Strengthening Community Health Systems through CHWs and mHealth

New Learning & Next Steps from the Fall 2014 Global Health Practitioner Conference

December 2014

Recommended Citation:

Golding, Lenette. 2014. *Strengthening Community Health Systems through CHWs and mHealth*. Washington, DC: CORE Group

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INTRODUCTION

New Learning & Next Steps from the Fall 2014 Global Health Practitioner Conference

During CORE Group's Fall 2014 Global Health Practitioner Conference, participants explored the role of NGOs in strengthening health systems from a primary health care perspective that includes community systems, with a focus on supporting community health workers (CHWs). Key themes touched upon include:

- Including the community in health systems strengthening
- Strengthening community groups to support CHWs
- Harmonizing community-based human resources for sustainable health actions
- Improving CHW performance through mHealth
- Training and supporting CHWs through mobile learning

This paper is divided into three main sections. Section 1 sets the stage for including community-based systems in the building blocks of national health systems; Section 2 covers the role that community health workers play in strengthening community-based health systems; and Section 3 addresses how mobile technology can be used for capacity strengthening, support, and improved CHW performance. Each section briefly summarizes new learning, approaches, and issues surrounding the relationship between community engagement and national health systems as discussed at the Fall 2014 Global Health Practitioner Conference. References for further reading and possible next steps that the CORE Group Community Health Network could take are included within the three main sections of this paper. Presentations made at the Conference are available on the CORE Group website at www.coregroup.org/fall2014ghpc.

SECTION 1: INCLUDING COMMUNITY-BASED SYSTEMS WITHIN NATIONAL HEALTH SYSTEM FRAMEWORKS

There are numerous health system frameworks, but many do not fully address the roles that communities and households could productively play. As a result, institutions and organizations that focus mostly on community work may not have a way to communicate their roles in the overall health systems strengthening efforts. Some international non-governmental organizations (INGOs) are already addressing the issues on an individual basis. Although helpful, this remains a fragmented approach. The following section examines three questions: 1) Where do communities fit in the current health system frameworks from USAID and PAHO/WHO, and also in UNICEF's DIVA approach to strengthen district level delivery? 2) What are the gaps and issues to having a common conceptual/operational framework that shows the relationship between community-based and national health systems? 3) What efforts can INGOs take to galvanize the development of a common community engagement framework and promote it at the international level?

Where communities fit in the current health system frameworks from USAID and PAHO/WHO and in UNICEF's DIVA approach

Within the context of knowledge, experience, and recommendations from global practitioners, it is recognized that community engagement is key to strengthening interventions that improve health outcomes.[1] In particular, community-based interventions are recognized as playing an important role in improving maternal, newborn and child health. [2] Nevertheless, community-based systems have been largely ignored in health system frameworks.

In a recent blog post on the Health Systems Global Connect website[3], health system experts argue why community-based systems are important to include when thinking about the larger health system. First, community-based systems have the potential to make health services more inclusive and less discriminatory because they often work with marginalized groups. Second, community-based providers are "strategically placed to facilitate community participation and stimulate critical thinking; and third, they act as a catalyst to social action to address the social and cultural determinants of poor health." Additionally, in a recent article by Sheikh, Ranson, & Gilson (2014), the authors argue that "health systems are also human systems" and as such "community norms and behaviour drive health market forces and practices, influence how individuals and families access services, and can help hold systems accountable." [4]

> *"The components of stronger health systems, such as sustainable funding, equitable access to care, a strong and efficient health management system and successful behaviour change communication all depend upon a greater role for communities in the delivery of services, mobilisation of demand and increasing access to those most in need."*
>
> Helen Counihan, Malaria Consortium

It is possible to put the community into a health system framework as demonstrated in a CORE Group white paper[5] and again presented by Karen Cavanaugh from USAID during the fall 2014 Global Health Practitioner Conference. There are roles that communities can play for each of the six "building blocks" or core components of the health system frameworks promoted by the World Health Organization and USAID. For example, communities can take an active role in supporting community health workers and ensuring that health services and facilities are accountable to community needs and provide quality

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1 Rifkin, S. B. (2014). Examining the links between community participation and health outcomes: A review of the literature. *Health Policy and Planning*, *29*(suppl 2), ii98-ii106.

2 Perry, H., Freeman, P. (2009). *How effective is community-based primary health care in improving the health of children? Summary findings.* Community-Based Primary Health Care Working Group and APHA.

3 Accessed at http://www.healthsystemsglobal.org/GetInvolved/Blog/TabId/155/PostId/10/5-key-questions-on-close-to-community-programmes-as-part-of-a-broader-health-systems-approach.aspx on November 5, 2014.

4 Sheikh, K., Ranson, M. K., & Gilson, L. (2014). Explorations on people centredness in health systems. *Health Policy and Planning,* 29(suppl 2), ii1-ii5.

5 LeBan, K. 2011. How social capital in community systems strengthens health systems: People, structures, processes. Accessed at: http://www.coregroup.org/component/content/article/24-community-health-work/220-how-social-capital-in-community-systems-strengthens-health-systems-people-structures-processes on November 5, 2014.

care. Additionally, among other actions, communities can contribute labor, land, produce, cash and other resources to support locally appropriate health services, health agents, and disadvantaged populations.

Community-based systems will play an even bigger role as we move from an era of health system strengthening to an era of universal health coverage (UHC). Whereas USAID sees the role of community as one of enforcing accountability and transparency, PAHO and WHO are taking a human rights approach and basing UHC on three values: the right to health; equity; and solidarity. Accordingly, universal access to health and UHC will "mean that all people and communities can use the services they need, when they need them, with quality, throughout the life course, without financial hardship." As outlined in the new Lancet series on UHC in Latin America,[6] this goal will be achieved by four strategic lines that are the basis of UHC: 1) expanding equitable access to comprehensive, quality, people and community-centered health services (empowerment of people); 2) strengthening stewardship and governance (social participation and social dialogue, accountability); 3) increasing and improving financing, with equity and efficiency, and advancing toward the elimination of direct payment that becomes a barrier (solidarity – this is a new commitment); and 4) strengthening inter-sectoral action to address the social determinants of health (empowerment of communities). UHC will require that communities be viewed as active participants in the health system rather than just clients of clinical health services. Furthermore, UHC will require new approaches and ways of thinking about all the interconnected components as a whole rather than as discrete elements.

Like PAHO and WHO, UNICEF is interested in equity to health services. However, instead of a framework that provides a bird's eye view of the health system, UNICEF uses a flexible and outcome-based approach for programming and monitoring to enhance district performance specifically for maternal and child health outcomes. As described in detail in UNICEF's guidebook[7], this approach has four steps—Diagnose, Intervene, Verify and Adjust (D-I-V-A) to help understand inequities, and identify and respond to the health system and demand-side bottlenecks that arise at the district level. Each step builds on existing processes within the district planning cycle to improve health outcomes by being more responsive to the specific needs of marginalized groups. For instance, in Botswana, the district-based bottleneck analysis led to implementing an equity-focused plan to scale-up maternal and child survival interventions to directly address leading causes of death among at-risk groups with low effective utilization of PHC services. The impetus for this approach is UNICEF's equity-focused programming and monitoring work, which calls for national vulnerability assessments, adjustments of plans and programs, and enhanced monitoring within the most vulnerable settings and among the most vulnerable groups in order to accelerate progress towards the achievement of the Millennium Development Goals. Nevertheless, the DIVA approach will continue to be useful as the focus shifts to UHC by providing an analytical process that improves district-level management skills for human resources, finances, information, supply, and service organization.

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6 The Lancet, *Universal Health Coverage in Latin America*, Published on October, 16, 2014. Accessed at: http://www.thelancet.com/series/latin-america-UHC on November 5, 2015

7 UNICEF, MSH (2012). *The guidebook: Strengthening district management capacity for planning, implementation and monitoring for results with equity.*

Issues of a common conceptual/ operational framework integrates community-based and national health systems

Being that health systems are complex and dynamic, health system and health system strengthening frameworks have been developed to promote a common understanding among stakeholders. Frameworks can set realistic expectations and help prioritize investments across critical health system layers. Additionally, they can aid to identify where bottlenecks and problems exist, where and why investment is needed, what will happen as a result of efforts, and by what means change can be monitored. Nonetheless, the diversity of frameworks and the lack of common global consensus is confusion.

Some feel that it may be too complex to create just one health system framework that includes community-based systems given that community fits in many of the core components of existing health system frameworks. Secondly, given the fact that every community is different and community-based health systems are

> *"When community is everywhere, it is hard to put community anywhere."*
>
> Eric Sarriot, USAID, Maternal and Child Survival Program

highly contextual (as are the health problems and needs), a one size fits all framework may not work. Instead, it may be best to have several common agreed-upon frameworks based on their intended use and target audiences, emphasizing selected aspects or functions of the health system, and ignoring others.

Table 1 provides a sample of health system and health system strengthening frameworks that can be used for a range of purposes (i.e., help develop community health strategies, guide analysis of primary health care governance). While common themes across the various frameworks exist, each has a distinct purpose. A framework that outlines how community engagement can be used for health system strengthening does not currently exist.

Table 1. Examples of health system and health system strengthening frameworks

SOURCE	POTENTIAL APPLICATION
Winch, P. J., Leban, K., Casazza, L., Walker, L., & Pearcy, K. (2002). An implementation framework for household and community integrated management of childhood illness. *Health Policy and Planning*, *17*(4), 345-353.	Develop community health strategies
Sarriot, E. G., Winch, P. J., Ryan, L. J., Bowie, J., Kouletio, M., Swedberg, E., ... & Pacqué, M. C. (2004). A methodological approach and framework for sustainability assessment in NGO-implemented primary health care programs. *The International Journal of Health Planning and Management*, *19*(1), 23-41.	Map progress towards sustainable child health from the community level and upward
Community Systems Strengthening Framework. May 2010. *Geneva, Switzerland: The Global Fund to fight AIDS, Tuberculosis and Malaria.*	Support community engagement in improving health outcomes
Ergo, A., Eichler, R., Koblinsky, M., & Shah, N. (2011). Strengthening Health Systems to Improve Maternal, Neonatal and Child Health Outcomes: A Framework. *Washington, DC: US Agency for Development, Maternal and Child Health Integrated Program*.	Presents a structure (that includes community) to organize information and assess how various health systems strengthening (HSS) initiatives might operate within a health system to cause changes that result in improved MNCH
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*(suppl 2), ii29-ii39.	Guide analysis of primary health care governance in low- and middle-income countries
Mehl, G., & Labrique, A. (2014). Prioritizing integrated mHealth strategies for universal health coverage. *Science*, 345(6202), 1284-1287.	Help prioritize and select integrated mHealth strategies for achieving UHC
Lazarus, J.V., & France, T. (2014). *Proposed modified WHO health systems framework*. Accessed from http://www.healthsystemsglobal.org/GetInvolved/Blog/TabId/155/PostId/21/a-new-era-for-the-who-health-system-building-blocks.aspx on November 5, 2014.	Demonstrates possible way to integrate the influence of communication and patient engagement with the health system

Strengthening Community Health Systems through CHWs and mHealth

Efforts INGOs can take to galvanize the development of a common framework for community engagement within HSS

The role of civil society and community-based systems in health system strengthening requires more attention and better analysis. INGOs are positioned to respond given their long-term partnerships with communities, and their governments, that include appreciation for the nuances of local culture and the ever-changing political and social environments. Health-system strengthening is a long-term iterative process. INGOs can help in this process by acting as a facilitator, bringing local stakeholders together to take the lead in adapting evidence-based solutions, enhancing community capacities, and enabling community-based responses. INGOs can also play an important advocacy role and push for action with broad support across a wide spectrum of stakeholders while at the same time continue to demonstrate the effectiveness of innovative scalable community-based interventions.[8]

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8 Ergo, A., Eichler, R., Koblinsky, M., & Shah, N. (2011). Strengthening Health Systems to Improve Maternal, Neonatal and Child Health Outcomes: A Framework. *Washington, DC: US Agency for Development, Maternal and Child Health Integrated Program*.

SECTION 2: THE VITAL ROLE CHWS PLAY IN STRENGTHENING COMMUNITY-BASED HEALTH SYSTEMS

Community health workers (CHWs) have been called the "world's most promising health workforce resource"[9] in terms of enabling health systems in resource-constrained settings. Most often, CHWs are relied upon to deliver an assortment of health services directly to communities and link households with the formal health system. Recently, there has been a resurgence in global attention to CHWs, recognizing them as an integral part of the health workforce needed to achieve country health commitments. In part, this is due to health workforce shortages, and the call to shift tasks from higher-trained health workers to less highly trained health workers to maximize the efficient use of health workforce resources. Another driver is the commitment of governments to end preventable child and maternal deaths, a task that can only be achieved with the attention of equitable community access to health promotive, preventive and curative services.

What seems like a straightforward health promotion and service delivery strategy, of recruiting, training and supporting local people to supplement health professionals at the community level, is in fact quite complex. Among the many challenges for successful implementation of a CHW program include adequacy of the local health system, information systems, supply system logistics, management, supervision, and quality oversight. Additionally, CHW programs often struggle because of a lack of community engagement, or getting community members involved in decisions that affect them, including the planning, development, management, and evaluation of CHW programs. This section summarizes the role that CHWs play in improving health outcomes, as well as some promising methods for involving individuals and communities in CHW programs presented at the Fall 2014 Global Health Practitioner Conference.

What is a CHW anyway?

Currently there is no shared agreement on the definition of a CHW or their commonly shared tasks. While creating consensus is not the focus of this paper, it is important to at least point out current definitions that are shaping the global discussion. In very simplistic terms, there are two levels of CHWs, those that are full-time, often paid, with formal pre-service training, and those that are volunteer, part-time workers with limited pre-service training.[10] A broader, more comprehensive definition by the International Labour Organization is also being used as a guiding framework. This definition can be found in a new policy report by the Frontline Health Workers Coalition.[11] As a step towards enhancing the quality and availability of data for decision-making concerning CHWs, the report calls for not only an agreed-upon common definition, but a set of core tasks and competencies, the creation of guidelines for a minimum data set of information on CHWs, and the creation of national registries integrated into national human resources information systems to house this minimum data set.

KEY POINTS

- CHWs play an important role in improving the health of impoverished populations in low - and middle-income countries.
- Community participation enables CHW program success. Likewise, a strong CHW program can support the community engagement process.

POSSIBLE NEXT STEPS FOR CORE GROUP

- Create a tool to support the functionality of community groups that support CHWs
- Develop a framework for active community engagement

RECOMMENDED READING

- How effective are community health workers? An overview of currently evidence with recommendations for strengthening community health worker programs to accelerate progress in achieving the health-related Millennium Development Goals (bit.ly/13d1M74)
- Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers (bit.ly/11ei522)
- A commitment to community health workers: Improving data for decision making (bit.ly/1uVT1pm)
- From rights-based advocacy to maternal health outcomes (bit.ly/1IFwcz7)

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9 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.*

10 In H. Perry & L. Crigler (Eds.). *Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers.* Washington, DC: United States Agency for International Development.

11 *A commitment to community health workers: Improving data for decision making.* Accessed from http://frontlinehealthworkers.org/chwreport/ on November 12, 2014.

The role community groups can play in supporting CHWs

On any given day in countries around the world, CHWs work on a variety of tasks,[12] from providing health education, referral and follow-up to distributing medical supplies to prevent and treat endemic diseases such as malaria. Their work in providing community-based health services is vital. In turn, the level of support CHWs receive from the communities they work for can have an impact on their effectiveness. While the impact of community support of CHWs is an understudied component of maternal and child health programming, there are a number of assumptions one can make about community groups. First, there is a great diversity of community group types. Second, community groups have diverse objectives and; last, community group functionality is variable. Within any community there will be differences in social norms and practices, including those associated with discrimination, marginalization, exclusion, stigma, and unequal power structures. Likewise, each of these factors will impact how a community functions in terms of volunteerism, self-interest, and desire to help others in the community. Overall, fostering the development of interpersonal and institutional trust between communities and CHWs is essential.

Community groups can play a variety of supportive roles (i.e., defining roles and tasks of CHWs, selection, training, supervision, motivation and monitoring and evaluation) along a continuum of engagement (i.e., from passive to transformative).[13] Often the level of a groups' involvement and functionality depends on a variety of factors including norms, level of cohesion and self-efficacy.[14] Additionally, having explicit methods for involving individuals and communities, and clearly defined roles and responsibilities can go a long way in improving support to CHWs.[15] In an evidence review of effective means to empower communities to achieve behavioral and social changes to accelerate reductions in under-5 mortality and optimize early child development, it is also suggested that a community action cycle approach, which incorporates learning, action, and dialogue within the community, can positively impact health outcomes.[16]

An effective community- engagement strategy will also draw on a variety of community resources that can support CHWs to most effectively accomplish their health goals and tasks. In an example shared during the fall 2014 Global Health Practitioner Conference, Ram Shrestha from University Research Council explained how a pre-existing community system can be used to support voluntary CHWs and help ensure that the basic health needs of community members. In this type of management structure, the village committee is composed of members from different community groups (See Figure 1). Some of these members will be linked with the local political system and some to the health system. It is important, however, that the committee be composed of members with different backgrounds and power bases. Research has shown that when local management structures are composed of elites, they are less effective.[17] The committee meets monthly with the aim to identify households at risk (i.e. those with pregnant women and children under two years), mobilize the community for improved health, assist with communication between the local and district health system, and advocate for

12 International Labour Office. International standard classification of occupations (ISCO-08). Volume 1. Structure, group definitions, and correspondence tables. Geneva: ILO

13 LeBan, K., Perry, H., Crigler, L., & Colvin, C. (2014). Community Participation in large-scale community health worker programs. In H. Perry & L. Crigler (Eds.). *Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers.* Washington, DC: United States Agency for International Development.

14 Farnsworth, S. K., Böse, K., Fajobi, O., Souza, P. P., Peniston, A., Davidson, L. L., ... & Hodgins, S. (2014). Community engagement to enhance child survival and early development in low-and middle-income countries: An evidence review. *Journal of health communication*, *19*(sup1), 67-88.

15 LeBan, K., Perry, H., Crigler, L., & Colvin, C. (2014). Community Participation in large-scale community health worker programs. In H. Perry & L. Crigler (Eds.). *Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers.* Washington, DC: United States Agency for International Development.

16 Farnsworth, S. K., Böse, K., Fajobi, O., Souza, P. P., Peniston, A., Davidson, L. L., ... & Hodgins, S. (2014). Community engagement to enhance child survival and early development in low-and middle-income countries: An evidence review. *Journal of health communication*, *19*(sup1), 67-88.

17 Baez, C., & Barron, P. (2006). Community voice and role in district health systems in east and southern Africa: A literature review. *Regional Network for Equity in Health in East and Southern Africa: South Africa*.

necessary supplies and investments for the community health volunteers. This holistic community system has been shown to foster a level of support and trust between community members and volunteers in different contexts.

Nevertheless, in many contexts, community management structures are weak.[18] An assessment of existing issues may help resolve and promote participation in decision making and carrying out administrative tasks. With a goal of improving community group functionality, WV with CORE Group's Community Child Health Working Group is in the process of developing an assessment tool based on the CHW Program Functionality Matrix in the CHW AIM toolkit. This also draws upon the Community Management Structure Guidance in the CHW Reference Guide. Once finished, the adapted tool will be able to be used to review the functionality of community health groups against 15 practices. Each of the 15 practices will be subdivided into four levels of functionality to enable organizations to match their current status against a continuum of responses to guide their assessment. A draft in progress is available in Appendix A of this paper.

In a recent blog post (From rights-based to advocacy to maternal health outcomes), Georgia Taylor from Health Partners International, writes about why community engagement is an important part of developing respectful maternity care. She argues that it is important for both "women and health providers to have maternal health knowledge, the power to make decisions, and decisions that protect their rights. For example, a DFID-funded program in Northern Nigeria has shown that maternal and newborn mortality can be reduced by combining improvements in the health facility with direct volunteer-led community engagement. As part of a larger project, a Community Engagement program includes volunteers leading dialogue with the whole community to increase the level of knowledge of reproductive health, maternal dangers signs, nutrition and immunization among other maternal and child health issues; a volunteer-led emergency transport scheme (ETS); a blood donor group; an emergency savings scheme; a facility health committee; and young women's support groups, which promote experience sharing and learning. Overall, the Community Engagement program has transformed the overall relationship between the community and health providers and women are now reporting that they are treated well by health providers.
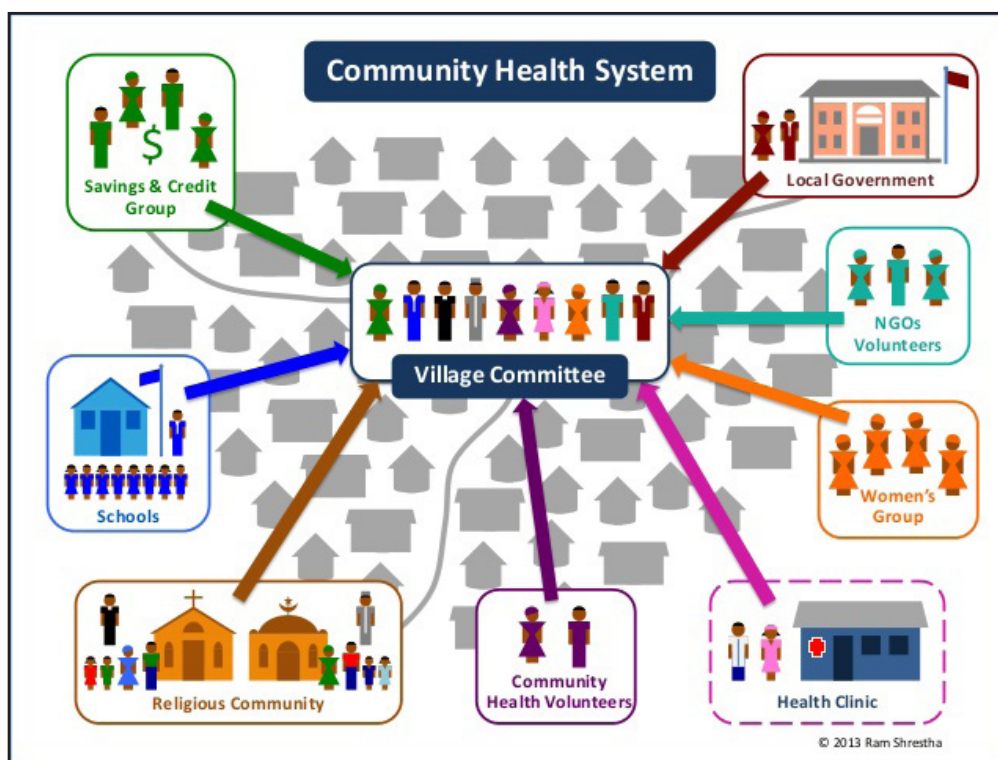

Figure 1.
Community Management Structure

(R. Shrestha)

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18 McCoy, D.C., Hall, J.A., Ridge, M. (2012). A systematic review of the literature for evidence on health facility committees in low- and middle-income countries. Health Policy and Planning; 27 (6), 449-466.

The role that INGOs can play in leveraging and harmonizing community-based human resources

INGOs have worked with CHWs over the years to help them play a significant role in health care delivery. As outlined in the report from the Frontline Health Workers Coalition[19], global level stakeholders can do a number of things to accelerate support for CHWs including implementing the CHW Harmonization Framework. Harmonization will advance effective and rational integration of CHWs into national health systems. Additionally, it will allow countries and their partners to optimize the role that CHWs play in scaling up primary health care. As the world moves from achieving the MDGs to UHC, CHWs will play a larger role in ensuring that all people have access to quality health care. There are also approaches that NGOs and implementing partners can take at the country level.[20] Below is a list of suggested actions by the Global Health Workforce Alliance.

In terms of policy and planning:

1. Coordinate and harmonize CHW programs with national HRH programs and strategies.

2. Ensure that any CHWS recruited, trained, and on-boarded fit within the purview of the common CHW definition established by the government or support them

3. Provide technical support in establishing standards for CHW cadres that are rooted in best and evidence-based practices

4. Follow national and district guidelines for salaries and incentives

In terms of support systems:

1. Contribute to planning and policy meetings and share experience and knowledge to support the implementation and coordination of CHW programs

2. Assist in the monitoring of CHW programs by providing necessary data and sharing experience and knowledge to support and improve CHW programs

In terms of monitoring and evaluation:

1. Submit scheduled reports containing all necessary indicators to Ministry of Health (per national guidelines)

2. Participate in global discussions; disseminate information; follow the recommendations of the research agenda proposal.

As seen in the next case study, presented by Kristen Cahill from Concern Worldwide, U.S., there are other innovative approaches that INGOs can take to maximize community resources.

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19 *A commitment to community health workers: Improving data for decision making.* Accessed from http://frontlinehealthworkers.org/chwreport/ on November 12, 2014.
20 Foster, A.A., Tulenko, K., & Broughton, E. (2013). *Community health workers and universal health coverage: Monitoring and accountability platform for national governments and global partners in developing, implementing, and managing CHW programs.* Geneva: Global Health Workforce Alliance.

Case Study: Innovative ways to expand community volunteers as links to the formal health system - Re-branding TBAs in Sierra Leone

Traditional Birth Attendants (TBAs) are very popular and influential in rural communities in Sierra Leone. This is partly due to socio-cultural reasons (the role is passed down to women who are part of a secret society) but also because of severe shortages of skilled health workers within the public health system including trained and literate CHWs. Nevertheless, TBAs in Sierra Leone have been isolated from the health system for over two decades in an effort to phase them out. In 2010, the Government announced that it was illegal for TBAs to assist with deliveries and many communities have established by-laws so that if a woman delivers at home, the TBA, the woman, and her husband are all fined. However, many TBAs continue to practice. The same year, the Government also announced the Free Health Care Initiative (FHCI) which abolished health care costs for pregnant and lactating women as well as children under-five years of age. As a direct result, many more women and children now come to health centers. Although, in principle, this is a positive scenario, there remain challenges since many facilities are ill equipped and unable to provide an adequate standard of care.

Largely through the efforts of Concern Worldwide and Catholic Relief Services there is a renewed interest in working with TBAs as potential important actors in bridging the human resource gap. The trend is to rebrand TBAs through task shifting. With Government endorsement, TBAs are now being trained in non-delivery community-based roles and serve as a bridge between community members and Primary Health Unit (PHU) staff.

Concern Worldwide recently conducted a pilot project with 200 TBAs. Working with the Government, the project adapted the national CHW training manual, converting the text-based guide into over 90 pictorial cards. Additionally, the project also made all the monitoring forms for the TBAs image-based. As part of the training, TBAs were given ID badges, T-shirts, and training certificates. Additionally, as a monetary incentive, each TBA was provided with a one-time, interest free loan to purchase a basket of health supplies to sell. Each basket is worth $30 and the TBA can make a net profit of $10 if she sells all the supplies. To date, there has been a 100 percent rate of payback on loans with TBAs selling out of products and purchasing additional items at monthly TBA meetings. Concern Worldwide hopes to publish findings on the project soon.

Photo credit: Kristen A. Cahill/ Concern Worldwide, U.S.

SECTION 3: USING MOBILE TECHNOLOGY FOR CAPACITY STRENGTHENING, SUPPORT, AND IMPROVED CHW PERFORMANCE

Community health workers (CHWs) have been shown to be an effective and powerful intervention for improving community health. Nonetheless, significant pressures on CHWs and supervisors in terms of time, the cost of travel, and time away from traditional work make CHW programs difficult to maintain. Training and supervision are often under-resourced, inconsistent, and difficult to provide, particularly in remote areas where health services are often overstretched and face-to face supervision is not always possible due to geographical constraints.

An increasing number of projects being implemented by CORE Group members are providing CHWs with mobile phones to help overcome geographical and other constraints, and provide innovative practice-based tools that help facilitate increased communication and support between CHWs and their supervisors and learning. Mobile health, or "mHealth" addresses the use of mobile and wireless technologies for providing health services and information. Community health can be supported by mHealth through referral and tracking, decision support for CHWs, and CHW supervision, among other uses. Mobile learning, or "mLearning" for short, provides CHWs a way to learn and get performance support via their mobile devices in an effective and efficient manner, even in remote areas. For instance, interactive voice response (IVR) is especially useful for illiterate or semi-literate CHWs and for CHWs who speak minority languages for which it can be difficult to find sufficient numbers of qualified face-to-face trainers. With IVR, CHWs can listen to recorded questions and then press the number of the answer s/he believes to be correct and then hear the recorded correct answer. The health worker can control how often s/he receives new questions, what time s/he receives questions, and can take a mLearning course over a period of time. The IVR course can also be repeated over time to serve as a reminder for CHWs after their initial training is complete. SMS text messages can also be used as a mLearning tool.

KEY POINTS

- Mobile technology presents promising opportunities to improve the range and quality of services provided by community health workers.

- Increasingly, there is a trend towards using mobile technology to train and support CHWs.

- Nevertheless, some NGOs have been slow to incorporate mobile technology into their programming while others have not only embraced the strategy, but have leveraged funding, built partnerships and are now adding to the knowledge base.

POSSIBLE NEXT STEPS FOR CORE GROUP

- Create learning lab where members can strengthen their capacity on implementing mHealth.

- Create common standards and indicators for mHealth and mLearning among CORE members.

- Add to the evidence base to help guide mHealh policy and program implementation.

RECOMMENDED READING

- Mobile phone tools for field-based health care workers in low-income countries (bit.ly/1sgnbaZ)

- mHealth innovations as health system strengthening tools: 12 common applications and visual framework (bit.ly/1wjR6Nu)

- Prioritizing integrated mHealth strategies for universal health coverage (bit.ly/1up4P5i)

- Improving community health worker performance through automated SMS (bit.ly/1sgnlPv)

- Community health workers and mobile technology: A systematic review of the literature (bit.ly/1vVcyd4)

- mHealth field guide for newborn health (bit.ly/1wgUzOe)

Case study on mLearning: Health Enablement and Learning Platform (HELP)

Countries seeking to expand health services to the community-level to ensure equity of access to care frequently turn to community health workers (CHW) as an essential expansion of the health team. However, in many contexts, there is no easy, scalable, or sustainable method of training CHWs. In particular, face-to-face trainings are costly and often training is longer than a week, making it prohibitive for CHWs to attend as most have full-time jobs and responsibilities at home. Moreover, attending trainings is especially challenging for pastoralists since they move around on a regular basis and are never fixed in one place near a training site.

To overcome these challenges, Amref Health Africa looked at whether they could reduce face-to-face training time and still retain the quality of the CHW's training using mLearning in Kenya. Before getting started, Amref tackled key questions such as, what type of phone to use, basic or smart; whether to develop a platform independently or build partnerships; what curriculum to use; and what the guiding principles of their mLearning initiative should be. At the start of the initiative, 97% of CHWs in Kenya had mobile phones, with about 70% of CHWs having a basic phone. Thus, Amref decided to leverage current technology (basic phones) in the hands of CHWs for scalability and sustainability reasons. Additionally, Amref established partnerships with Accenture, Safaricom/Vodafone, Mezzanine, and the Kenyan Ministry of Health (MOH). With Amref taking the lead, they developed the Health Enablement and Learning Platform (HELP).

The HELP initiative aims to enhance learning, productivity, motivation, and sustainability of CHWs to improve community health outcomes. Each partner plays a distinct role for the initiative. For instance, Amref is in charge of content development, design and delivery work, while Accenture provides pedagogy and learning methodology. Safaricom is the mobile service provider, and the curriculum is provided by the Government of Kenya. Among HELP's core tenets and guiding principles is that mLearning be available and free for all CHWs and aligned with the Ministry of Health's standardized curriculum. It should be noted that the Government of Kenya has had many organizations pitch mobile technology solutions to health issues to them; therefore, Amref/Accenture had to demonstrate how their approach stood out and led to clear learning outcomes. They also had to convince the MOH to let them adapt their CHW trainings for use with mobile technology.

Learning Chain = Engagement ➡ Knowledge Sharing ➡ Application ➡ Re-enforcement ➡ Recognition

The HELP approach to mLearning is founded on adult learning principles. HELP employs a learning manager that oversees a learning chain. All of HELP's mLearning lessons are comprised of SMS text messages that introduce the training. SMS texts are followed by an audio module that uses IVR to deliver a case study and role plays to highlight community problems and humanize the topic of study, in this case topics around maternal and child health. The participants can choose the language they want the modules to be delivered in (e.g., English or Swahili). HELP has also recently begun to use gamification to help the CHWs test their knowledge in a fun and engaging way. Participants answer multiple choice questions via SMS text message and get points for correct answers. As extra motivation there are leader boards so that participants can see who is winning. Moreover, as part of the mLearning platform, the organizers have formed "community units" of approximately 50 CHWs working in the same district who engage in group chats to discuss issues they face in their community. The supervisor/ moderator of the chats has expertise in health and messaging and oversees the chats to ensure that appropriate information is being disseminated. These group chats are also used to identify future training topics. The challenges discussed often vary from week to week and season to season. Additionally, the group chat feature has been used by CHWs to plan community activities. As part of the initiative HELP also developed decision-making trees to assist CHWs choose what action to take when they come across certain health or nutrition issues in a household. The trees provide diagnostic information and makes treatment suggestions. The decision trees are purposively simple with only 4-5 levels in depth.

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Phase 1 Research: How to best build CHW capacity

For Phase 1, the HELP initiative researched whether it is possible to 1) enhance training; 2) decrease the cost of training and; 3) increase the pace of CHW training by integrating mLearning with face-to-face (F2F) training. According to the MOH, each CHW in Kenya must be trained in six "basic" modules. This training is typically conducted F2F and takes ten days. There are also seven technical modules that CHWs can complete after the six basic modules. HELP piloted their mLearning solution in Kenya using three models in three sites, an urban, rural, and nomadic site. The three models tested were:

1. Baseline group: The MOH curriculum (6 basic modules) delivered F2F for five days (modified for this study).
2. mLearning Complementary group: The MOH curriculum (6 basic modules) delivered F2F over five days plus mLearning modules covering an additional nine topics that took place over 7 - 9 weeks.
3. mLearning Supplementary group: Four of the six basic modules from the MOH curriculum delivered F2F over five days plus mLearning modules covering an additional nine topics that took place over 7-9 weeks.

HELP compared how each training worked for each of the three geographical areas using a pre-test/post-test for F2F learning, and a post-test only for mLearning. Findings from Phase 1 indicate that mobile technology can be an effective platform for supplementing a training experience for CHWs. Overall there was a high rate of satisfaction among CHWs of the mLearning platform with average topic scores rising from 50% to 79%. Participants commented that they really enjoyed the story format of the case studies and role plays more than other types of lessons. Moreover, the platform allowed face-to-face training to be reduced from 11 days to five days with the cost of purely mobile learning being $26 compared to $500 per participant for the 11 day F2F training.

The mLearning approach made the most difference in nomadic communities where CHWs never had this type of communication capability before. In the first week alone nomadic participants exchanged approximately 7000 messages. The least active participants were found in the urban area. It is hypothesized that because of close proximity, urban CHWs can communicate in person and therefore are not so dependent on the phone to offer or request support.

Among many of lessons learned with this initiative is the importance of having a clear value proposition for the Government and donors to demonstrate a more efficient and effective approach to training and the economic impact that mlearning will have on health. Moreover, like other community health and development programming, you should seek community participation and buy-in during the design phase as well as during implementation. Lastly, it is important to have a 'partner broker' to keep partnerships together. To ensure sustainability, Amref worked closely with their partners to design the initiative and did not shy from difficult issues.

Those involved with HELP initiative should be commended for their pioneering mLearning work. The initiative provides evidence of the benefit of community and Government participation in designing a mLearning solution and lessons on what is needed to achieve sustainability. Looking ahead, the second phase of the initiative will expand the scalability (i.e., from 318 CHWs to + 2,400 CHWs), the learning content, and conduct research on how the mobile platform can be used to promote ongoing mentoring.

Building a case for the use of mobile technology to measure and improve CHW performance

Literature suggests that the use of mobile technology can potentially enhance the capacity of CHWs to take on new and challenging tasks, provide health care services in the field with fewer errors and higher adherence to protocols, and aid in the collection of complete, timely, and accurate health data for field-based research. Nevertheless, as Neal Lesh, Chief Strategy Officer for Dimagi has pointed out, successful mHealth requires more than technology stating, "Technology just amplifies human intention." Technology is not a substitute for organizational change and capacity, it will only help where a system is in place with human beings talking to one another.

It is hypothesized that a mHealth data cycle that includes a two way flow, will improve service delivery, supervision, and data because better data feeds data driven management, which in turn feeds back to the CHW as supportive supervision. Nevertheless, as demonstrated in the study by De Renzi et al.,[21] there is a decrease in performance without a complete circuit including feedback loops. For instance, in a study in Tanzania, it was shown that collecting real-time structured data at the household level creates the opportunity to

Figure 2. mHealth Data Cycle (N. Lesh)
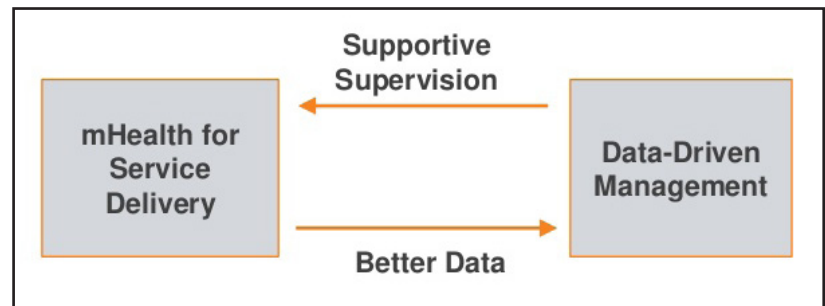
support automated real-time supervision to improve the timeliness of CHW visits. For the purpose of this study CHWs were given mobile phones to support their work. The CHWs were required to register and track clients and to log every visit they made using the mobile phone. This ensured that structured data were collected and sent in real time. An escalating reminder system would send CHWs SMS reminders about routine visits they were supposed to make. If the CHW missed a routine visit, an escalating reminder system would send them another SMS message prompting them that they needed to make the visit. If more time went by, then the CHWs supervisor would be notified stating that a CHW's visit was several days overdue. The study found that the reminders resulted in an 86% reduction in the average number of days a CHW's clients were overdue (9.7 to 1.4 days), with only a small number of cases ever escalating to the supervisor. However, when the step of escalating to the supervisor was removed, CHW performance significantly decreased.

Case study on using mobile technology to measure and improve CHW performance

With support from USAID and Dimagi, Pathfinder launched mHMtaani or "Mobile health for our communities" under the APHIAplus Nairobi-Coast project. mHMtanni aims to promote healthier communities by using mobile technology to monitor and track the health of pregnant mothers, as well as orphans and vulnerable children (OVC) in Kenya. Since its inception, over 260 community health workers are using mhealth technology via CommCare for decision support and case management and enabling them to monitor key maternal and child health indicators using the Ministry of Health Indicator Reporting form. Pathfinder has since leveraged their initial grants from USAID and Dimagi and in 2013 was awarded a grant from Visa and NetHope. With this funding, the project is launching a new performance-based funding scheme that will utilize data collected by community health workers using mobile technology (CommCare) to improve the coverage and consistency of their services. Eventually the project hopes to create a comprehensive community level care application to promote integrated community service delivery (e.g., family planning, HIV, WASH) built off the Kenya Essential Package.

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21 DeRenzi, B., Findlater, L., Payne, J., Birnbaum, B., Mangilima, J., Parikh, T., ... & Lesh, N. (2012, March). Improving community health worker performance through automated SMS. In *Proceedings of the Fifth International Conference on Information and Communication Technologies and Development* (pp. 25-34). ACM.

It is clear that using mobile phones to increase CHW performance is a productive theme. Mobile technology provides opportunities to increase efficiency, cost effectiveness, equity, and quality, partially due to the potential integration of previously siloed activities (e.g. supportive supervision, data collection, pay for performance, referrals, supply chain management, and more). As mHealth moves from an era of experimentation—dominated by targeted vertical solutions—toward cross-sectoral health systems that integrate numerous mHealth strategies it will be important to research and document the efficacy of those strategies. However, as noted during the fall 2014 CORE Group Global Practitioner Conference, a significant proportion of CORE Group member organizations are still not incorporating mobile technology into their programming.

Figure 3. Barriers to mHealth implementation, globally
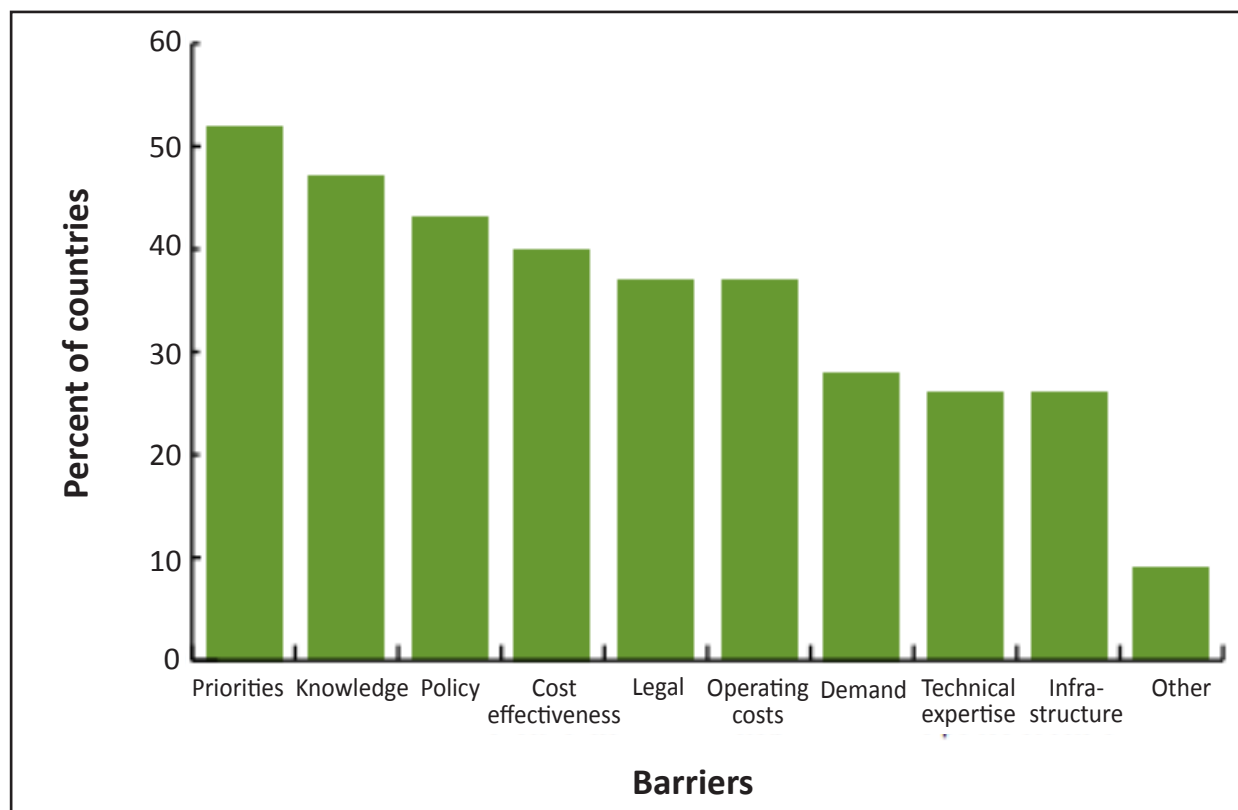
Source: WHO (2011). mHealth: new horizons for health through mobile technologies: second global survey on eHealth

In 2011 the World Health Organization published a report[22] outlining barriers to mHealth implementation. Among the top six barriers was a lack of knowledge and information, such as assessing effectiveness and cost-effectiveness of mHealth applications and conflicting health system priorities. Three years later during a session at the fall 2014 Global Health Practitioner Conference, CORE Group members listed similar challenges. Nevertheless, it was noted by a few members during the session the real issue may be that some practitioners do not feel self-efficacious about getting started. Accordingly, a more strategic approach is needed to bring INGOs up to speed.

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22 Kay, M. (2011). mHealth: New horizons for health through mobile technologies.*World Health Organization*.

Where is your organization in terms of integrating mobile technology into health programming?

As demonstrated by the Amref and Pathfinder case studies, it is possible to overcome obstacles in using mobile technology to strengthen CHW capacity, provide support, and improve CHW performance. There are many resources inside and outside of the CORE Group that can help organizations get started integrating mobile technology into their programming. For instance, Dimagi has a wealth of resources and has recently created a Maturity Model Tool that can be used to guide and measure your organization's change of use of mobile technologies over time. Additionally, mhealthknowledge.org has a starter guide, an elearning platform, and an evidence database.

Figure 4. Dimagi's Maturity Model

	Stage 1 - Demonstration			Stage 5 - Sustain and Improve
Program Design	New content, small number of use cases			Multiple use cases supported by the technology platform
Data Driven Management	Data collected but not used to improve workforce			Increasing levels of automation for data-driven management. Data used to improve program design.
Technical Support	Limited technical capacity among program staff	→		Technical resources fully capable of managing program independent of external support
Training and Implementation	Training and implementation policies not yet modified for mHealth			Training and implementation practices institutionalized and improvements rolled out iteratively
Scale	Designing and demonstrating with small number of users			Fully deployed to target userbase
Sustainability	Focus within single organization with single source of funding			Core solution in national strategy receiving core programmatic funding

In closing, as mobile technology becomes cheaper, more powerful, and more common in low-income regions, there will be even more opportunity for data collection, training and access to reference material, communication between health workers, decision support, supervision, and promoting healthy behaviors in the population. However, to unlock the true potential of mHealth and speed progress, INGOs not only need to do a better job of integrating mHelath innovations into health programming, but also conduct rigorous evaluations and publish the results. The vital work of INGOs can help sustain growth and mainstream mHealth solutions resulting in more effective design and implementation overall. Moreover, investing in mobile technology will help governments and their partners to maximize CHWs contributions to expand access to quality health care to all people.

CONCLUSION

This paper explores the three overarching themes of the fall 2014 Global Health Practitioner Conference: the important role that community-based health systems, CHWs, and mobile technology play in strengthening health systems and improving health outcomes. New learning, approaches, and issues are presented. The accumulating evidence suggests that community-based health systems can be strengthened through CHWs and mHealth. Nevertheless, in order to build and strengthen effective and efficient health systems, investments both in terms of effort and resources are needed.

For instance, including community-based health systems within national health system frameworks is logical, in particular since health workers at the community level are especially positioned to address the social and cultural determinants of poor health. However, community-based health systems are still poorly represented in health system and health system strengthening frameworks. This is due in part to the difficulty of linking components together rather than treating them as discrete independent elements and also because every community is different. However, one can argue that without a comprehensive and common understanding of the role that community-based health systems play, the health system may be overly narrow and limit collective learning, innovation, and improvement. Moving forward, the global community should come up with a set of agreed-upon principles and frameworks that integrate community-based systems with national health systems for policy, practice, and evaluation.

Additionally, while the accumulating evidence suggests that community health systems can be strengthened through CHWs, and in turn CHW programs can be bolstered by community support, more high-quality research is needed on how CHWs and communities relate to each other and how this relationship can be strengthened. Both paid CHWs that work full-time and have lengthy, formal pre-service training and those that are volunteer, part-time workers, have been a frequently used strategy to meet the health needs of populations and achieve the goals of primary health care. Now with the emphasis being placed on universal health coverage, INGOs and ministries of health will particularly need to leverage the human resources that already exist in communities.

Lastly, mobile technology offers an approach to better support and ensure the quality of CHWs and community-based health approaches; nevertheless, INGOs have been slow to implement mHealth solutions and provide evidence demonstrating their usability, functionality, reliability, and impact under real-world conditions. Thus, it is important that INGOs continue to strengthen their capacity around mHealth in order to improve unrestricted access to, and full use of, affordable quality services such as those that CHWs have the potential to provide.

APPENDIX A

Adapted CHW Assessment and Improvement Matrix (AIM): Community Management Structure (CMS) Contribution to CHW Program Functionality

Modified CHW-AIM Tool developed by WVI with input from Conference participants

	CHW-AIM Component Definition	3= highly functional (best practice)	CMS contribution
1	**Recruitment** How and from where a community health worker (CHW) is identified, selected, and assigned to a community, including selection criteria	CHW is recruited from community with community participation, or if due to special circumstance the CHW is recruited from outside the community, the community participates in and agrees with the process and is consulted on final selection. All selection criteria – literacy, gender, marital status, local residence – are met when possible	• Mobilize community participation in selection of new CHWs • Mobilize community to review and contribute to recruitment critera • Mapping to inform recruitment process
2	**CHW Role** Alignment, design and clarity of role from community, CHW, and health system perspectives. A role is a general description of how the "job" contributes to the organization; expectations define actions and behaviors necessary for the CHW to be successful; tasks are measurable activities that the CHW performs when providing services	CHW role is clearly defined and documented; organization, health system, community, and CHW design the role/expectations and tasks and policies that support the CHW's role. Specific expectations (e.g. workload, client load, time per patient, maximum distance and role of community) and tasks (weighing children for nutrition guidance, providing food supplements for HBC clients) are clear among CHW organization, health system, and community and services/commodities not offered by CHWs are accessible at referral sites. Process for updating and discussing role/expectations and tasks is in place for CHW and community	• Understand CHW role • Ensure community understands CHW role • CMS's role vis-à-vis CHWs outlined in written agreement • Ensure community aware of processes for grievances • When CMS/community becomes aware of CHW infractions, should report to CHW supervisor as first point of address
3	**Initial Training** Training provided to CHW to prepare for role in service delivery and ensure he/she has the necessary skills to provide safe and effective care	Initial training based on defined expectations for CHWs is provided to all CHWs within six months of recruitment. Content of training includes: core CHW topics, appropriate technical content, documentation and gender sensitivity. Training is consistent with national or facility guidelines for community care, and government health service is involved in training. Some on the job training is conducted in the community with community participation, e.g. as role players, feedback providers	• CMS aware of all trainings CHWs receive • Facilitating community feedback/ engagement on training curricula – priority topics, relevance, etc. • Orientation on training • CMS members visit training events – make visible connections, reinfoorce value • Some mebers are CHWs themselves – receive full training
4	**Ongoing Training** Training to update CHW on new skills, reinforce initial training, and ensure he/she is practicing skills learned	Ongoing training is provided at least every 6 months to update CHW on new skills, reinforce initial training, and ensure he/she is practicing skills learned Training is tracked and opportunities are offered in a consistent and fair manner to all CHWs Government health system or health facility is involved in training with health workers participating in training and/ or conducting training at the health center	• Mobilize communities to support CHW households so they can attend training (childcare, crops, etc) • Tracking trainings, attendance, equity in training opportunities
5	**Equipment and Supplies (including job aids)** Requisite equipment and supplies are available when needed to deliver the expected services	All necessary supplies, including job aids, are available with no substantial stockout periods. Organization and/or health facility takes account of CHW needs when ordering their supplies Supplies are checked and updated regularly to verify expiration dates, quality, and inventory	• May play a role in monitoring CHW stock control forms • Alert supervisor of any suspected CHW misuse of stock

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	CHW-AIM Component Definition	3= highly funtional (best practice)	CMS contribution
6	**Supervision** Consistent support for coaching, problem solving, skill development, and data review	Regular supervision visit every 1-3 months that includes reviewing reports and monitoring data collected. Supervisors are trained in supportive supervision, have the technical skills to do service delivery observations, and have basic supervision tools (checklists) to aid them. Data is used for problem solving and coaching during supervision meetings Supervisor visits community, makes home visits with CHW, and provides skill coaching to CHW	• CMS should develop a support relationship vis-à-vis CHWs, meeting periodically to discuss concerns and address issues as appropriate • Community/CMS interact with Supervisor during visits to provide feedback and solve problems • Supervision of clinical skills • Peer supervision • Lead CHW help with supervision
7	**Individual Performance Evaluation** Evaluation to fairly assess work during a set period of time	At least once a year an evaluation that includes individual performance including an assessment of service delivery based on documented supervisory feedback and an evaluation of coverage or monitoring data (national/program evaluation) Community is asked to provide feedback on CHW performance There are clear rewards for good performance, and the community plays a role in providing rewards	• Provides feedback on CHW performance • Solicits input from community to provide feedback on CHW performance • 360 degree performance evaluation – CHW also evaluates the community
8	**Incentives** Financial (salary, bonuses, transportation, money for meals, income from sale of products) Non-financial (training, certification, advancement opportunities, formal recognition, uniforms, medicines, bicycles) Community incentives (food, labor, recognition)	Incentives are balanced, with both financial and non-financial incentives provided, and are in line with expectations placed on CHW, e.g. , number and duration of visits to clients, workload, and services provided Incentives are partially based on performance relevant to expectations and include advancement opportunities and/or certification Community offers gifts or rewards	• Mobilise community to ensure CHWs receive locally-appropriate recognition for good performance
9	**Community Involvement** Role that community plays in supporting (supervising, offering incentives, providing feedback) to CHW	Community plays an active role in all support areas for CHW such as developing role, providing feedback, solving problems, providing incentives and helps to establish CHW as a leader in community CHW is widely recognized and appreciated for providing service to community Community leader(s) has ongoing dialogue with CHW regarding health issues using data gathered by the CHW Community interacts with supervisor during visits to provide feedback and solve problems	• Encompasses all of these points
10	**Referral System** The process for: determining when referral is needed, logistics planning for transport/payment to a health care facility when required, and how a referral is tracked and documented	CHW knows when to refer clients (danger signs, additional treatment needed, etc.) CHW and community know where referral facility is, usually have means for transport and have a functional logistics plan for emergencies (transport, funds) Client is referred with a standardized form and information flows back to CHW with a returned referral form	• Understands and supports the referral system • Establish community support for referrals e.g. emergency transport fund or identifying alternative transport
11	**Opportunity for Advancement** The possibility of growth and advancement for CHWs, including certification, increased responsibilities, path to formal sector or change in role	Advancement is offered to CHWs who perform well and who express an interest in advancement if the opportunity exists Training opportunities are offered to CHWs to learn new skills to advance their roles and CHWs are aware of them Advancement is intended to reward good performance or achievement and is based on a fair evaluation	• Recommending CHWs to health facility • Health committee to create new position or provide additional training for CHWs. Could be scholarship, literacy training

	CHW-AIM Component Definition	3= highly functional (best practice)	CMS contribution
12	**Documentation, Information Management** How CHWs document visits, how data flows to the health system and back to the community, and how it is used for service improvement	CHWs document their visits consistently Supervisors monitor quality of documents and provide help when needed CHWs/communities work with supervisor to use data in problem solving at the community level	• Understand the reporting forms that CHWs use • Obtain aggregated data to present results in community meetings • Carry out spot checks in community to ensure CHWs are doing the work claimed on reporting forms • Agree with the above, plus: identify barriers to data collection and use and help solve issues
13	**Linkages to Health System** How the CHWs and communities are linked to the larger health system Health system is made up of government, regions, districts, municipalities, and individual health facilities that provide resources, finances, and management to deliver health services to the population	Health system has comprehensive support mechanisms for all fundamental aspects of CHW program Training: health system provides initial and continuing training and on-site coaching Supervision: guidelines are clear; assigned supervisors visit CHW for performance review, coaching, and problem solving and document results Referral: health system guidelines include referral, counter-referral and information is used to improve system Equipment/supplies: consistently supplied, tracked and resupplied to CHWs by health system Incentives: monetary or non-monetary rewards from health system based on performance Advancement: provides consistent opportunities through certification, job path, etc. Use of data: CHW monitoring data are reviewed, analyzed, and included in health facility/system reporting and national health monitoring information system	• Accountability mechanism – ensure CHW is active, performing well, and collecting accurate data • Recognize CHW for performance • Advocate for timely CHW supplies
14	**Program Performance Evaluation** General program evaluation of performance against targets, overall program objectives, and indicators carried out on a regular basis	Yearly evaluation conducted of CHW activities (may be sample) that assesses CHW achievements in relations to program indicators and targets The assessment includes an evaluation of the quality as well as the quantity of service delivery provided by CHWs, and the community is asked to provide feedback based on data received from CHWs Feedback is provided to CHWs on how they are performing in relation to program indicators and targets and against service delivery standards CHW program is realizing 75% or more of its targets (up to the end of the most recent quarter)	
15	**Country Ownership** The extent to which the ministry of health has: Integrated the CHW cadre in health system planning (e.g. policies in place); Budgeted for local/district/national financial support; and provided logistical support (e.g. supervision, supplies) to sustain CHW programs at the district, regional and/or national levels	CHWs are recognized as part of the formal health system (policies are in place that define their roles, tasks, relationship to the health system) Adequate local/district budgets exist and are generally fully funded Supervision is provided by local/district/ central health offices; supplies for CHWs are specifically allotted and generally available	

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