

# Factors Impacting Sustainability of Community Health Worker Programming in rural Uganda: A Qualitative Study

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## Research article

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# Abstract

**Background** Despite significant global progress towards decreased child mortality over the past decades, over 5 million children died before reaching their fifth birthday in 2018. Additionally, the number of women dying during pregnancy and childbirth was 295, 000 in 2017. Majority of these deaths occurred in sub Saharan Africa yet these deaths are preventable with known interventions. A huge global investment has been made in initiating community health work (CHW) programs which play a critical role in health promotion with increasing scale up in sub Saharan Africa. The government of Uganda continues to identify maternal, newborn and child health (MNCH) programming as a priority and national policies continue to encourage community-based approaches for health promotion through the Village Health Team approach to reduce maternal and child mortality. However, sustaining of CHWs programs remains a challenge and less is known about if and how these CHW networks can be maintained.

**Methods** A sustainability-focused qualitative evaluation was conducted five years following a district-wide comprehensive MNCH intervention that involved selection and training of a large CHW network (n =2626) in 2 rural districts in southwest Uganda. Focus Group discussions (FGDs) and in-depth interviews (IDIs) were conducted to gain insights into the factors affecting CHW program sustainability. Interviews were digitally recorded then translated and transcribed directly into English. Data was managed using NVivo software (version 12, QSR International, Burlington Mass.). Thematic content analysis was done to identify themes relevant to sustainability.

**Results** Enablers and barriers to CHW sustainability identified by study participants included health system effectiveness (availability of supplies, medicines and services and availability of facility health providers), community health worker program factors (CHW selection and training, CHW recognition and incentives, CHW supervision and CHW refresher trainings), community attitudes and beliefs, and stakeholder engagement (alignment with district priorities and programs and local government involvement).

**Conclusion** Effectiveness of health systems and human resources were major factors in sustainability for this community health intervention. Sustainability could be strengthened through increased community member involvement during implementation and improved support for general health system effective functioning.

## Background

Despite significant global progress towards decreased child mortality over the past decades, over 5 million children died before reaching their fifth birthday in 2018. Roughly half of these deaths occurred in sub-Saharan Africa (1, 2). Global estimates of women dying during pregnancy and childbirth in 2017 were 295,000; approximately two-thirds of these died in Sub-Saharan Africa (SSA). The vast majority of maternal and child deaths are preventable with known interventions (3). A combination of service provision and community-based strategies are needed. Globally, Community Health workers (CHWs) are

employed for many tasks (including promotion of healthy household practices and care seeking), have proven effective in improving health outcomes, including reduction of maternal and child mortality. This is true in SSA and even in Uganda (4–6)

A huge global investment has been made in initiating CHW programs. CHWs now play a critical role in health promotion and programming internationally. In SSA, CHWs are widespread in many countries; local and national scale up continues. The government of Uganda identifies maternal, newborn and child health (MNCH) programming as a priority (7). National policies encourage community-based approaches to health promotion. Specifically, the Village Health Team approach (8) involves mobilization of networks of volunteer community health workers (CHWs) countrywide, selected from within villages in an effort to strengthen ‘demand-side’ care-seeking and home practices and bringing facilities and communities closer together towards improved health. However, in Uganda and globally, continuing to maintain CHWs, especially at scale, remains a challenge and there is little known about if and how such networks can be maintained.

Many studies have documented success of district and national MNCH packages in Africa (9) and Uganda (10, 11). The majority of studies look at impact during the project period with limited documentation of MNCH program sustainability post-intervention (12, 13). Globally, studies to understand barriers and enablers to CHW program scale up and sustainability are fewer (14). Of studies published in SSA, most relate to HIV/AIDS programming (14, 15). With global efforts to scale up MNCH-focused CHWs, building the understanding of sustainability in different program types and different contexts is critical. Huge investments in CHW program initiation is only warranted if there is initial CHW impact plus motivation and investment to ensure programs and results can be sustained over the medium and long term.

In health/community programming, sustainability refers to continued use of components and activities related to the intervention to achieve desirable health outcomes within the population of interest after the implementation phase (16, 17). For a health/community intervention to be considered sustainable, there should be continuity of relevant activities and resources in the direction of its original objectives (18). Some of the most common factors previously identified in CHW programming sustainability assessments include management and supervision, use of existing community structures, and integration in the existing health system (15, 19–24)

Between 2012 and 2014, a comprehensive MNCH intervention was scaled up in two rural Ugandan districts supported through a university-district partnership known as Healthy Child Uganda and funded by Global Affairs Canada. The intervention took a district-wide approach to programming, combining ‘service side’ (health facility) and ‘demand side’ (community) activities. By project end, MNCH indicators had improved. Care-seeking for antenatal, delivery and postnatal services was increased (25, 26) while prevalence of pneumonia, diarrhea and underweight status declined (26). Importantly, a network of over 2000 MNCH-focused volunteer CHWs was established and active. Five years later, recent follow up has

documented that over 80% of these volunteers remain active, promoting MNCH within their communities(27, 28).

## Method

### Study Setting

Between 2012 and 2014, Healthy Child Uganda in partnership with districts implemented a comprehensive MNCH package in 2 districts in rural Uganda. Bushenyi and Rubirizi districts, located in a hilly region in southwest Uganda, have a combined population of approximately 350,000 people. Most families are subsistence farmers, living in extreme poverty; communities are quite scattered and due to poor roads and distance, transport to health facilities may be challenging.

### CHW Intervention

An MNCH intervention was implemented district-wide in both districts. Development of a CHW network throughout the district was part of a larger MNCH capacity-building package. The package was known locally as 'MamaToto' (mother-child in Swahili) and incorporated national MNCH and community health worker guidelines (26) building on past community-based programming experiences of local partners and the districts. MamaToto activities occurred at three levels: (1) district i.e. health system strengthening such as data, transport and planning; (2) health facilities i.e. clinical, management and governance training and infrastructure upgrades; and (3) communities i.e. establishment of district-wide network of MNCH-focused CHWs. Implementation followed a purposeful 7-step process of orientation, scanning, planning, training, equipping, and reflection led by districts themselves.

During the project, a total of 2626 CHWs (69% female) were selected by their own villages and received initial (5 day) and refresher (3 day) training in MNCH health promotion and community development according to the government curriculum. CHWs were organized into teams and supervised through monthly reporting meetings by trained local health facility-based supervisors.

### Study Design

Five years post intervention (July/August 2018), a sustainability-focused qualitative evaluation was conducted. Study approval was granted by the Research Ethics Committee of Mbarara University of Science and Technology (#04/06-17), Uganda National Council for Science and Technology (#SS4386), and the University of Calgary Conjoint Ethics Board (study # REB17-1741). Informed consent was obtained from all study participants in their language of choice.

### Sampling and Study Participants

Purposeful selection was used to identify study participants from MamaToto intervention districts. From a total 24 intervention sub-counties (geopolitical unit), 3 were randomly selected. The number of focus group discussions (FGDs) was determined by the available community health workers in the selected

sub-counties. For FGDs, direct and indirect project beneficiaries including CHWs and community leaders were selected: From within each selected sub-county, 3 CHW teams (each supervised by a different health facility) were purposefully chosen to represent various levels of activity in relation to fulfilling their responsibilities based on local government perception (i.e. effectiveness in mobilizing for available services, frequency of community meetings, report completion and submission rates). In depth interview (IDI) participants were purposefully selected based on their potential to contribute meaningfully to the topic areas (i.e. sustainability) from a variety of perspectives. IDI participants included key decision-makers, implementers, and community leaders familiar with the MamaToto intervention.

## **Data Collection**

FGD and IDI tools were designed to elicit participant insights about factors affecting sustainability of CHW programming. Interview guides were developed by research team members. Trained interviewers, fluent in English and local language (Runyankore), facilitated semi-structured FGDs and IDIs. Interviews were digitally recorded then translated and transcribed directly into English.

## **Data Analysis**

Data was managed using NVivo software (version 12, QSR International, Burlington Mass.). Study team members (SA, MT, JK, EB, and FO) conducted analysis. All analysts conducted an initial review of 5 common transcripts using thematic content analysis to identify themes that were relevant to the sustainability. They then compared findings, discussed and harmonized differences and generated a code book that comprised of major themes. The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

# **Results**

## **Participant Characteristics**

FGDs involved a total of 62 community health workers (32 males, 30 female) who were divided into 6 groups of 10–12 participants. IDIs were conducted with 17 district stakeholders including health providers (4 health assistants, 3 facility health workers) 4 community development officers, and community leaders (3 elected community leaders, 3 Health Unit Management Committee Chairpersons). The mean age of all participants was 42.6 years (SD 10.5). Other social demographic characteristics are shown in Table 1.

Table 1  
Participant sociodemographic  
characteristics

Variable	Number (%)
Sex	32 (51.6)
Male	30 (48.4)
Female	
Marital status	2 (3.2)
Single	56 (90.3)
Married	4 (6.5)
Widowed	
Highest Education Level	12 (19.4)
Primary	38 (61.3)
Secondary	12 (19.3)
Above Secondary	

## Key Factors

Enablers and barriers to CHW sustainability identified by study participants were grouped under four categories. Here, categories are presented together with details of sustainability-related factors within each category.

### 1) Health System Effectiveness

Participants reported that a number of health system factors affected the sustainability of CHW programming. Staffing and supply shortages were seen to negatively affect CHW activity level and impact post intervention:

**Availability of Supplies, Medicines and Services:** CHWs described feeling dispirited when they had done a good job creating demand, yet when patients they mobilized to seek care attended facilities, medical supplies and medicines were lacking:

*...when you tell someone 'take your child for immunization' she will simply tell you that 'whenever she goes there [health facility] she does not find any drugs'...the woman loses morale instead and comes back. (CHW, FGD).*

*... [People] do not get what they are expecting when they reach [the health facility]. She leaves [home] sick knowing that she will get treated because she is a poor woman with no money and when she reaches there [health facility], the health work tells her... 'I have written for you... go and buy drugs... there are no drugs here'. (CHW, FGD).*

Additionally, community members seeking care were reported to sometimes be requested payment by health providers before receiving services, this was discouraging to CHWs:

*Health services are there but sometimes the common person who goes to access [antenatal care] may not afford to pay the charges. ... Because when she gets [to health facility], they will ask her for some money... It becomes a challenge for women when they go to deliver from health facility... (CHW, FGD).*

Payment requested of clients was seen by participants as a barrier; failure to get adequate or reasonable services when encouraged or sensitized to do so by a CHW were seen to decrease the potential impact of the CHW referral and demotivate CHWs because the impact of their hard work is reduced; participants suggested that where service expectations are not met, communities may begin to lose trust and no longer follow CHW advice.

**Availability of facility health providers:** Participants linked sustainability of the CHW network with facility health providers who were available to attend to women and children. Some community members complained that they continued to face shortages, tardiness or absence of health workers when they arrived at health facilities. This was seen to compromise sustainability of the community intervention and may discourage to CHWs who refer patients.

*... there are always few health workers who do not keep time...the facility is supposed open by 8:00am...you find them [health care providers] beginning work at 11:00am. (CHW, FGD)*

## 2) CHW Program Factors

A number of CHW program factors were identified by participants as key influencers of CHW sustainability.

**CHW Selection and Training:** The all community process used in the intervention to select CHWs and subsequent training was reported by community members as an enabler to their longevity and service. Study participants expressed confidence that CHWs, who were part of the community and selected by the community itself, would remain. They expressed that the skills and knowledge that CHWs had gained during training had continued to be shared with neighbors after the intervention ended.

*[The project] left when it had trained [CHWs]; even when [the project] ended, the CHWs continued working because they had experience through what they were taught. Because even if [the project] ended, the CHWs are in the village and they provide advice when they see a sick child or pregnant woman in the village. (CHW, FGD)*

**CHW Recognition and Incentives:** Participants explained that for CHW activities to be sustained, CHWs required community recognition. Where CHWs were not perceived as important or legitimate, or where understanding of their volunteerism was lacking, motivation and morale were negatively affected. During the intervention, some small non-financial incentives (i.e. T-shirts and soap) were provided. Some respondents especially community health workers felt these small, non-financial incentives maintained CHW motivation.

*Provision of incentives like t-shirts during the training motivated the CHWs... (Health Unit Management Committee Chairperson, IDI).*

**CHW Supervision:** Provision of ongoing support to CHWs by facility-based supervisors was seen as critical for maintaining CHWs and community-based programming; the health facility staff who supervise CHWs built trust and were seen to facilitate long-term CHW network success.

**CHW Refresher Training:** Interval training to review key topics and introduce new skills and knowledge is known locally as 'refresher training'. Refresher training was seen by participants as a promotor for CHW momentum and ongoing motivation. Upon the project ending, decreased opportunities for training was seen as a threat to sustainability.

*Refresher trainings were meant to refresh them [CHWs] and since the time they were trained...they have never got any other training. So, think of that. A person who is totally illiterate, does not know how to read and write, if you do not make a refresher training, he or she forgets everything. Even filling the register becomes a problem...they have totally forgotten because other organizations which come they do not train them, that's the most painful part of it. (Health Assistant, IDI).*

### 3) Community Attitudes and Beliefs

Respondents noted that to maximize and sustain CHW network health impacts community understanding of the CHW role and responsibility was critical. While some communities were early adopters, others communities increasingly engaged only when 'incentivized'; certain communities continued to hold deeply rooted community beliefs and attitudes that conflict with CHW messaging.

**Community Engagement:** Solid engagement by implementers of broad community at the start of the interventions was seen as key in supporting CHWs roles in the community post-intervention. Initial intervention sensitization about potential benefit and roles of CHWs increased uptake of health promotion messaging by the community members.

*Sometimes, a programme can be introduced in a certain community but there is no awareness and there is no mobilisation. People do not know that the programme is going to help them, people do not know their responsibility in that programme, the role they are supposed to play and the role implementers. For programmes [health related] to work, people should know their role, as the beneficiaries and the implementers know their role. So when people [community members] are missing that knowledge of course they cannot accept such a programme. (Health worker, IDI).*

Some community members seemed only interested in engaging with CHWs where they were provided with an incentive (known locally as 'facilitation').

*People in our community thought we were being paid salary not working as volunteers...it became a challenge; you mobilize ten people only two will come if you are lucky. They want to be "facilitated", when for us [we] have received nothing... (CHW, FGD)*

**Community Beliefs:** Persistent and traditional beliefs contradicting CHW health promotion messaging continue to challenge uptake of messaging and practice change encouraged by CHWs and others at the community level, limiting health impact for certain populations.

*Talking about family planning is a challenge. Community members say that when one uses family planning pills for a long time, they affect their performance [sexual performance]. That is what people say and we are not technical persons to give the right information. (Community Development Officer, IDI).*

*Among the community members, the problem we find, they have what we call preconceived opinions...they think when they go to health facilities they will find young midwives delivering them... they have trust in the old women, traditional birth attendants (Health Assistant, IDI).*

#### 4) Stakeholder Engagement

Integration of the CHW network and its supporting structures within existing government structures was described to be a key factor for sustainability, especially the extent of integration and alignment with government programs and priorities.

**Alignment with District Priorities and Programs:** District involvement in CHW programming was reported as an enabler of sustainability. Respondents described that long-term government support had been enhanced through active district leadership and involvement during the implementation phase. The prioritization of MNCH by the district had been accompanied by increased resources allocated to MNCH services, integration of CHW activities within district health programs, support for CHW supervisors, and improved supply chain management for medical supplies and drugs all which enabled continued CHW momentum.

*District health officers and other health leaders have helped in the way of integration of [MNCH] programs. For example, in case of other meetings they get involved in and they discuss about the same interventions like immunization. They are the ones who know and bring the challenges of health interventions to the technical planning committee meetings and others such that they are funded. So they lobby for these interventions. (Community Development Officer, IDI)*

**Local Government Involvement:** Participants linked sustainable CHW effectiveness over time with the level of local government leader support. A CHW describes his/her CHW team experiencing resistance when not well-supported by elected community leaders:

*... Instead of moving together as a team in what we were doing to develop our area, some [local leaders] thought we are paid salary. Others thought we are taking away their responsibilities, so instead of [the project] growing stronger, they started opposing us. You know local leaders have a lot of influence, if he/she does not support you, you may not do much on the ground. For example, instead of them advising fellow men to go with their wives for antenatal, they are not there, they are*

*not advising fellow men on having toilets at their homes, they are not there to advise men who refuse to build kitchens and renovate their homes. For us we advise; we are not law enforcers. (CHW, FGD).*

CHWs complained that since extra allowances were not available within the intervention for government officials, some were hesitant to participate in community-based health activities, jeopardizing impact:

*Sometimes when you go to the [elected official] ...he will say "your community programs with no allowances waste our time" ...some [local leaders] will not be interested and will not help at all. (CHW, FGD).*

## **Discussion**

Five years after a CHW intervention, key barriers and enhancers affect the longevity of a district-wide CHW implementation in rural Uganda. Health system effectiveness, CHW program factors, community attitudes and beliefs and stakeholder engagement are areas of importance as we look for ways to maintain momentum of an initially effective community-based project. This is the first study in the East Africa region to look closely at what project stakeholders and participants and beneficiaries say about CHW programming in the medium term. CHWs can have impact, but only while they last; as CHWs are scaled up in Uganda and globally, considering how to keep networks strong and active is critical.

Within each of the identified sustainability themes, study participants spoke loudly about what they experienced related to CHW networks in their setting. For each theme, examples of successes and failures were described, highlighting opportunities to maximize CHW networks through focusing on these areas, even in a low resource setting. From the start of implementation, certain barriers could be mitigated through local leader engagement, clarity of community expectations and clear articulation to communities of the volunteer nature of CHWs. The importance of 'service side' health system strengthening alongside community-based programming was emphasized; as demand increases, facility-based services and health systems must support increased care-seeking or CHWs can be demoralized. Specific cases where CHWs and communities felt there was little progress came from challenges of long-ingrained community and cultural beliefs—these are complex issues which need community solutions though CHWs may not be able to stimulate change in some cases on their own.

Conversely, projects should seek opportunities to promote those factors which enhance CHW sustainability, both during the life of a project and afterwards. Maximizing local leader support, promoting integration of CHWs and other community activities within existing health and political structures, considering non-financial ways that CHWs can be recognized and appropriated by communities and others outside of 'donor-supported projects'. Provision of refresher training is a huge and important motivator and sustainability factor, however, the short-term 'output-driven' format of most programs and grants does not easily provide opportunities for this. Creative solutions are needed.

Sustainability enablers identified in this study are consistent with the literature. Community ownership of the health interventions because this enables the local stakeholders to own the intervention having contributed to its implementation and the benefits involved (29, 30). Working within existing community

systems enables sustainability of health interventions since the foundation of the intervention depends on resources generated in the community (31, 32). The spirit of volunteerism from the community members and existing infrastructure are further factors contributing towards sustainability of health interventions in the community (33, 34). On the other hand, weak health systems, lack of financial leadership and failure to delegate responsibilities to the local people negatively impacts sustainability of health interventions (35, 36). Financial support and integration of health interventions in the local government budgets was reported as one factor enabling sustainability of health interventions. This is similar to what has been reported in previous research (37). In addition, training and empowerment of CHWs to carry on with the implemented interventions was mentioned as a major factor enabling sustainability of health interventions in the community. This was further supported by reports that refresher trainings of the community health workers further motivates them to continue their work in the community (34).

Published studies have found sustainability barriers for CHWs consistent with our study: Lack of incentives to motivate CHWs and lack of supervision have been reported in previous research as major barriers to sustainability of community health interventions (38, 39). Lack of incentives demotivated CHWs especially when they had to move long distances to access households without transport fare similar to what was reported in our study (38). While CHWs who are at the forefront of these interventions usually need supervision from facility health workers, facility health workers are not usually available at the health facilities. This is similar to what has been found in previous research (22, 39). It has been reported in some studies that facility health workers are not aware of what their supervisory role entails and this may hinder sustainability of health interventions due to the fact that the supervisory roles assigned may not be appropriate to what the CHWs need to function effectively (21). Another barrier to sustainability of health interventions in the community as cited in our study is lack of support from the community members. This has been attributed to lack of sensitization bearing in mind that community members have their own beliefs and customs that contradict modern medications. Similar findings were reported in a study in Zaire (40).

Community mobilization and sensitization at all stages of the implementation of the interventions plays a major role in the sustainability of the interventions. Whenever community members are not involved they oppose the interventions and they do not offer support to the CHWs contrary to the feeling of ownership whenever they are involved from the start (30, 41). Moreover whenever community members are involved from the start the sense of ownership propels them to support the interventions due to the fact they appreciate the benefits especially when they view themselves as having contributed towards disease prevention in the community (32). While failure to involve major stakeholders including local leaders and religious leaders was not a barrier to sustainability of health interventions it has been reported that involvement of these stakeholders during implementation fosters sustainability due to the fact these stakeholders get to influence the interventions so that they can be tailored to the needs of the community (32). Previous research noted that involvement of church leaders has been instrumental in sustainability of health interventions in the community (31).

## Conclusions

Sustainability of community health workers driven health interventions is a major issue in sub Saharan Africa despite the region being a host to the large burden of disease. Momentum of many community-based interventions declines once projects are complete. A number of factors have been identified to hinder sustainability of health interventions including failure to involve community members and other key stakeholders including local leaders and church leaders. In addition, effectiveness of health systems and human resources effectiveness are major factors in sustainability of health interventions. There is need to involve community members during implementation of health interventions in addition to ensuring that health systems are functioning effectively and ensuring availability of effective human resources to ensure sustainability of health interventions in the community.

## Abbreviations

CHWs

Community health workers

CHW

Community health work

MNCH

Maternal, newborn and child health

SSA

sub Saharan Africa

## Declarations

### Acknowledgements

We acknowledge our participants who took time to participate in focus group discussions and in-depth interviews.

### Authors' contributions

All authors contributed to the study and had input into the manuscript preparation. MT, EB, FO and JK participated in data collection. All authors analyzed the qualitative data and interpreted findings. SA prepared the first draft of the manuscript. All authors have reviewed and approved the final version of the manuscript.

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## Availability of data and materials

The datasets analyzed during the current study available from the corresponding author on reasonable request.

## Ethics approval and consent to participate

Institutional ethics approval was granted by Research Ethics Committee of Mbarara University of Science and Technology (#04/06-17), Uganda National Council for Science and Technology (#SS4386), and the University of Calgary Conjoint Ethics Board (study # REB17-1741). Informed consent was obtained from all study participants in their language of choice.

## Consent for publication

N/A

## Competing interests

The authors declare that they have no competing interests. All authors have contributed to this manuscript and have read and approve the final copy.

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