be a strong preference for community health work rather than other income-generating activities.

> If the county employ[s] us, I will leave other small business[es]. . .and I will concentrate on my work because I will [be] able to get money to pay other people to do my pending job (2015, Female, FGD 3, Eldoret West)

This willingness to forego paid work was highly influenced by gender, income-generating ability and age. If a female CHV had a husband who was the primary provider for her household, she would be able to devote more time in the community, as compared with a woman who was the sole primary provider for her family. Young people, who had initially been heavily recruited as CHVs, were often the first to abandon their CHV role as they were more likely use the opportunity as a stepping stone to move to secure a paying job. As a result, in 2015, the focus for CHV recruitment shifted to older people who were not in a position to move and less likely to secure paid work according to those involved in the design of the CHV programme:

> We made a mistake initially to recruit young people. So right now if someone was to get CHVs, it would be important to look at those people who have already, I mean I wouldn't say expired but their energy levels are not as vibrant as the young people. That would be the best cohort to use. (2015, AMPATH staff)

In shifting the CHV recruitment strategy to older members of the community, with less ability to secure paying jobs, the implementation of a pooled incentive model added financial strains for those remaining CHVs. Since many CHVs did not have sufficient funds to meet all of their needs, they borrowed GISE funds to cover basic expenses that used to be partially covered by the stipend, such as children's school fees.

> GISE does not create for us to other jobs because mostly when we get that money we only pay for our children's school fees, and we only deposit a small amount of money because we don't get enough money [from our own resources]. (2015, Male, FGD 1, Bunyala)

This created a new issue of having to pay back loans. One CHV commented that they may have to sell household assets, such as chickens or a cow, in order to pay back their loan from GISE.

The GISE model was originally intended to include an externally funded 'starter pool' that would have allowed CHVs to take a loan sufficient for them to start their own income-generating business. However, due to funding constraints, this was not feasible. CHVs participating in GISE groups were required to make a biweekly contribution as a condition of their membership. Therefore, the amount that could be borrowed as a start-up loan was limited to what fellow CHVs could contribute to the pool. CHVs made it clear that they found it challenging to borrow large sums of money.

> If someone wants to start another job, for example a small business, GISE might help by providing funds but when it comes to a big project it cannot because funds wouldn't be enough. (2015, Male, FGD 1, Bunyala)

Overall, the incurred out-of-pocket expenses, expectation of community demands and forgone income-generating opportunities experienced by CHVs contributed toward their financial burden. These factors were further exacerbated by the pressures contributing to the GISE model in the absence of monthly individual stipends.

DISCUSSION

CHVs have been used across Kenya to ensure the delivery of health education and services in alignment with Kenya's community health strategy. Our study highlights the financial consequences of task shifting from health professionals to CHVs in western Kenya. First, rural communities that require the support of CHVs are usually poor, with members struggling to meet basic needs (Kenya National Bureau of Statistics, 2014) and the CHVs that volunteer from these communities are no different. Given their poverty, financial remuneration is a necessity to perform this kind of work. According to the theories of CHV performance (Lehmann and Sanders, 2007; Naimoli *et al.*, 2014; Strachan *et al.*, 2015), the status conferred by the community, enjoyment of the work and the idea of helping others were supported by our study as powerful motivators for CHVs. In the present study, given that some CHVs remained in their roles in absence of steady remuneration, it appears these intrinsic motivations were so strong that they overrode competing adverse factors, such as the lack of in-kind supports, weak recognition by the healthcare system and inadequate financial remuneration for the CHVs. By providing care to individuals, these CHVs had gained the trust of the community (Kok *et al.*, 2017). The strength of this role as perceived by

the community may have created a tension retaining CHVs in this work. A shared social identity may make it challenging for CHVs to leave their roles, despite desires for more stable income-generating opportunities. This social status can be both a motivation for CHV work (Strachan *et al.*, 2015) and a concern, if not well resourced (Kok *et al.*, 2017).

In the face of unpredictable and unsustainable international donor funding in under-resourced health systems, the shift to more sustainable models of financing is desirable in order to reach underserved populations. The withdrawal of the monthly stipend to incentivize CHVs in Kenya was a reasonable policy shift from the donor perspective. However, our research highlights a major consequence of this policy shift—the financial burdens associated with the CHV role created by lack of basic supplies to do the work, and lack of transportation and phone credit compensation. In other studies, in-kind resources provided by the healthcare system (e.g. bicycles, rain boots) as well as training and basic supplies (e.g. bandages, soap, family planning kits) were key to successful CHV performance (Lehmann and Sanders, 2007; Naimoli *et al.*, 2014; Gilmore *et al.*, 2016; Kok *et al.*, 2017). In our study, CHVs reported paying for items like soap and rain boots themselves in order to adequately complete their tasks, as well as meet the expectation of community members.

Other studies also mentioned that financial incentives such as transportation reimbursements contributed to success (Greenspan *et al.*, 2013; Naimoli *et al.*, 2014; Gilmore *et al.*, 2016). The results of our analysis show that in both 2013 and 2015, CHVs faced additional financial expenses such as paying for transport and phone credit. This burden was offset slightly by the stipend prior to 2013, and thus the burden was increased under the GISE model.

While some, albeit low, compensation was provided to CHVs in individual monthly stipends prior to 2013, the GISE model arose as a major concern. With no initial funds to start up these pools, there was no opportunity to help CHVs move beyond the impoverished resources they had. The fact that CHVs felt pressured to sell their assets, especially animals like chickens and cows, in order to fully participate in GISE, illustrates how this model maintained and possibly deepened the burden of poverty experienced by CHVs.

Second, the long volunteer hours needed to complete the duties of a CHV require an examination of the extent to which health professional tasks have been shifted onto volunteers and whether this is a sustainable model for the long term. The World Health Organization (WHO) recommends implementing a task-shifting model to more efficiently utilize the trained healthcare workers available in an area. However, in order for a task-shifting programme to succeed, sufficient management and supervision as well as political support and commitment are required (WHO, 2007). In the context of task shifting to CHVs, the WHO states that CHVs should receive adequate wages and/or appropriate incentives to ensure that essential health services are provided in a sustainable manner (WHO, 2008). It appears that a form of task shifting has taken place with the use of CHVs in western Kenya who are neither recognized as formal members of the labour force, nor financially compensated. Although health work is intrinsically valued by CHVs and their communities, once volunteerism becomes a requirement for the system to 'work', there becomes an urgent need to interrogate whether this type of 'voluntary' work is exploitative.

Sander *et al.* found that CHVs in Kenya work (Sander *et al.*, 2015) an average of 5.3 h per day, and 36% of that time was spent conducting tasks traditionally performed by clinicians. This study suggested that task shifting to CHVs can enable clinicians to work more efficiently and save an average of 2.5 h per day (Sander *et al.*, 2015). Based on the amount that public health officers earn, this study estimated that the work of CHVs could be valued at 117 USD per month (Sander *et al.*, 2015). However, formally introducing a task-shifting model for CHVs would entail providing remuneration and would require additional resources to appropriately train the CHVs, which is arguably costlier than hiring trained healthcare professionals (Baine and Kasangaki, 2014). In our study, the long volunteer hours created opportunity costs of forgone income among CHVs. A study recently conducted in Ethiopia found that due to similar opportunity costs, CHVs in Ethiopia were more deprived and distressed than other members of the community that they served (Maes *et al.*, 2018).

There are lessons to be learned from the diverse models of care and CHV remuneration models implemented in under-resourced communities across the world. In the late 1970s, India aimed to provide one CHV for every 1000 rural residents. CHVs were appointed and accountable to the communities they served yet they were perceived as government employees on salary (Lehmann and Sanders, 2007). Of note, CHVs were expected to only work 2–3 h per day for 2–3 days per week leaving time for farming and other income-generating activities. CHV compensation was the responsibility of the communities they served, while the government guaranteed training, the integration of workers into the health system and a supply of medicines and materials (Lehmann and Sanders, 2007). In Rwanda, CHVs were remunerated based on community performance-based outputs and indicators rather than a monthly salary (Condo *et al.*,

2014). However, CHVs reported problems with transparency and management, in addition to a lack of proper training and misunderstanding of the incentive model (Condo *et al.*, 2014). In a final model from Ethiopia, salaried CHV roles were created as part of a government-initiated health extension programme in 2004. These CHVs were integrated into the health system, and each was responsible for a catchment area of approximately 2500 community members. They received 1 year of initial training to provide promotive, preventative and basic curative care (Kok *et al.*, 2017). Such diverse models indicate that no one model fits all. With adequate financial incentives (cash and in-kind), non-financial incentives such as community recognition, training, supervision and ownership, plus provision of materials and supplies unique to each setting, successful CHV programmes can improve community health outcomes without increasing financial burdens experienced by CHVs.

A strength of our study is that it includes viewpoints collected before and after the compensation change, with data collected from over half (58%) of the same participants, 2 years apart. It also highlights what may be interpreted as a policy failure, a finding that is rarely shared in publication. We are aware that the planning and implementation of this policy change was suboptimal and may have contributed to the negative impact of the change. As well, this study involved two areas in Kenya where the community strategy was supported through AMPATH and may not be representative of all Kenyan CHV programmes.

An additional limitation of this study includes the number of original CHVs from 2013 who were unable to be located in 2015, as this may have introduced loss to follow-up bias. In 2015, 11 males and 6 females had moved away from the area and had not left contact information. We suspect their decisions to move may have been influenced by the removal of the stipend, and the need to find paid work elsewhere. The fact that more men than women had dropped out of the CHV programme is supported by Olang'o *et al.* who found that male (Olang'o *et al.*, 2010) CHVs are more likely to choose paid opportunities over their volunteer work, in order to provide for their families.

CONCLUSION

In our study, CHVs were already living in poverty and reported additional financial burdens with both the stipend incentive model and the pooled-group incentive model. Given that community health work requires resources, like cell phone credit, transport, first aid supplies and training support, expectations that impoverished CHVs can do this work without such resources places additional financial burden on them. If these in-kind resources are provided, poverty among CHVs would be less likely to worsen. However, even with these resources, the hours of work in community health as volunteers, the expectations from the community and demands from the health care system, make it difficult for CHVs to be involved with other income-generating opportunities. This may end up sustaining their low socioeconomic position over the long term. If programmes supporting this community strategy are able to recognize CHVs as vital links, through a commitment to compensation, training, basic medical supplies and other supports, such a measure would go a long way toward alleviating the financial burden associated with the CHV role in western Kenya.

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ETHICS

This study received approval from the University of Toronto Research Ethics Board, and the Moi University Institutional Research and Ethics Committee.

CONFLICT OF INTEREST STATEMENT

None declared.

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