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Community and Formal Health System Support for Enhanced Community Health Worker Performance

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Final Report of Evidence Review Team 1

Which Community Support Activities Improve the Performance of Community Health Workers?

A Review of the Evidence and of Expert Opinion with Recommendations for Policy, Practice and Research

Fall 2012

EVIDENCE SYNTHESIS PAPER

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[1] Henry Perry, John Townsend, Laura Altobelli and Peter Ngatia reviewed the comments from the Evidence Summit meeting 31 May-1 June 2012 and made final changes to the earlier version of this document that was presented at that time.

GLOSSARY

AIDS	Acquired immunodeficiency syndrome
AMREF	African Medical and Research Foundation
BCC	Behavior change communication
BRAC	Building Resources Across Communities (formerly Bangladesh Rural Advancement Committee)
CBO	Community-based organization
CBPHC	Community-based primary health care
CCM	Community case management
CDI	Community-directed intervention
CHW	Community health worker
CORP	Community's Own Resource Person (AMREF CHW)
CRHP	Comprehensive Rural Health Project (Jamkhed, India)
ERT	Evidence Review Team
FCHV	Female Community Health Volunteer (Nepal CHWs)
HIV	Human immunodeficiency virus
iCCM	Integrated community case management
NGO	Non-government organization
ORT	Oral rehydration therapy
SS	Shasthya Shebika (BRAC CHW in Bangladesh)
TB	Tuberculosis
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing (for HIV)
VDC	Village Development Committee (in Nepal)
VHT	Village health team
VO	Voluntary Organization (BRAC village development organization)
WHO	World Health Organization

EXECUTIVE SUMMARY

On May 31 and June 1, 2012, the U. S. Government convened an Evidence Summit to identify what is currently known about the contributions that communities and formal health systems can make to the performance of community health workers (CHWs) in low-income countries. In preparation for this Summit, Evidence Review Team 1 was assembled to address the following question:

"Which community support activities improve the performance of CHWs?"

This report is the Team's answer to that question, based on the limited evidence that could be identified from the available literature – both from peer-reviewed literature as well as documents available on the internet and elsewhere (the so-called grey literature). In addition, the expert opinion arising from within the Team, which is considerable, as well as from others with whom the Team is in contact, was utilized in developing this report.

The Team identified four domains of community support: (1) provision of access to those who can serve as effective CHWs and access of CHWs to community members, (2) creation of demand for CHW services, (3) provision of support for CHWs, and (4) facilitation of trust between the community and the CHW. While the health system plays an important role in enhancing CHW effectiveness through training, supervision, provision of needed equipment, supplies and medicines, and facilitation of referral of patients that CHWs identify as needing higher-level care, communities also play an important role. Community engagement in the design of the CHW role, in the selection of persons suitable to serve as CHWs, in the monitoring of CHW activities through community structures such as Village Health Committees, in the provision of payment and other incentives for CHWs, an in the provision of respect for the CHW because of the services she provides to the community. Trust is a key aspect of the community-CHW relationship that ultimately determines the effectiveness of the CHW in promotion of behavior change and health improvement in the community.

The literature on the role of the community in fostering increased access does not offer strong evidence about what works, but rather provides a set of plausible approaches to engage communities in support of CHWs and their services. What might work in one cultural context may not be the most effective or efficient strategy in another area, but some of the principles may apply to both areas. The operationalization of these principles may differ by the type of service provided (e.g., vaccination versus family planning), or by the nature of the community served (e.g., highly dispersed communities in mountain terrain versus densely populated urban slum communities). Nevertheless, there is a considerable pool of lessons learned from the literature on CHWs that might be appropriate for simple experiments or evaluations.

Direct community support for CHWs, defined as a combination of various social and material (in-kind or financial) mechanisms, in-kind support or financial support, is described in a number of reviews and studies and is seen as an important contributor to CHW program success. Many of these studies examine the relationship between these types of support and retention of CHWs. However, retention alone is a crude proxy for performance. The literature is mostly descriptive and lacks studies with strong designs for examining the relative importance of these types of support to maintaining or improving the performance of CHWs. There seems to be evidence that CHW programs established on the basis of providing motivation through in-kind or monetary support will degrade in performance if this support is not consistently maintained. However it is not clear by how much performance could be enhanced through increasing the level of this type of support. Social types of support appear to be quite important for retention of CHWs, but it is not evident from the literature how this support is related to high performance. The relative importance of social support compared to community in-kind or monetary support from communities or from the formal health system also remains to be studied.

Community involvement in the selection and long-term support of CHWs can be integral to facilitating trust and understanding of CHW services. There is, however, little evidence of its impact on the coverage, quality or outcomes of services provided by CHWs.

Thus, all four elements (access, demand, support and trust) are closely related and undoubtedly contribute in multiple ways to CHW success in the provision of services, but there is very limited evidence from the literature and programmatic experiences that demonstrate their impact on CHW performance. There is a clear need for further research and policy analysis about community influences on CHW performance.

How to apply the findings of this review to programming at large scale is an important issue. Launching national programs requires strong governmental support in terms of policies, funding, and technical direction, in order to achieve scale up with fidelity in design. At the same time, flexibility, initiative and continuity at the local level are essential. The Nepal FCHV Program (described further in the Appendix) is a good example of how this was achieved. We need to learn more about how multiple sectors and multiple levels of government (particularly local governments and the local private sector) can support CHW programs.

The Team recommends the community participation be obtained in planning, supporting, and monitoring CHW programs. Community ownership of CHW programs should be fostered. Given the reality of lack of access to basic medical care that many populations face, the Team recommends that CHWs be provided, if possible, with training to provide basic and limited curative service and the medicines and other supplies required for this. Doing so will provide greater legitimacy for the CHW, stronger buy-in from the community, and greater credibility for the preventive and health promotion activities of the CHW.

There is a great need for expanded funding that is directed specifically to investigate how communities influence CHW performance since very few studies have addressed this question so far. Determinants of community satisfaction with, acceptability of, and demand for CHW services need further research as do the potential role that CHW associations, community monitoring activities, and local governance structures can play in strengthening CHW performance.

The report contains an Appendix with information about the methodology used to address this question, methodological issues that had to be addressed, selected case studies of CHW programs that have elements of relevance to the question being addressed, and finally an annotated bibliography of some of the important references identified by the Team.

INTRODUCTION

Since the 1978 Declaration of Alma-Ata, community participation in health care has been an accepted principle for global public health practice. Community engagement has been prioritized not only as a critical complement to facility-based care, but also as a necessary ingredient for broader social change, empowerment, and local control of economic and environmental factors that determine health outcomes. This early understanding of community engagement has evolved into a more pragmatic push for community health workers (CHWs) as a partial solution to extending the reach of health systems, aiming to expand coverage of key interventions and to fill the unmet demand for health services in communities (Haines et al., 2007).

Despite decades of experience and a substantial body of evidence documenting the efficacy and cost-effectiveness of CHWs, there are still challenges that need to be overcome in order to scale up CHW programs, especially where the evidence is compelling and where best practices are well-documented and proven to be effective. The Evidence Review Team 1 (hereafter referred to as the Team) addressed the following question: "Which community support activities improve the performance of community health workers (CHWs)?"

This report summarizes the evidence we have identified that addresses this question. We also provide here recommendations for programming, policy and research, which are informed by the comments and questions that arose during discussions at the U. S Government Evidence Summit: Community and Formal Health System Support for Enhanced Community Health Worker Performance, held on May 31 and June 1, 2012 in Washington, DC.

The Appendix contains further detail about the methodology used by the Team and the methodological issues that had to be addressed in carrying out this work. The Appendix also contains a series of case studies. The case studies address the central question of this report, but they also provide a snapshot of the broader dynamics at play and how community support activities are intertwined with the other important elements of effective CHW programming. This analysis forms part of a needed larger review of evidence about how communities interact with both supply and demand elements of the formal health system.

As a first step, the Team decided that it would organize and analyze the literature according to the following domains: access, demand, support, and trust. The Team created the following definitions of these domains, discussed below.

Access: What the community can do to facilitate the selection and utilization of CHWs.

This domain includes the conditions, perceptions, actions and interventions that affect: (1) the recruitment and selection of optimal candidates to become CHWs, and (2) access of CHWs to community members and vice versa.

Demand: What the community can do to promote utilization of CHW services.

This domain includes the legitimacy of the CHW, including perceived quality of services provided by the CHW and patient willingness to seek services from the CHW. It also includes community awareness of the CHW role and CHW skills/capabilities, community understanding of the importance of educational messages promoted by the CHW, the activities in the community for promoting or marketing the CHW's role and services, and buy-in from community leaders for the CHW's role, and activities for promoting the work of the CHW in the community.

Support: What the community can do to provide both financial and non-financial support to CHWs.

This domain includes: peer and community group support for the CHW, community recognition of the value of CHW's work for the community; social validation of the CHW's role (such as via esteem, special privileges, financial and other types of incentives, and so forth); long-term community support to encourage CHW motivation, retention and advancement; community leader buy-in for the CHW's role and activities; community leader support to help resolve issues, disputes and problems arising from the CHW's work; and assistance with transport for the evacuation of a patient that a CHW identifies as needing care at a higher level.

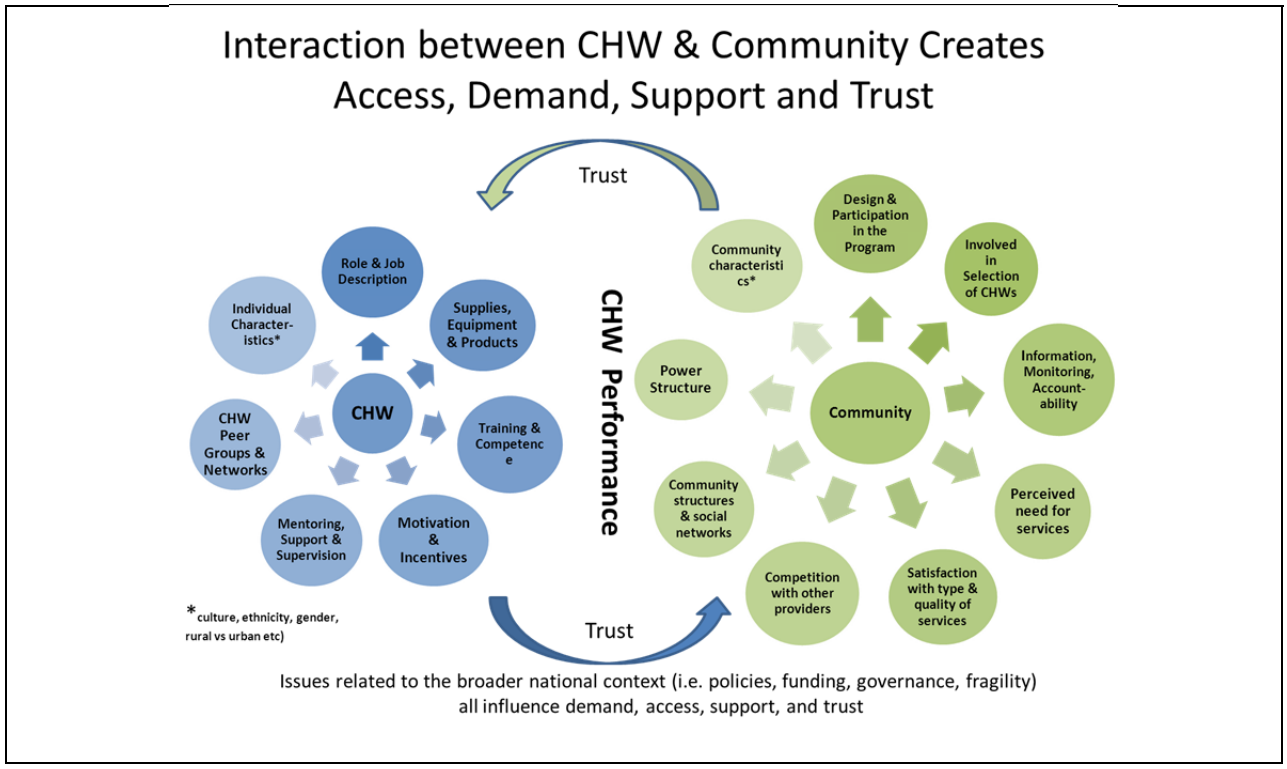
Trust: What the community can do to build trust between the community and the CHW.

This domain includes activities that build trust in the community toward the CHW (which derives from a longer-term relationship of mutual support and effective partnership). The domain also includes activities that promote information-sharing between the CHW and the greater community, community monitoring of CHW activities, and accountability of the CHW to the community.

These domains are not mutually exclusive, but they provided a useful approach for the Team in organizing its work.

The Team used the analysis of these four domains to develop a framework outlining the factors, processes, and structures that affect community support of the CHW. Figure 1 depicts the relationship between the CHW and the community, the various aspects of each that affect CHW performance, and the dynamics that create trust between the CHW and the community.

Figure 1. Social Dynamics between CHWs and Communities



THE EVIDENCE (ENLIGHTENED BY EXPERT OPINION)

As will become increasingly clear, the question being addressed by the Team is one that has received minimal direct attention from the research literature. Thus, in order to answer this question, the Team has had to draw on research that is often tangentially concerned with the question at hand. And, since the Team consists of persons with extensive personal and experience and access to others with extensive experience, expert opinion has exerted its influence as well.

The Four Domains of Community Support: Access, Demand, Support and Trust

Access

Access by community members to the services provided by CHWs can be influenced by various conditions, perceptions, actions, and interventions of community members, both individually and collectively, that result in greater uptake of the work of CHWs. These factors fall into several broad categories: behavioral (motivational), interventional, and relational, among others.

Demand

Rewards provided by the community (such as direct payment or release from community work days) have a direct positive effect on CHW performance, which in turn stimulates greater demand in the community for CHW services (Robinson & Larsen, 1990). Greater demand for information and help from the CHW on the part of the community promotes more effective uptake and use of CHW services at the individual level. Given a high-performing CHW, this can potentially foster broader behavior change at the community level.

Support

The literature recognizes many ways community members and community structures facilitate the motivation, performance and retention of CHWs. The daily functioning and technical performance of CHWs is expected to be more effective if community members support them and have realistic expectations about what they can and cannot do (Gilroy & Winch, 2006).

Social support for CHWs is quite diverse and may include formal written community recognition of CHWs, CHW peer groups, as well as community direction and monitoring of CHW activities. Material support to CHWs is frequently in-kind. Some examples of in-kind support from communities include: exemption from other duties in the community (e.g., community patrol, cleaning day responsibilities); access to free health care or education services; community members providing farm labor for the CHW or donations such as food (e.g., chickens, vegetables, and so forth) or other goods or services in kind. Less frequently, financial remuneration to CHWs is provided from community sources. This may be direct payments from community health structures or the modest profits gained through the sales of medicines or other commodities by the CHW. The community structures, whether informal or formal, that provide these various types of support often exist at the start of a CHW program and become instruments for engaging and supporting the CHWs. In some cases new community structures, such as health committees or advisory groups, are created to provide the necessary support for the CHWs.

Trust

In order for CHWs to effectively carry out their duties, a level of trust between the CHW and the community is needed to enable relationships that will produce positive health outcomes. While the literature is ripe with examples of CHW programs that produce positive health outcomes in maternal, newborn and child health, nutrition, family planning, HIV/AIDS, TB, malaria, dengue control and other interventions, there is little information specific to the elements of

community trust that may enhance the effectiveness of a CHW. Components of trust discussed in this paper are drawn from a conceptual model that looked at health care provider interactions with their clients in South Africa (Gilson, Palmer, & Schneider, 2005). We infer that similar principles will hold true for CHW programs based on descriptive analyses of effective CHW programs.

There are various factors that affect trust between the community and CHWs, as described in Figure 1. Trust is a complex construct, the specific elements of which vary – in different geographic settings, in different social environments, and in the same settings over time (Gilson et al., 2005). It is one of several critical factors, along with respect and partnership, that are easily overlooked when a CHW program is put into place (Rifkin, 2009). A community member who trusts a CHW to minister to her personal or family health needs is taking a potential risk. The CHW needs to have personal interactions with clients in their homes, at community markets, or in other public or private settings; yet the CHW may not be from the same caste, faith tradition or economic grouping of her clients.

The CHW may have difficulty gaining access to clients' houses if she is perceived as being a member of a faction within the community related to the government in a country where the government may have created a legacy of mistrust. The CHW's activities may also compete with a culture that values traditional medicine and faith healers. Community members will have greater trust in CHWs if both groups ascribe to the same culture and belief system (Peltzer, Mngqundaniso, & Petros, 2006). The client must believe that the CHW has a certain level of expertise, will do no harm, will not divulge any private information to others in the community, and will behave in an ethical and helpful manner. In other words, CHWs have a lot of obstacles to overcome before they gain access to communities and be effective in their job.

However, CHW programs can take actions to maximize trust among CHWs, their clients and the community at large or, at the least, to minimize the initial level of mistrust that might exist. Establishing and following a clear policy (known to the community) for selection of the CHW and clear communications to the community regarding what can be expected of the CHW is critical for building trust from the outset. Mutual respect among the CHW, her clients and the community is cited in many articles; often, this respect is built over time. The CHW can build trust by demonstrating respect for the client, by active listening, and by providing quality care. The health worker literature shows that patient-provider trust, including respectful and fair treatment, is rooted in: (1) inter-personal trust (based on provider characteristics, experience and behavior); (2) institutional trust (based on the practices and procedures requiring or allowing institutional providers to act in the best interests of patients); (3) effective broader interactions between providers and the community they serve; and (4) a supportive historical, cultural and socio-political tradition in which the health system and the community have worked together with demonstrable results.

One example of a CHW program where the role of trust between CHWs and their communities is integral for the provision of services is the Comprehensive Rural Health Project (CRHP) in Jamkhed, India (described further as a case study in the Appendix). One of the factors critical to Jamkhed's success is the relationship that CHWs have with their community. At Jamkhed, trust between the community and the CHW arises from the dedication of the CHW to the well-being of the community, as demonstrated by the ongoing effective service, collaboration, and commitment of the CHWs to share their knowledge and recent training with others in the community. The commitment of the Jamkhed CRHP to continuous training and support of its CHWs to ensure their quality performance and strong links with the health system to attend to CHW referrals are critical for giving the CHWs credibility in the community. This builds trust, thereby creating community demand for their services and support for their work.

Community Participation in CHW Program Design, CHW Selection, and Implementation

The process of community participation has been better described in smaller-scale CHW programs; in larger-scale and national programs, documentation of community participation in program design or evaluation has been more limited (Rosato et al., 2008). Those CHW programs that begin with community engagement are able to foster

participation in the identification of health issues of importance to the community. They are then able to respond better to the perceived needs of the community as well as to engage in the provision of simple preventive and curative services (Bhutta et al., 2011). Previous experience has shown that CHW programs are vulnerable to higher-level political and organizational influences. When these programs are owned by and firmly embedded in communities, that vulnerability is lessened.

A key condition for CHW program success, which arguably must be closely related to performance, is the strong relationship of each CHW with the community, described using the term "community embeddedness" (Schneider, Hlophe, & van Rensburg, 2008). CHWs are, in fact, a unique agent for combining current scientific evidence and best practices with indigenous knowledge that can be community-specific. Several review articles and studies conclude that community embeddedness can be fostered by involving local people in CHW selection, program goal setting and program management (Bhattacharyya, Winch, LeBan, & Tien, 2001; Gilroy & Winch, 2006; Haines et al., 2007). Where CHW programs are not embedded in the community, they are often fragile, burdened by high turnover of personnel, and difficult to sustain.

Evidence also suggests that CHW programs thrive when communities become full partners, but struggle when they are solely responsible for galvanizing and mobilizing communities alone. Examples of successful programs can thus be found in the wake of community mobilization efforts, either as part of large-scale community mobilization efforts, such as in Brazil or China, or through local mobilization, often facilitated by community-based, non-governmental or faith-based organizations in many African countries. The challenge is to maintain the momentum of mobilization over time to ensure sustainability of access, particularly among the most vulnerable groups at the community level. While many of the efforts described in the early literature examined public sector programs, more recently CHWs have become foundational for NGO community-based programs, social marketing programs, and social franchises (Bhutta, Lassi, Pariyo, & Huicho, 2010).

The literature recommends involving relevant community structures and groups in the initial assessment of demand for CHW services, the identification of priorities, the design of the CHW program, and delineation of CHW roles and responsibilities (Sauerborn, Nougtara, & Diesfeld, 1989). Individual community members, especially mothers, can convey to CHWs their own health needs and requests for health information through their responses to simple standardized questions which CHWs can ask those in their catchment areas (Diaz, Altobelli, Espejo, & Cabrejos, 2007). In the identification of priority services for the community, health needs as well as equity concerns relative to gender, ethnicity, sexual identity and religion of potential beneficiaries should be addressed explicitly.

A community action cycle in which the community works together to identify and prioritize problems, plan and implement solutions, and evaluate progress may be critical to the creation of demand for CHW services: "The key to the success of community empowerment was the moment when the community engaged with the problem-posing, problem-solving process and recognised that they could collectively change their circumstances" (Rosato et al., 2008).

A process of selecting CHWs that involves the community is also important for creating access, demand, and trust. Several authors describe community involvement in the selection of CHWs as a necessary prerequisite to later demand for their services and the long-term success of the CHW program (Amare, 2009). In Peru, it was found that having the community identify, elect, and formally "designate" the CHW by name in the official community ledger signed by all involved was a formalism that promoted trust and acceptance of the CHW within the community (Altobelli, Espejo, & Cabrejos, 2009). If programs involve community leaders, there is a greater likelihood that CHWs will serve all sections of the community and that the most vulnerable will receive needed services.

Examples of how communities participate in the selection of CHWs are contained in the case studies, located in the Appendix. Of particular note are the Comprehensive Rural Health Project in Jamkhed, India, the BRAC CHW program in Bangladesh, the International Rescue Committee experience in Rwanda, and the Community-Directed Interventions Programs across Africa.

There are, however, challenges associated with community involvement in CHW selection. Research suggests that although communities are typically involved in the selection of CHWs, community members play a limited role in establishing the selection criteria (Sauerborn et al., 1989) or have inadequate knowledge of the selection criteria set forth by the district or national-level program (Stekelenburg, Kyanamina, & Wolffers, 2003). Walt et al. (1989) note that CHWs are often selected by community leaders or elites rather than by the community at-large, and that the selection process can be strongly influenced by economic and political factors in the community (Walt, Perera, & Heggenhougen, 1989).

According to Rifkin (2009), evidence supports the assertion that community participation has contributed to health improvement in poor countries and that when community participation generates trust, recognition, leadership, and partnership with community members, CHW performance and quality of health services can benefit. However, one study found no association between women in the village having a strong influence on CHW selection and later CHW adherence to clinical guidelines (Rowe et al., 2007). Although several authors have noted that community ownership is not sufficiently described and analyzed in the literature, they nevertheless conclude that CHW programs should, from the outset, regulate a clear selection/deployment procedure, engaging the community in planning, CHW selection, implementation, and monitoring (Bhutta et al., 2011).

Training and Supervision

CHWs must be adequately trained for the roles and responsibilities they are expected to fulfill. The way CHWs are trained, managed and supported is central to the quality of health services that they deliver (Rifkin, 2009). In this context, the nature and frequency of supervision as well as the availability of refresher training are usually associated with improved CHW performance and reporting.

The competence of CHWs is influenced by their pre-service level of education as well as the quality and amount of continuing education they receive (Bhutta et al., 2011). “Training is essential if CHWs are to carry out their work effectively. Training covers not only providing preventive, curative, or other relevant services to the community, but also teaching and communicating with community residents” (Bhattacharya et al, 2001, p. 22). These authors note that the medical technical training which CHWs receive oftentimes gives them the competence which serves as an extremely strong driver of demand within communities. On the other hand, many countries set limits on the types of medical services they allow minimally-trained CHWs to perform.

Ongoing skills-based refresher training is required to ensure that CHWs develop and retain their knowledge and skills. CHWs’ expertise develops through a cyclical process of experiential learning and teaching involving indigenous knowledge and technical training (Pinto, da Silva, & Soriano, 2012).

Teaching methodologies, especially those developed for adult education, such as participatory, experiential and testimonial-based methodologies, can make a big difference in the impact of training on CHW learning and later performance (Altobelli, 2012). The same is true of teaching guides and session outlines that are provided to those who teach CHWs as well as of the types and adequacy of educational materials that CHWs are given to use for teaching mothers and families in the community.

There are many effective training models for helping a CHW become proficient in adult education skills, inter-personal counseling, and participatory approaches. Appropriate job aides have been found important in establishing CHW credibility. Moreover, competency-based training strategies such as role playing and field practice are likely to ensure a more skilled CHW than merely exposing her to didactic material. This is particularly true for services such as family planning counseling, which may be more difficult to provide in communities where there are few users of family planning. In Pakistan, the use of locally recognized art forms and cultural patterns in health education materials was a

way for CHWs to gain trust and for their messages to gain acceptance (Omer, Mhatre, Ansari, Laucirica, & Andersson, 2008).

Supervision is a key driver of CHW effectiveness. If CHW supervisors receive adequate training themselves and share this in a consistent and skilled manner with the CHWs they supervise, community members will presumably recognize the competency of the CHW and seek out her services. Conversely, inadequate or inept supervision is often the missing link to effective CHW programming and sustainability. The community's perceptions, beliefs and demands exert a major influence on CHW behaviors and practices (Robinson & Larsen, 1990), so how these may differ from the expectations of CHWs from their formal supervisors may be an important issue.

Community Monitoring

Community monitoring is defined as "monitoring…of community development by an interested community, so that the community can make independent choices about its own development" (Toledano et al., 2002). This sort of monitoring may generate support and trust in the community for CHWs. Accountability of CHWs to the community and community monitoring of their activities is mentioned in the literature as a potential role for communities, but there are few studies that examine the impact of community monitoring on CHW motivation and service delivery (Green, 2011). While there are some studies of community monitoring of facility-based services to improve performance (Björkman & Svensson, 2007), the only study we found of CHW services was in Brazil where the success of a state CHW program in Brazil was partly attributed to the watchful monitoring from the community (Tendler & Freedheim, 1994). The state government surrounded the health program with a flurry of publicity directly through the media, particularly radio, and through the visits of the state coordinating team to communities during the hiring process. The hiring process itself created a group of dozens of rejected applicants who were informed public monitors. The community monitoring function also included instructing community members to urge their mayors to hire a competent nurse, pay her an adequate salary, and run the program cleanly. 'Simply don't vote for your mayor," some of the program's managers advised or implied on their trips to the interior, "if he doesn't provide you access to our health program."

Perceived Need, Benefits, and Overall Community Satisfaction with CHW Services

Community recognition of the need for CHW services and community satisfaction with these services are believed to be significant contributors to the creation of demand and sustained access to services. Provision of effective medical treatment which meets the needs of the community may enhance overall satisfaction with CHWs and generate continued demand for CHWs.

In general, communities have a stronger perceived need for curative treatment than for preventive health promotion or behavior change-related CHW services (Walt et al., 1989). Lehmann and Sanders (2007) write, "There is substantial evidence in several countries that CHW programmes floundered due to disappointment among the community about the range of health services CHWs could provide" (Lehmann & Sanders, 2007), such as in the case of a CHW program in Burkina Faso. Sauerborn et al. (1989) reported that if CHWs could only treat about 40 percent of common minor ailments, the community members were unlikely to consult with them. In some communities such as those described in the Appendix in the case study of services provided by the African Medical and Research Foundation (AMREF) in East Africa, provision of basic curative services that are in high local demand serves as a platform to give CHWs access to community members for the delivery of health education and health promotion messages.

Additionally, demand is related to CHWs' access to the drugs and tools they need to provide treatment. To ensure the continued legitimacy of CHWs in the community, they must have reliable access to the supplies they need to effectively carry out their work (Amazigo et al., 2007; Curtale, Siwakoti, Lagrosa, LaRaja, & Guerra, 1995). The consistent availability of drugs (especially antimicrobials, including antimalarials) correlates with higher community satisfaction for

services rendered; satisfaction has been shown to diminish when treatment and appropriate drugs are not available (Stekelenburg et al., 2003). The weakness in logistical support for drugs and supplies inherent in most developing country health systems can directly impact community demand for CHW services. While pharmacies and drug outlets in the community may provide supplementary support, these services are rarely linked with the formal health systems and commodity costs may be high.

Although the evidence described above highlights a positive relationship between community satisfaction and demand for CHW services, some evidence suggests that overall satisfaction is not consistently linked with superior CHW performance. For example, Mangelsdorf (1988) found that community satisfaction was generally quite high, even when CHWs did not perform well on objective measures of competence. Utilization of services also did not vary according to the CHW's level of knowledge (Mangelsdorf, 1988).

Community Structures and Social Networks

Good management practice suggests that CHWs are more effective when they have supportive structures in the community. These may be informal, working along kinship lines such as when family members help a CHW complete some of her tasks. There may, however, be more formal structures such as health committees, oversight bodies, or an advisory group that supports CHWs (Lehmann & Sanders, 2007). It also may be helpful if CHWs belong to a larger association of CHWs which operates like a community of practice, offering them a distinct identity and a reference group for learning about new services or new approaches for providing care.

Several authors note the importance of engaging with the various social structures that exist in the community, such as the local leadership, women's groups, community-based organizations and faith-based groups, to broaden the ownership of the program and support for the CHWs themselves (Sauerborn et al., 1989; Tripiboon, 2001; Twumasi & Freund, 1985). Lewycka et al. (2010) note that support from a local women's group improved health care-seeking within the community (Dubowitz et al., 2007). In her evaluation of a CHW program in Ecuador, Mangelsdorf (1988) found that the presence of a health committee in the community was associated with better CHW performance in the areas of prevention and maternal-child health. However, the role community groups and other community structures can play in the CHW program needs to be clearly established (Sauerborn et al., 1989). Walt et al. (1989) note that some community structures, such as village health committees, have been weak, inactive, and ill-equipped to engage in the process of supporting and generating demand for CHW programs.

The formation of community structures specifically focused on CHWs appears to have a strong role in generating demand for CHW services as well as in increasing the level of respect a community may have for CHWs (Marsh, Wray, Worku, & Mezgabu, 1999; Wagner, 2012). A recent report on the efficacy and sustainability of World Vision's long-standing Community Care Coalitions (CCCs) supports the contribution of CCCs as critical platforms for the coordination of services within communities. Among other things, the CCCs have been effective in creating and sustaining demand for health services (Wagner, 2012). These results indicate that viable CHW-specific associations increase demand for CHWs and also strengthen the operational link between the health system and the community.

Community structures are key to supporting the CHW and giving her legitimacy in the community. Health committees working with officials from the public health sector, schools and NGOs strengthened CHW programming in South Africa (Dick, Clarke, van Zyl, & Daniels, 2007). In Jamkhed, India, farmers' clubs supported CHWs and helped CHWs to solve problems. In Brazil, community committees became an informed public monitor of the CHW program (Tendler & Freedheim, 1994).

There are numerous examples in the published literature in which CHWs are linked community structures in various ways. In Navrongo, Ghana, community engagement to support the work of the Community Health Officers was a critical part of its CHW program, which documented a pronounced impact on child mortality (Phillips, Bawah, & Binka,

2006). Chiefs and elders convened community meetings to seek community contributions to construct dwellings where the officers lived and worked. The leaders and communities maintained the facility and provided security.

In many African societies, traditional systems of village leadership, social networking, and social organization foster volunteerism for agricultural production self-help, and village governance. In Navrongo, Ghana, these traditional forms of social cooperation are used to mobilize support for community health and family planning. The approach involves constituting health-care action committees from existing counsels of elders, mobilizing traditional peer networks and implementing supervisory services with extant traditional village self-help schemes. While CHWs are the service providers, outreach to men is through *durbars* (community gatherings) which foster widespread knowledge of the program elements (Debpuur et al., 2002).

In Mali, new community oversight committees supported the work of CHWs as well as planned and conducted health activities in their villages. These three-person committees were created at the village level and included a treasurer and representatives from youth and women's groups. Their role was to oversee the use of the village drug kits, assist with restocking, and supervise CHWs. The oversight committees also provided a link between the village leadership and the CHWs (Trevant, 2009). When health committees have minimal engagement with CHWs, CHW status, morale and performance can be adversely affected (Gilson et al., 1989).

Local Power Structures and Competition

The mobilization process for engagement of communities with CHWs described earlier must take into account the power structures in the community to ensure that key stakeholders and decision-makers are engaged. Demand for and trust in CHWs is affected by the presence or not of other health practitioners in the community as well as by the social status accorded to them by the community. Clarifying the role of the CHW is necessary to avoid local competition and to respond to a community's holistic view of health (Walt et al., 1989). One study reported that radio messages highlighting the value of CHWs in the community helped correct misunderstandings between CHWs, mothers, and community leaders, thereby effectively eliminating competition between CHWs and other local health care providers (Elder, Reis, Satoto, & Suwandi, 1992). Dispelling notions of favoritism directed towards the CHW is important for dissipating mistrust in the community. Such favoritism can lead to jealousy and loss of a willingness within the community to cooperate (Dick et al., 2007).

CHWs' ability to provide appropriate and effective services is also influenced by the local community power structures. There is evidence from the sociological literature that some CHW programs have been compromised by political dynamics within the community. For example, a program in India found that power relations affected CHW selection. Powerful local women determined that the role of the CHW was not a highly desirable position because of its demanding work requirements and minimal incentives. These women were not interested in the positions and they ensured that the women selected were of low social status, leading to the selection of candidates who were under-qualified (Gopinathreddy, Jayalakshmi, & Goetz, 2006).

Roles, Job Description, and Competence

From country to country and program to program, there is a vastly diverse range of CHW roles and workloads. While narrowly defined job descriptions can "protect" workers and help them do "real work" (as defined by the CHW program), the best workers often push the boundaries. For example, by providing assistance to mothers with mundane tasks not related to health or by engaging in community-wide campaigns to reduce public health hazards (such as cholera or garbage disposal), CHWs can build trust and thereby can increase the impact of their work (Tendler & Freedheim, 1994).

While preventive care provided by CHWs may actually prevent death and disability, these outcomes are usually not readily apparent to communities. On the other hand, all communities highly value curative care. The entry point to a CHW program is often a service of immediate value to the client and community, such as provision of oral rehydration therapy (ORT) for treatment of diarrhea, basic first aid, or an anti-malarial. These provide the CHW with credibility and legitimacy. At the same time, communities need exposure to health education and disease prevention measures.

The translation of technical biomedical approaches to disease management is a critical role played by the CHW. But to be trusted, the CHW also needs to meet the community's more holistic social development needs. In South Africa, for example, farmers appreciated and trusted CHWs working for a tuberculosis (TB) program, relying on their judgment to address broader health issues beyond TB. These CHWs saved the farmers both time and money (Dick et al., 2007).

Cues of trustworthiness come partly from the client's experience with her CHW and the CHW's attitudes and technical competence. A health care provider's respect and empathy for her patient, which is communicated by listening and caring, are vital (Gilson et al., 2005). Other important attributes are for the CHW to practice what she teaches and to persevere with patience when promoting preventive practices that require behavioral and societal change. Trust between CHWs and a community is a delicate balance of expectations, respect, credibility, fulfillment of expectations, and maintenance of respect and credibility. For example, in rural Peru, if a home visit is scheduled by the CHW, the visit must be made at the scheduled time or the CHW risks losing trust with clients (Altobelli et al., 2009).

Our evidence review identified numerous studies showing that CHWs of all types (such as those who are illiterate and those who have a secondary education) can successfully learn and perform health tasks that achieve positive health outcomes in multiple health areas as long as the workers have received training of adequate quality, job aides and materials, as well as close follow-up and supervision. However, technical competence alone was generally deemed to be insufficient to garner client or community trust. CHWs are also hired for their indigenous knowledge and embeddedness in social networks. CHWs' expertise develops through a cyclical process of adding technical training and experiential learning to already existing indigenous knowledge (Pinto et al., 2012). Both knowledge about the health topic and skill in communicating with the client and the community are considered to be equally important in building a trusting relationship (Hetta & Lundstrom, 1984).

A CHW, once she has the community's trust, is in a better position to be able to work productively with the community. In Uganda, lack of community sensitization by local leaders on the need to recognize and act on signs and symptoms of obstetric complications was associated with low community involvement in obstetric emergency management. AMREF has found that its CHWs in Tanzania, called Community-Owned Resource Persons (CORPs), are much more effective in educating community members than facility-based formal health workers (Ogwang, Najjemba, Tumwesigye, & Orach, 2012). A community-level HIV/AIDS intervention based on changing community norms had the power to change the environmental context in which people make decisions about HIV risk through establishment of peer support groups within communities for post-test counseling. This intervention increased voluntary counseling and testing (VCT) uptake (Khumalo-Sakutukwa et al., 2008).

While CHWs may be either males or females, it is commonly felt that for most tasks involving MCH services, women have the more appropriate knowledge and a broader network of potential clients, and are likely to be more effective. Other important considerations include whether or not a CHW candidate can manage the workload and move about in her catchment area while continuing to fulfill her household and family responsibilities (S. M. Rahman et al., 2010). The freedom to provide services at times that do not conflict with their regular family duties has been important in some settings (Glenton et al., 2010).

The experience that comes with being a CHW over a period of time also lends credibility and trust to the relationship. New research on retention is helping us to better understand some of these factors. In Bangladesh, the poorest CHWs were 2.7 times more likely to stay in their positions as compared to CHWs from the wealthiest quintile, and those CHWs that reported receiving more social prestige and community support were three times more likely to stay in their positions (Alam, Tasneem, & Oliveras, 2011). In the Comprehensive Rural Health Project in Jamkhed, India,

where CHWs typically serve for 20-30 years, they are selected by their communities after multiple discussions, and preference is given to those who are in the lowest castes and poorest (to ensure equity in coverage), those who are not too young (for fear marriage would cause them to drop out), and those who are female (since they have access to other females (S. Arole, 2009).

Support, Motivation and Incentives

Intrinsic CHW Motivation

There are other more subtle characteristics of a CHW that build trust. The CHW's intrinsic motivation, especially for volunteer or lowly paid positions, to serve her community by promoting better health practices and protecting the health of her community and its families is critical (Amare, 2009). Wagner (2012) reports that "volunteerism is alive and easily tapped in most communities."

Organizational/Institutional Support

A CHW program does not run on its own; it requires a high level of professional and organizational support if it is to operate effectively (Dick et al., 2007). The literature has examples of various CHW support programs. While the details of these programs vary, it is critical that the CHW program foster a level of trust with its CHWs that leads them to believe they will be appropriately trained, motivated and supported. And the CHW program needs to convey to the communities that they will receive good-quality care from their CHW.

Health care providers´ level of trust in their sponsoring organization influences their attitudes and behaviors toward patients in ways that then influence the extent of trust between patients and providers (Gilson et al., 2005). CHWs in many programs are very satisfied with their work because of the sense of accomplishment they have in their work, the trust they have received from the community, and the support they receive from the sponsoring organization. It is possible to gain and maintain people's interest and participation in health issues over several years provided an interactive process takes place among trainers, promoters and communities (Kroeger, Meyer, Mancheno, & Gonzalez, 1996). One difficulty here, though, is the high turnover of human resources in the formal health system that is often present at the periphery. This requires repeated training of new personnel and often leaves a gap in support to CHWs, and this can produce a decline in the community's trust in the CHW that may be difficult to recoup (Altobelli et al., 2009)

Community Recognition

In diverse settings, the social prestige and social support that communities give their CHWs affect CHW motivation and retention. As described above, several authors describe the importance of social support for CHWs for retention, but the evidence is less strong on how social support is related to improving performance levels. Retention is closely related to performance since a CHW who has not dropped out of the program is, at a minimum, available in the community to perform the assigned health activities. In a study of the Female Community Health Volunteer (FCHV) program in Nepal, it was noted that the FCHV program lost fewer than five percent of its volunteers annually (Glenton et al., 2010). Although FCHVs receive incentives from the Nepal Ministry of Health and Population, including transport stipends for training and access to microcredit funds, they also receive community support, including recognition and appreciation (e.g., an Annual FCHV Day to honor volunteers, and umbrellas and bicycles from Village Development Committees).

A study from Ethiopia highlights community recognition mechanisms (e.g., posting photographs in public places) as a major factor in the motivation of CHWs (Amare, 2010). Besides this recognition, other motivating factors in Ethiopia include a desire of CHWs to serve the community, recognition of positive health outcomes, possibility of further training, and increased potential for employment and financial compensation. A Bangladesh case-control study used multiple regression analysis to identify independent factors associated with retention of CHWs. The study found that different

types of social support including social prestige, community approval and family support for household responsibilities were all significantly associated with retention (Alam et al., 2011). The sense of increased social prestige as a motivational factor was illustrated by a CHW who said: "Working as a CHW is good for me. Now many people know me. My social honor has been increased." The importance of social prestige may tie into the fact that this helps them build social networks and increases social cohesion (Nyanzi, Manneh, & Walraven, 2007). Recognition is often seen in the praise and respect CHWs are given by the community, sometimes even in the form of being elected to local councils. In Ethiopia, volunteer CHWs were also motivated by the possibility of later being nominated as a candidate for elected positions in associations and government bodies.

One important by-product of community demand for services is a community's willingness to sustain CHWs with support in various forms, including in-kind support, remuneration for services, non-financial incentives, and community recognition. Direct financial payment to CHWs has not always proven necessary as long as CHWs have felt recognized, valued, and supported by the people in their communities (Bhattacharyya et al., 2001; Amare, 2010). Amazigo et al. (2007) reported that coverage appeared highest where community-based distributors reported indirect benefits such as "political goodwill, personal satisfaction, and altruistic fulfillment," and Sauerborn et al. (1989) found that when community participation was actively sought during the CHW program design process, remuneration was not an area of concern for CHWs.

In their review of CHW programs and the use of incentives, Bhattacharyya et al. (2001) concluded that "a CHW's effectiveness depends on his or her relationship with the community. Programs must do everything possible to strengthen and support this relationship." The literature suggests that communities are most likely to support and sustain CHWs when they clearly understand the role of the CHW and witness visible changes in the community as a result of CHW services, such as successful referrals to health facilities or an increased sense of community empowerment (Amare, 2009). In addition, as mentioned in the Community Structures and Social Networks section, the existence of CHW-specific associations has been cited as a constructive approach to maintaining demand for CHW services. These associations can contribute to the CHW circle of support by functioning as a "bridge" in the relationship between the community and the formal health system (Wagner, 2012).

CHWs report that satisfaction from serving the community is a major motivating factor for their work, and they mention the trust built with their neighbors, prestige attained among peers, improved community social status, mobility and social interaction as inherent incentives for their work (Amare, 2009; Ruebush, Weller, & Klein, 1994; Walt et al., 1989). Numerous studies describe a snowball effect whereby positive community-level recognition stimulates higher-quality CHW services at the individual level, consequently amplifying the community-level demand for those services (Amare 2009; Lehmann & Sanders 2007). In one example from Nepal, CHWs attributed the strong community demand for their services as a primary motivating force behind their work (Bhattacharyya et al., 2001). Robinson and Larsen (1990) conclude that feedback and rewards stemming from the community have a greater influence on CHW performance than those which stem from the formal health system.

Despite consensus on the need for community support, there remains a need to more explicitly define and link community support to better CHW performance. For instance, Mangelsdorf (1988) found that CHW perception of community support was actually not associated with better CHW competence. Stekelenburg et al. (2003) found that more CHWs were active in areas where community support (provided in labor, cash, and in-kind) was perceived to be adequate, but yet no significant relationship existed between CHW performance and level of community support.

In-kind or Monetary Payments

There are numerous CHW programs that compensate the CHWs by allowing them to charge fees for services and/or sell health-related commodities and drugs in their communities. BRAC is one of the largest NGOs implementing a CHW model with this type of financial support, as discussed further as a case study in the Appendix. This financial support does not come from the formal health system or from other fundraising efforts of the NGO. The Nepal Female

Community Health Volunteer Program, as described further in the Appendix, has established local endowment funds, the interest from which is used to provide sustainable, although quite modest, financial support to the CHWs.

The studies that exist have highlighted that economic incentives, primarily through supplementary income from the sale of medicines and other health-related products, can attract CHW candidates, and dissatisfaction with earnings can be a main reason for dropping out (Ahmed, 2007; Khan, Chowdhury, Karim, & Barua, 1998; Mahbub, 2000; M. Rahman & Tasneem, 2008; S. M. Rahman et al., 2010). A study of urban CHWs in a BRAC program found that while social incentives are important for retention, financial incentives are the most commonly discussed factor and supersede other incentives.

Ten years after training and deployment, 88 percent of village health workers in the Ifakara program in Tanzania were still active. Their retention was attributed largely to formal health system support. However, some elements of support often come from communities such as recognition. Financial incentives were considered critical in sustaining the CHW program in Tanzania. This finding is also supported by a study done in South Africa, which concluded that non-monetary incentives served as "enablers" while monetary incentives were the "real incentives" (Kironde & Klaasen, 2002).

There are few examples of large-scale programs which have been consistently supported financially by the community. One example is the Chinese barefoot doctor program, which lasted from the 1950s until 1984 (Gilson et al., 1989). Another example of CHW remuneration by communities is a primary health care program developed by the Ministry of Health in the Northwest and Awday regions of Somalia in the 1980s (Bentley, 1989). The MOH and UNICEF stipulated that since the CHW is chosen and appointed by the community, she should be remunerated by it, and the mechanism of payment should be decided by each community. The project review found that all CHWs indicated that they received payments, and most received them on a regular monthly basis. The payments included cash, animals, help in labor on the land, food, gifts and cigarettes. CHWs reported being satisfied with their jobs. The study reported that much program time and effort in the first two or three years was expended on working with the village health committees to ensure regular remuneration. Ten of the 85 original CHWs dropped out after three years but the reasons reported for dropping out did not include problems with remuneration.

While monetary or in-kind compensation are often considered critical to the success or a CHW program, the non-financial incentives – whether from the community or from the formal health system – also improve performance and retention of CHWs. A 2006 UNICEF/WHO review recommends the following as conditions most likely to enhance the effectiveness of CHWs: strong management and supportive supervision, appropriate selection, suitable training, good relationships with other health care workers (and respect of CHWs given by other health workers), and community embeddedness. Unfortunately, the prime need for remuneration may make governments reluctant to support CHW efforts in the context of health sector reform and constrained budgets.

CHW Peer Groups and Networks

A supportive environment for CHWs can be fostered by strengthening the relationships among CHWs themselves. There are many examples of CHW associations and CHW peer training programs that provide peer support and, in some cases, ongoing training and supervision. In a study of a CHW program in Gaza Province, Mozambique (Edward et al., 2007), the authors suggest that Care Groups facilitated the motivation and retention of volunteers by providing supportive environments through group meetings for supervision and training. The trained volunteers were each responsible for ten households, and they were also members of a Care Groups consisting of 10-15 volunteers who met once or twice a month with a paid supervisor who taught them a new message to share with their households. The authors also commented on the support of the volunteers by community leaders: "Community structures such as the village health committee and pastors played a critical role in supporting community-wide initiatives to promote the

activities of volunteers" (Edward et al., 2007). Both this Mozambique program and the Nepal FCHV program (discussed previously and also described further in the Appendix) not only have high CHW retention, but the CHWs are performing well, as substantiated by the high coverage of important interventions and the decreases in child mortality in the program areas.

Contextual Factors

Contextual factors such as geographic location, culture, socioeconomic status, and health system characteristics all influence access, demand, support, and trust. These, in turn, influence CHW performance. These factors influence how CHWs are perceived by community members and hence their ability to productively work within the community (Bhattacharyya et al., 2001; Stone, 1992). In rural Peru, female CHWs are more trusted by women to give them information on female health issues such as pregnancy and family planning (Altobelli et al., 2009). In other settings, men may be highly motivated to become a CHW if they believe that it will provide an opportunity for meaningful income (Walt et al., 1989).

Many of the studies that have explored the role of community engagement in creating demand for and access to CHW services have been carried out in rural areas (Bhutta et al., 2011). This is a limitation for future programming since in much of sub-Saharan Africa and South Asia, more than half of the population will soon be urban (if it is not already) and many of the most vulnerable families are living in informal settlements and slums. It is important to examine how community engagement operates in an urban context and whether the relationship between community ownership and demand for CHW services exists in urban settings as well.

In rural areas where health coverage is low, traditional concepts of disease and traditional practices may prevail, requiring a different set of CHW skills from those required in an urban setting where the population may have a higher level of education. For example, in rural Africa, the dominance of traditional ethno-medical concepts of disease and related local terminology required that CHWs have specific health education skills (Kroeger et al., 1996). CHW access to those with a higher level of skills and knowledge, while important for CHW retention in rural areas, was not a driving factor for retention among urban CHWs in Bangladesh (Alam et al., 2011). At the community level there appears to be less resistance to the CHW role in urban areas, with few CHWs noting disapproval from family or community members unlike their rural counterparts (Alam et al., 2011). Research relating to the factors affecting the relocation of health workers, which have become known as "push" and "pull" factors, should accordingly be considered as CHWs play an increasingly prominent role in health service delivery (Lehmann, Dieleman, & Martineau, 2008).

The cultural context also plays a significant role in defining the relationship between CHWs and the community. CHWs should have expectations that are aligned with those of program managers and policy makers. In Nepal, for example, the CHW program is influenced by a tradition of volunteering as a moral behavior, by a long-standing lack of respect for paid government workers (who are often chosen through corrupt practices and who may be poorly motivated and frequently absent), and by the program's community embeddedness. The low morale of paid health workers in Nepal highlights the "moral superiority" of the volunteer FCHVs in this situation (Glenton et al., 2010).

Sustainability

Community financing of CHW efforts is a relevant issue for both policy development and sustainability. While the case has been made by many that community financing for payment of CHWs is a burden to poverty-stricken communities, relative to other in-kind or socially oriented approaches, community development theory and considerable practice suggest that major payoffs might be obtained in the long term. However, the costs of engaging in these types of efforts at a larger scale have received limited inquiry to date.

One helpful summary of many of the issues that have been addressed in this review is provided by Battacharyya and colleagues in their seminal paper written in 2001 that focused on the various incentives and disincentives that affect CHW motivation, retention and sustainability (Bhattacharyya et al., 2001). Table 1 provides a summary of their findings, which, like ours, are based on a mixture of evidence and expert opinion.

Table 1. Community Influences on CHW Motivation and Retention

Type of community influence	Favorable	Unfavorable
Factors related to community involvement in the appropriate selection and support for CHWs and their work	• Community involvement in the selection and training of CHW • Community structures and organizations that support CHW work • Community information system that captures data on CHW work	• Lack of community involvement in CHW selection, training, and support • Inappropriate selection of CHWs (though the community may not be entirely responsible for this problem if it arises)
Factors related to community involvement and the demand for CHW services and the long-term retention of CHWs	• Recognition among community members of improvements in the health and well being of the community attributable to CHW activities (partly as a result of successful CHWs referrals to health facilities) • Community feeling empowered by CHW contributions	• Community needs and ideas not sought by the CHW program or disregarded leading to unclear roles and unmet community expectations (such as those related to the provision of curative as well as preventive services)

Source: (Bhattacharyya, Winch, LeBan, & Tien, 2001)

DISCUSSION

Given the fact that CHWs are generally embedded within their own community and serve as a link between the community and the formal health system, community dynamics have a major effect on CHW performance and overall CHW program effectiveness. The role of the community in selecting and utilizing its CHWs to ensure access to CHW services, in creating demand for CHW services, in providing support to CHWs for their services, and in building mutual trust between the CHW and the community are critical but also complex and highly contextual. And they are obviously highly intertwined with the support provided by the formal health system to which the CHW is attached. To give one small example, if a CHW service is dependent on having access to certain commodities, medicines or equipment (such as vitamin A or condoms or a scale for measuring the weight of children), then the capacity of the health system to provide these to the CHW will have a major influence on how effective the CHW can be, the degree to which the community will want to use the CHW service, the interest that potential candidates will have in serving as a CHW, the respect and legitimacy of the CHW in the community, and the trust that develops between the CHW and the community. The quality of training and supervision provided by the health system to the CHW is another example of how these linkages determine community demand for CHW services.

There has been a notable paucity of research on these issues, and most available evidence comes tangentially from studies that address other questions such as what kind of an impact an intervention delivered by CHWs has on program performance or on the health status of the population. In addition, there is a notable lack of evidence from urban areas and from large-scale programs. Most of the research is from rural settings and from shorter-term small-scale programs of NGO-supported CHWs. Thus, it is difficult to predict how successful these efforts might be if taken to larger scale in government programs where there is most likely to be less oversight, weaker supervision and supply systems, and more limited resources on a per capita basis.

Equity issues remain paramount here, even at the community level, because there are often powerful influences that can undermine CHW program performance. One of these, which is well known, is the cooptation of programs and services by local elites that further reinforces marginalization of the most vulnerable, who often have the greatest need for CHW services. Processes in the community that overcome these influences are important to promote. Routine systematic visitation of every household is one example of a "pro-equity" approach that ensures that every household has at least equal access to CHW services, though some may need more frequent visitation than others.

Limitations of the Review

This report is an initial effort to pull community-CHW dynamics together in a coherent fashion. Because of the limited time that the Team had to assemble the evidence that it feels is most appropriate to address the question posed to it, further analysis of our evidence is needed to strengthen and refine our conclusions.

Much of the evidence on community support for CHWs is more than 10 years old. During the past decade, health systems research has focused more on facility-based services provided by the formal health system. Issues of task shifting and task sharing have largely been analyzed at the level of medical and paramedical staff in facilities, with a focus on clinical tasks, rather than at the level of CHWs. Furthermore, most studies of community engagement have been largely descriptive or have employed personnel management perspectives on what is good practice in fostering community organization in rural settings. Where quasi-experiments were employed, the independent variable was usually the entire program rather than specific elements of the CHW program, so little evidence has been generated about the importance of specific CHW program components or about the influence of specific aspects of community support on CHW performance. Thus conclusions were often more generic and did not identify explicit alternatives to traditional approaches to community mobilization. These traditional approaches involve getting the assent of community leaders, forming health committees, identifying collaborating members of the community, and using them to organize events and facilitate utilization of services.

Interestingly, most of the literature reviewed does not describe how ethnic minorities and the most vulnerable members of the community were engaged in community participation. The largest health benefits from CHW efforts might be realized by reaching the most vulnerable. To the extent that the most vulnerable are excluded from larger processes of community participation, the impact of CHW efforts might be attenuated.

Many of the studies of CHW performance were conducted in the larger context of experimental intervention research, with greater oversight and financing than would be available in most routine health programs. Many of the early studies on the community elements of health programs were conducted in Latin America and East Asia, reflecting the ethos of the primary health care movement in the 1980s. The review was not able to address the important issue of how community support activities vary with the kinds of tasks and responsibilities CHWs are given.

Questions Raised by the Review

The review raises important fundamental questions that are only beginning to be addressed now but that will be important for maintaining progress as CHW programming moves forward. A number of these are methodological. We list several of these here:

- What are the best and most appropriate indicators of individual CHW performance and overall CHW program effectiveness?
- How is trust best measured? This includes not only trust that the community has in the CHW but also trust that the community and the CHW have in the formal health system and the trust the formal health system has in the CHW and the community.

- What are the essential core components of community support that CHWs need in order to optimize their performance in the community?
- What kinds of supportive policies from the government and from health systems will foster community support for optimizing CHW performance and will enhance CHW retention?

CONCLUSIONS

The capacity of communities to contribute positively to CHW performance depends in large part on support from the health system as well as on the degree to which policies from the MOH recognize the importance of community engagement and foster it. Trust is a key aspect of the community-CHW relationship that ultimately determines the effectiveness of the CHW in promotion of behavior change and health improvement in the community.

The literature on the role of the community in fostering increased access does not offer strong evidence about what works, but rather a set of plausible approaches to engage communities in support of CHWs and the services they might provide. What might work in one cultural context may not be the most effective or efficient strategy in another area, but some of the principles may apply to both. The operationalization of these principles may differ by the type of service provided (e.g., vaccination versus family planning), or by the nature of the community served (e.g., highly dispersed communities in mountain terrain versus densely populated urban slum communities). Nevertheless, there is a considerable pool of lessons learned from the literature on CHWs that might be appropriate for simple experiments or evaluations.

Direct community support for CHWs, defined as a combination of various social and material (in-kind or financial) mechanisms, is described in a number of reviews and studies and is seen as an important contributor to CHW program success. Many of these studies examine the relationship between these types of support and retention of CHWs. However, retention alone is a crude proxy for performance. The literature is mostly descriptive and lacks studies with strong designs for examining the relative importance of these types of support to maintaining or improving the performance of CHWs. There seems to be evidence that CHW programs established on the basis of providing motivation through in-kind or monetary support will degrade in performance if this support is not consistently maintained. However it is not clear by how much performance could be enhanced through increasing the level of this type of support. Social types of support appear to be quite important for retention of CHWs, but it is not evident from the literature how this support is related to high performance. The relative importance of social support compared to community in-kind or monetary support from communities or from the formal health system also remains to be studied.

Community involvement in the selection and long-term support of CHWs can be integral to facilitating trust and understanding of CHW services. There is, however, little evidence of its impact on the coverage, quality or outcomes of services provided by CHWs.

All four elements (access, demand, support and trust) are closely related and undoubtedly contribute in multiple ways to CHW success in the provision of services, but there is very limited evidence from the literature and programmatic experiences that demonstrate their impact on CHW performance. Rather, studies have focused attention on higher-level health personnel, on the efficacy of the treatments provided, or on overall health program organization rather than on CHWs per se. There is a clear need for further research and policy analysis about community influences on CHW performance.

How to apply the findings of this review to programming at large scale is an important issue. Launching national programs requires strong governmental support in terms of policies, funding, and technical direction, in order to achieve scale up with fidelity in design. At the same time, flexibility, initiative and continuity at the local level are essential. The Nepal FCHV Program (described further in the Appendix) is a good example of how this was achieved. We need to learn

more about how multiple sectors and multiple levels of government (particularly local governments and the local private sector) can support CHW programs.

RECOMMENDATIONS

The recommendations which follow are based on our reviews, comments made by participants at the Evidence Summit in May 2012, and the critiques provided during the peer review process. We have limited the recommendations to those that are supported by evidence and good management practice.

For Building Productive Community Partnerships

- The ultimate responsibility of the CHW is to support the right to health and build the capacity of families to equitably improve the health of all in the community. Therefore, efforts to strengthen CHW services should seek community participation in planning, supporting and monitoring service implementation to ensure that services are appropriate, that coverage of quality services is high, and that benefits accrue to those in greatest need.
- Community ownership and participation – in deciding what duties CHWs should assume and how they will be selected, trained, recognized, supported, supervised, and provided with incentives, ongoing training, and opportunities for advancement – should be an integral CHW program component.
- In order for CHWs to be effective, they should have recognized and respected linkages with the formal health system to which they are affiliated. These linkages should provide them with legitimacy within the formal health system, access to appropriate training, supervision, supplies, teaching materials, tool kits for community surveillance, and support for managing referrals.

For Policy and Program Development

- Public and private sector health systems considering the development of CHW strategies should learn from the operation and financing strategies of successful large-scale CHW programs (e.g., Brazil, Nepal, and Ethiopia). These programs offer lessons on how community support and engagement can be mobilized as well as on how to monitor implementation.
- Long-term financing mechanisms are critical for sustaining the provision of services by CHWs, allowing for continuity in training and supervision, as well as expanding services to communities to achieve the desired coverage and benefits.
- Existing participatory approaches such as PLA (participatory learning and action) and participatory rural appraisal (PRA) should be used to create support for CHWs and to facilitate community-based approaches to problem-solving processes and systems.
- Given that community satisfaction may be influenced by CHW provision of curative services and drugs, consider training CHWs to provide basic curative services. (Doing so will likely make it necessary to have an effective drug supply chain that reaches the CHW.) The availability of appropriate curative services and medicines confers legitimacy to the CHW and brings credibility to the preventive and health promotion activities of the CHW program.
- If sectors other than health are seen as a higher priority than health if they are linked to the root causes of poor health in the community, then CHW programs should engage with those sectors (e.g., agriculture or water and sanitation) to improve population health.

- Fostering the development of interpersonal, institutional, and community trust is critical to an effective CHW program. Programs should ensure that the expectations of CHWs, programs managers and policy makers are in alignment, and that policies and resources are in place to enable these expectations to be met.

For Research and Evaluation

- There is a need for expanded funding that is directed specifically at how communities influence CHW performance.
- The determinants of community satisfaction with, acceptability of, and demand for CHW services need further investigation. Research is also needed to determine the contextual influences on the community demand for and use of CHW services.
- More research is needed on the potential role that CHW-associations can play in improving CHW performance and support at both individual and community levels, in generating and sustaining demand, as well as in facilitating the continuum of care between the community and health facility.
- What support should CHWs seek from a broader group of stakeholders such as community leaders, teachers, religious leaders, development workers and other health providers, including traditional healers?
- Communities need metrics that they can use to understand their health and well-being, how it improves over time, and what CHWs have done to contribute to these improvements. Specifically, how can communities help to assure quality of care provided by CHWs and how can quality assurance help to increase demand for CHW services?
- There is a need to examine the relationship between the level of community support (that is, financial and non-financial incentives) and the level of performance of CHWs. Further research is needed to explore how community engagement and demand are maintained and how they impact CHW performance as greater scale and coverage are achieved.
- Multiple research strategies, including participant observation, operations research, community monitoring, and experiments are needed to directly test the effects of inputs and processes at the community level (as well as within the formal health system) for improving CHW motivation, performance and retention as well as overall CHW program effectiveness.
- Does strengthening local governance structures (such as village health committees) empower communities to assist in the planning and monitoring of CHW programs and to assist in improving CHW performance?

APPENDIX

1. METHODOLOGY

Literature for inclusion in the review was identified by the USAID organizing staff through computerized searches of multiple electronic databases including PUBMED using search terms for "health care providers," "community health workers," and "performance." A total of 21 articles were then made available to the Team. Several days prior to the only face-to-face meeting of our Team on 26 March 2012 (at the Pre-Summit Meeting) the Team had the opportunity to review evidence. During that meeting, there was a consensus that the evidence gathered at that point was not sufficient to answer the question posed to Team. In general, these 21 articles demonstrated a positive health outcome of one or more interventions that were delivered by CHWs, but they provided minimal description about how the CHWs functioned in the community and almost no detail on how the community provided support to enhance the effectiveness of the CHWs. The focus of these studies was basically on the interventions themselves and their health impact.

Given this limitation, the group charted a new course. The group decided to define what it considered to be the essential components of support that CHWs need to be effective, and then the group determined which of these are provided by the health system and which are provided by the community. The results of this discussion are show in Appendix Table 1.

The Team then established four sub-groups to search for evidence that addressed these four topics. In addition, the group decided that case studies of effective CHW programs where these various domains of community support are an integral component of the program functioning would contribute to the evidence. Finally, the group set out to identify additional articles and documents that would helpful in answering the question assigned to the Team. Fortunately, quite a few additional articles of relevance were indentified. Of particular value was a set of references which had been accumulated by Dr. Steve Hodgins, Technical Director of the USAID Maternal and Child Health Integrated Project (MCHIP), who is leading an initiative to consolidate existing evidence related to large-scale, public-sector CHW programs and possible approaches to optimizing their effectiveness. Another was an evidence base accumulated by the Working Group on Community-based Primary Health Care (CBPHC) of the International Health Section of the American Public Health Association, which has been carrying out a review of the effectiveness of CBPHC in improving child health (Freeman, Perry, Gupta, & Rassekh, 2009; H Perry, Freeman, Gupta, & Rassekh, 2009). A third source of additional evidence was a recently completed systematic review of material on the effectiveness of CHWs that has been recently completed by Zulfiqar Bhutta and his colleagues for the World Health Organization (Bhutta et al., 2010).

New articles were systematically screened for their relevance in addressing the four domains identified by our group, and information was recorded on a spreadsheet for each article. The spreadsheet had spaces for recording the information below:

- Which of the four domains were addressed in the article
- Outcome and performance measures
- Relationship between support activities and performance
- Description of important contextual factors that may have influenced support activities and/or performance
- Quality of the evidence
- Relevance of the evidence to Focal Questions 1 and 4

The evidence presented here is not a rigorous analysis of this dataset, but it does provide a rough summary of the contents. Lack of time was a constraint, as well as the fact that many of the articles were identified late in the process of the group's work. At the time of preparation of this report, there were 255 articles that qualified for our

review, including peer-reviewed journal articles and articles or documents from the gray literature. The quality of the papers was judged to be mixed. The Appendix contains this information for the 29 most important of these articles.

Each sub-group prepared its own report. As it turned out, the sub-group reports addressed a number of overlapping issues. Consequently, the group decided to merge the reports into the common themes that are identified in the evidence for this paper.

Appendix Table 1. Components of Support Needed by CHWs to Optimize Their Performance

<table>
<tr><th>Provided by the community</th><th>Provided by the health system</th></tr>
<tr><td>Access: Community facilitation of selection and utilization of CHWs</td><td rowspan="10">• Training (provision of basic curative skills to respond to local needs, interpersonal skills, and skills in health education)
• Access to tools, technology, supplies, materials with which to teach community members
• Access to external resources such as technical support, resources, and referral medical care
• Supervision
• Formal identification with the broader formal health system (which, among other things, conveys legitimacy on the CHW)
• Reasonably organized workload (e.g., time-targeted counseling to increase client ability to absorb messages, and avoidance of overwork in order to reduce CHW burnout)</td></tr>
<tr><td>• Selection/recruitment – the right person for the position
• Provision of orientation to the CHW about the local context (if the CHW is not from the community) and dissemination within the community about the CHW's formal role and capabilities</td></tr>
<tr><td>Demand: Community promotion of CHW service utilization</td></tr>
<tr><td>• Legitimacy of the CHW, including perceived quality of services provided by the CHW
• Willingness of the patient to seek services from the CHW
• Community awareness of CHW role and skills/capabilities
• Community understanding of importance of CHW behavior change communication (BCC)
• Community promotion of CHW role and services
• Buy-in of community leaders for the CHW role and for individual CHWs
• Response from within the community to calls from the CHWs for health-related community mobilization</td></tr>
<tr><td>Support: Community financial and non-financial support for CHWs</td></tr>
<tr><td>• Incentives, money, and transport
• Recognition, endorsement and social validation
• Respect, status, and trust
• Peer and community social support
• Linkage to existing groups in the community (e.g., savings groups)
• Capacity and willingness of the community to engage in activities that support CHW activities
• Long-term support for motivation, retention, and advancement
• Problem-solving support (including guidance and support from community leaders and others when problems arise in the community related to the functioning and role of the CHW or in dealing with problem patients, etc.)</td></tr>
<tr><td>Trust: Community facilitation of trust between the community and the CHW.</td></tr>
<tr><td>• Legitimacy (affirmation by the community of the CHWs' work based on demonstrated effectiveness of the CHWs' contributions)
• Community support and monitoring (taking on the responsibility of assessing CHW performance and holding the CHW accountable)
• Access to local information in the community that could help the CHW in his/her work</td></tr>
</table>

2. METHODOLOGICAL ISSUES ADDRESSED

As the Team began its work, some fundamental methodological issues arose. These included defining the key terms used and linking the elements of community support to performance outcomes. Below is a summary of the definitions utilized by the Team.

What is a community?

"Community" is a widely used term that has no single or fixed definition. Broadly, a community is formed by people who are connected to each other in distinct and varied ways. Any community is diverse and dynamic, and one person may be part of more than one community. Community members may be connected by living in the same locality, by shared experiences, or by shared living situations, history, culture, religion, identity or values. A more specific definition is provided by Khumalo-Sakutkwa and colleagues, who define a community as a group of individuals who live in proximity to one another and participate in common practices, depend on one another, make decisions together, identify themselves as part of something larger than the sum of their individual relationships, and commit themselves to the group's well-being (Khumalo-Sakutukwa et al., 2008). Each community has its own structure with a unique blend of complex politics, social networks, and history. All communities have their own set of beliefs, taboos, customs and traditions concerning health.

The CHW serves as a bridge between the community and the formal health system, and ideally comes from the community and lives within it. Especially for sensitive health issues, such as family planning, sexual and reproductive health, HIV/AIDS and other stigmatic diseases, trust is critical. In many countries, based on past history, there is deep mistrust of the medical establishment and of government health services, especially within vulnerable populations. CHWs can help to restore that trust.

What Is a Community Health Worker?

The term "community health worker" embraces a variety of community health practitioners who are selected, trained and working in their own communities. For decades, family planning, child health and other public health programs have utilized CHWs as a way to expand access to services and serve rural populations or the urban poor. CHWs are front-line health workers, accessing communities that are geographically and culturally hard to reach by the national health system, and interacting with specific underserved families and groups. CHWs are a very diverse group, ranging from volunteers with only a few hours of training and very minimal and highly selective responsibilities that require less than one hour a week to fulfill, to those with more than one year of formal training, a wide range of responsibilities, and full-time employment from the state. The size of catchment or service areas also varies widely, ranging from only a few families to a population of 5,000 people.

A number of definitions of CHWs have been established recently as a result of the growing interest in community health programs (Lewin et al., 2010; Bhutta et al., 2010). The essential features of these definitions are (1) that the person has some formal health system function in the community outside of the peripheral health facility, (2) has received some limited formal training from the health system, and (3) is working on one or more priority health activities in support of the goals of the formal health system. Most CHWs working in maternal and child health are women, while malaria workers involved in spraying or those working with water systems are often men.

What Is Evidence?

The scientific and philosophical debate surrounding this question is substantial, and resolving this debate is far beyond the scope of the work here, of course. However, the Team quickly came to a consensus that the available quantitative evidence from both individual projects and reviews of CHW programs was insufficient to address the question posed to the Team and therefore it would be necessary to seek qualitative evidence as well.

We have chosen to identify studies in which programs/projects/studies used CHWs, achieved a favorable outcome or impact (as defined below) and engaged the community in some aspect relevant to the four domains characterizing the community-CHW relationship discussed elsewhere (access, demand, support and trust). The Team also chose to include several case studies that demonstrate some of the ways in which communities appear to have contributed to CHW performance. While this is supportive rather than definitive evidence, it is by and large the best evidence currently available.

How Do We Identify Evidence?

There are very few research studies that specifically address the contribution of community support activities to the performance of CHWs. Community support is often seen as a pre-requisite for an effective program rather than as an element of program design under the control of program planners and managers and has therefore usually been omitted as a subject of investigation. The Team's approach was to look for articles where there was evidence of effective performance of CHWs and in which there was evidence of a community support activity for the CHW program. Thus, the evidence identified through this process is suggestive but not conclusive that the community support activity made a contribution to CHW performance.

Defining CHW Performance

The USAID working group for the Evidence Summit developed a framework for CHW performance that uses a framework of Proximate, Intermediate and Distal Performance measures. The Team chose to modify this framework, using the same indicators, but modified slightly to classify measures of performances as follows: inputs into CHW performance, processes related to CHW performance, CHW program outcomes, and CHW program impacts. This is described in greater detail in Appendix Table 2.

Appendix Table 2. Listing and Classification of CHW Performance Indicators	
Category	**Aspect of performance**
Input indicators	Quality of CHW training
	Number of CHWs selected and trained
	Financial investment in training, supervision and commodities
	Planning strategies employed to ensure high levels of coverage in the target population
Process indicators	Number and type of services provided by CHWs
	Knowledge and skills of CHWs
	CHW adherence to protocols
	Quality of work performed by CHWs
Output indicators	Legitimacy/credibility (the degree which community members and the health system staff members consider CHWs to be making an important and valued contribution to the health and well-being of the population and to the functioning of the health system)
	Prestige (the value and/or status that community members and health system staff members accord to CHWs and that CHWs accord to themselves)
	Advancement (the rate at which CHWs can advance in their skills, competencies, formal responsibilities, and formal status within the health system)
	Turnover/attrition (the rate at which trained CHWs resign, retire, or abandon their position)
	Absenteeism (the rate at which those who are supposed to be active CHWs are not functioning in their role)
	Workload, productivity
Outcome indicators	Satisfaction of CHWs with their work
	Population coverage of services (the percentage of the population within a defined catchment area that has received or is receiving certain health services from CHWs)
	Patient and community health-related knowledge and practice of key behaviors (the degree to which patients and/or community members have learned key health-related knowledge and practiced key health-related behaviors)
	Satisfaction of the population/community with the work of CHWs
Impact indicators	Morbidity (prevalence of serious illness in the population relative to a comparison population without CHWs)
	Mortality (level of mortality in the population relative to a comparison population without CHWs)
	Equity (the degree to which access, coverage, or morbidity/mortality levels vary among different socio-economic or socially defined subgroups in the population relative to a comparison population without CHWs)
	Cost-effectiveness (the cost of achieving specific outcomes related to health improvement using CHWs)

3. Evidence from Selected Case Studies

African Medical and Research Foundation (AMREF) Experience with CHWs in East Africa: The Role of Communities in CHW Support[2]

AMREF is one of Africa's leading international NGOs and has vast experience with implementing community-based programs that involve CHWs. Here are two vignettes that point out how communities have played a role in strengthening CHW performance.

The first vignette is from the Nakasongola District, located in central Uganda. It has one of the highest levels of under-5 mortality in the country, mostly due to malaria. In March 2011, AMREF launched a project to improve the health of women and children under five in the rural sub-counties of Nakitoma and Kakooge in Nakasongola District of Uganda. AMREF focused on the strengthening of community health structures, especially the quality of health services provided by Village Health Teams (VHTs). A VHT consists of four or five CHWs, selected by popular vote in the community. Each CHW is in charge of 25-30 households.

The Ministry of Health in Uganda introduced VHTs in 2001 to promote healthy practices at the community level such as the use of pit latrines, hand washing and sleeping under mosquito nets. However, the teams were not as effective as envisaged originally. Though the VHTs were supposed to be a link between the community and the formal health structure, workers in the health centers would not recognize referrals from the CHWs. The CHWs did not have the skills and tools to encourage change in health behavior in their communities, nor did they receive adequate supervisory support.

AMREF sought to reactivate the VHT structure for better health delivery at the village level by strengthening the capacity of the teams and the VHT system. This was done by providing additional training for the CHWs, and equipping them with skills to conduct health visits to households, collect data for use in planning of health interventions, make referrals, mobilize the community, provide counseling, and give treatment for malaria, diarrhea and pneumonia. AMREF mentored the VHTs though supportive supervision, and gave them non-monetary incentives such as badges, stationery and T-shirts.

AMREF is currently working with 158 CHWs in both sub-counties, and their work is having an impact. 5,323 insecticide-treated mosquito nets have been distributed to children and pregnant women in Kakooge Sub-County alone. Recent findings also indicate that in 2011 health facilities in Kakooge had a 50 percent increase in the number of women who received intermittent preventive treatment of malaria. Because tangible services such as the delivery of bed nets are well-received in the community, AMREF uses the distribution exercise as a platform for other activities, such as immunization, antenatal services, HIV and malaria testing, as well as nutrition and other health education.

To bridge the gap between the facility-based formal health workers and CHWs, AMREF organizes regular joint meetings and training sessions where the roles and responsibilities of each group are delineated, clear linkages established, and challenges addressed. This has helped improve collaboration between the VHTs and health workers, resulting in better services and care. AMREF also works closely with nine community-based organizations (CBOs), which are very useful in collecting data and mobilizing the community. CBOs are also important for continuity and sustainability of the initiative, as they will remain in the community after AMREF leaves.

The second vignette comes from Tanzania, where AMREF also works with CHWs. Mwajuma Masudi Pangala is a CHW who is called a Community's Own Resource Person (CORP) in Msorwa Village, Mkuranga District, Tanzania. She is a 40-year-old mother of six who grows cassava, vegetables and sweet potatoes to feed her family, and she makes a little

[2] Provided by Peter Ngatia, AMREF

money from selling cashew nuts and coconut. She combines her farming with her duties as a CORP, for which she is not paid. Mwajuma is one of 500,000 health care workers trained by AMREF across Africa to bring health care and education to their communities. Her comments highlight some of the non-financial incentives that motivate and support CHWs:

> I am proud of the work I do because I can see the results. People respect me and they come to me for advice. I am thankful for the regular training, which has equipped me with a lot of knowledge. I can speak confidently to large groups of people, and now I have even been made the leader of other CORPS in Msorwa.

The Comprehensive Rural Health Project in Jamkhed, Maharashtra, India: Addressing Issues of Access, Demand, Support and Trust in a Pioneering CHW Program[3]

The Comprehensive Rural Health Project (CRHP) in Jamkhed, India, is one of the world's pioneering CHW projects and the first CHW project in India. Jamkhed CRHP led the way in the early 1970s in developing community partnerships for improving health and empowering women through integrated multi-sectoral approaches. It is also one of the premier programs for training CHWs from government and NGO programs in India. Jamkhed CRHP began in 1970 under the leadership of Drs. Rajanikant and Mabelle Arole in a severely impoverished and drought-prone area of central India. These doctors saw the potential that illiterate women had to address the health problems of women and children in their communities if they were given appropriate training and support. CRHP identified talented and committed women of lower castes to carry out village-level health work.

CHW services included health education, diagnosis and treatment of simple conditions, promotion of key services such a family planning, and referral of patients in need of higher-level medical care. CRHP also facilitated the formation of Farmers' Groups. These groups met monthly and supported the CHW with village level problem-solving. Later they supported the formation of Women's Savings and Loan Groups. Jamkhed CRHP provided each CHW with training that made it possible for her to earn a livelihood – usually some kind of income-generating activity unrelated to her work as a CHW. Gradually, the Jamkhed CRHP began to facilitate a process whereby communities selected new CHWs, as the need arose. The project learned that CHWs must be able to perform services that the community values in order to gain community support. This meant that the CHWs had to have good-quality technical training and strong ongoing supervisory support.

The Jamkhed CRHP work has been ongoing for more than four decades, and the results have been extraordinary: the baseline infant mortality rate (IMR) of 176 deaths per 1,000 live births in the early 1970s declined to 50 within 5 years and then over the next decade fell to the mid-20s (M. Arole & Arole, 1994). During the early 1980s, the government of India adopted the Jamkhed CHW model and scaled it up, but unfortunately it failed because of poor selection of candidates and inability of the health system to support these workers. Beginning in the 1990s, the Jamkhed CHWs began training visitors from throughout India and around the world on the approach it had pioneered. The CHWs and staff continue to train CHWs from tribal areas in Maharashtra and neighboring states, and training is now beginning for CHWs in Bihar and neighboring states in north India. The work of the CHWs has become renowned internationally and has been featured in the publication *National Geographic* and in a video on the *National Geographic* website (Johnson, 2008; Rosenberg, 2008).

One of the factors that is critical to the Jamkhed CRHP's success is the relationship that CHWs have with their community. Trust between the community and the CHW arises from the dedication of the CHW to the well-being of the community, as demonstrated by ongoing effective service and collaboration. It also arises from the commitment of the

[3] Henry Perry, Shobha Arole, Connie Gates, and Karen Leban contributed to this case study

CHWs to share their knowledge and recent training with others in the community. Additionally, a strong linkage of Jamkhed CHWs to the health system for training, support, and referrals is critical for giving the CHWs credibility in the community. This credibility creates community-level demand for their services and builds trust and support for their work. The effectiveness of Jamkhed CRHP and its CHW program is best demonstrated by the high level of CHW retention. Most CHWs have been working for at least two decades. One of the important lessons of the Jamkhed CHW experience is the importance of CHWs spending time together to learn from each other, to share frustrations, challenges, and successes, and to build a mutual support group.

At the National Council for International Health's annual meeting in 1988 in Washington, DC, Muktabai Pol, a CHW from Jamkhed, shared her experience providing primary health care in a remote village. She concluded her speech by pointing to the glittering lights in the hall and saying: "This is a beautiful hall and the shining chandeliers are a treat to watch. One has to travel thousands of miles to see their beauty. The doctors are like these chandeliers, beautiful and exquisite, but expensive and inaccessible." She then pulled out two wick lamps from her purse and lit one, saying: "This lamp is inexpensive and simple, but unlike the chandeliers, it can transfer its light to another lamp." She then lit the other wick lamp with the first. Holding up both lamps in her outstretched hands, she said: "I am like this lamp, lighting the lamp of better health. Workers like me can light another and another and thus encircle the whole earth. This is Health for All" (M. Arole & Arole, 1994).

BRAC: The Role of Community Support in Enhancing the Performance of Community Health Workers[4]

BRAC is one of the world's largest NGOs working in global health and development: it has approximately 200,000 employees and its programs reach 141.2 million people in nine countries around the world. This includes 110.0 million people in Bangladesh, where the project has been working for the past four decades (BRAC, 2010). BRAC also has one of the world's largest CHW programs. In Bangladesh alone, it currently has 80,000 CHWs.

The foundation of BRAC's health program in Bangladesh is its community health worker, the *Shasthya Shebika* (SS). SSs are selected from within a village-level BRAC women's group called a Village Organization (VO). After receiving four weeks of standardized training at a BRAC training center, the SS begins to provide services within her community, visiting all of the roughly 250 households for which she is responsible. These workers provide services such as community case management for childhood pneumonia, collection of sputum specimens for persons with symptoms suggestive of tuberculosis (TB) who then receive Directly Observed Treatment (DOTS) from the SS if the case is confirmed. They also perform a wide variety of other health-related tasks, including promotion of family planning, immunizations, antenatal care, safe delivery and good nutrition as well as the provision of first aid and treatment of minor illnesses (H. Perry, 2000; Standing & Chowdhury, 2008).

BRAC's health programs have gained global recognition for their quality, effectiveness and scale, including the Gates Award in Global Health in 2004. BRAC's health programs have made an important contribution to Bangladesh's remarkable progress in reducing under-5 mortality and maternal mortality, enabling it to be one of the few countries in the world that has already achieved its Millennium Development Goal for child health (World Health Organization & UNICEF, 2012). BRAC is now building strong CHW programs in India, Pakistan, Afghanistan, Sri Lanka, Tanzania, Uganda, Southern Sudan, Sierra Leone, Liberia and Haiti based upon this experience.

The BRAC experience clearly demonstrates some of the ways that communities can support the performance of CHWs. The first is that the community itself is engaged in the selection of SSs from among its own residents. The selection of an SS is in part a responsibility of the VO, of which she is a member. Secondly, the community provides the funding to support SSs through the sale of health products (such as oral contraceptives, iodized salt, oral rehydration

[4] Henry Perry contributed this case study

salts, soap, sanitary napkins, delivery kits, and sanitary latrines). By the very nature of the way SSs work, they are accountable to the communities they serve.

The role of the community in the selection and financial support of SSs (and in providing accountability for the work of the SS) is a critical element in the success of this CHW program. Without these contributions from the community, it would not have been possible for BRAC's CHW program to expand to the scale it has, nor would it have been possible to have obtained CHWs with such a high level of motivation and commitment.

The BRAC experience also clearly demonstrates the interdependence of the community's contributions and the health system's contributions to effective CHW performance. BRAC provides the structure within which its CHW program functions. It establishes the process by which SSs are selected, it provides the training, and it also provides the supervision and support which are critical for the ongoing functioning of CHWs. Finally, BRAC provides SSs with access to products that they sell in the community. By making these available to SSs at a highly competitive price, SSs can also sell them at a competitive price in the community while at the same time receiving a small profit for herself.

The Nepal Female Community Health Volunteer Program: Issues of Access, Demand, Support and Trust in a National CHW Program[5]

Nepal's government established the Female Community Health Volunteer (FCHV) Program in the late 1980s in order to increase the outreach of basic health services in rural areas. The FCHV program initially recruited one FCHV for every ward in 27 districts, and then by 1993 expanded to all of Nepal's 75 districts in a phased manner. Currently, there are 50,000 FCHVs throughout the country who provide basic health services at the community level. They have made major contributions to community-based public health programs at the national level through their support for vitamin A supplementation, distribution of de-worming tablets, distribution of packets of oral rehydration salts (ORS), promotion of immunizations, treatment of pneumonia, provision of iron supplementation to pregnant women, and promotion of family planning.

FCHVs are the pillars of Nepal's community-based primary health care services. FCHVs have been able to administer on a sustained basis vitamin A supplementation every six months to 90 percent of children throughout Nepal. A recent evaluation revealed that they had examined 88 percent of the children symptomatic of acute respiratory infections, attended the deliveries of 72 percent of women who had recently given birth, and visited 72 percent of postpartum women. FCHVs are one of the important contributors to Nepal's success as one of only a few poor countries in the world on track to achieve the Millennium Development Goals for mothers and children (UNICEF & WHO, 2012). The FCHVs serve as a key referral link between the community and the health post. In addition, FCHVs have made significant contributions to women's leadership at the Village Development Committee (VDC).

The implementation of the FCHV program has been supported by the community, the government health system, and the mass media. According to FCHV Program policy, each FCHV supervises a mother's group that meets every month to discuss health issues. This group also supports the FCHV in her work. In 2003, the FCHV program established a National FCHV Day and the districts have been encouraged to hold events to celebrate this day. The formal health system supports FCHVs by providing basic and refresher training, educational materials and supplies, regular supportive supervision and monthly meetings. The mass media play a supplemental supporting role by providing information about the program.

In 2007, the FCHV Program encouraged local governments to establish an endowment fund as a community incentive for FCHVs (New Era 2008). These are funds that are placed in a special account at a local bank. The principle cannot be withdrawn, but the interest is used to support FCHVs. Initially, a local NGO (the Nepali Technical Assistance

[5] Ram Shreshta contributed this case study.

Group) conceived of the idea of endowment funds and promoted their establishment throughout Nepal. This concept was supported by the Ministry of Health and it, along with other organizations, made financial contributions to establish these funds.

Although the FCHV program functions well, it must be noted that the impact of FCHV activities depends on the magnitude of support of the community and the functioning of the health system. FCHVs will only be able to achieve and continue their high level of performance as long as the formal health workers assigned to the health posts and sub-health posts perform their assigned tasks regularly and support the FCHVs.

CHWs in Rwanda: Giving Communities Control in Selection of CHWs[6]

Rwanda is one of only a few countries in sub-Saharan African countries making strong progress in reducing its under-5 mortality rate. Rwanda's declined from 177 deaths per 1,000 live births in 2000 to 91 in 2010 (UNICEF & WHO, 2012). Such dramatic improvements can only come from a combination of factors. However, there is evidence that the country's community case management (CCM) program has contributed substantially to this decline.

The Rwanda CCM program was conceived in 2003 after a group of Ministry of Health staff members took a trip to Kenya and Uganda. The CCM program was first implemented in 2004 in Kirehe District, in the southwest of the country. The program initially promoted only home management of malaria. The management of diarrhea with ORS and zinc were added in 2005, and antibiotic treatment of childhood pneumonia was added in 2007, turning the program into a fully integrated CCM (iCCM) intervention. The project is now led by the Ministry of Health's Community Health Desk, with continued collaboration from the National Integrated Malaria control program. The program expanded geographically as well, from one to all 30 districts in Rwanda.

The Rwanda iCCM program has many remarkable elements, but its recruitment policy is particularly notable. Initially, CHWs were chosen by the community, without further specifications. This led to a CHW workforce that was approximately two-thirds men and one-third women. In 2005, the Ministry of Health instituted a policy that the CHW workforce should be divided equally between men and women, with each community electing one woman and one man who would work collaboratively as a pair. This new policy meant that district and health center staff had to return to each community that did not already have both a woman and a man elected. Because there were many more men than women, a number of men had to be removed from their posts in order to achieve gender parity. This initially caused considerable friction, as the men who were removed adamantly expressed their desire to stay. Some initially refused to return their medicine box. This confirmed that the CHWs, who despite serving in a volunteer rather than a paid capacity, were strongly motivated to serve their communities.

Overall, the revised policy was well-accepted. There were several reasons for this. The rule for gender balance was explained clearly. It was applied uniformly and transparently, with no exceptions. And, it fit in with a broader campaign to promote gender equality. Perhaps most importantly, the population understood the rationale for having both a female and male CHW: to insure that any member of the community would be comfortable in consulting a CHW at any time.

Rwanda's approach to recruitment proved to have several indirect benefits. It confirmed the government's ownership and support of the iCCM program, boosting its credibility and the motivation of CHWs. Indeed, the government's ownership of iCCM, its willingness to make important decisions and implement them decisively, has been a key factor in the success of the program. More recently, these changes are making it easier to plan expansion of iCCM

[6] This case study was contributed by Emmanuel d'Harcourt, Alison Witcoff, and Eliane Ndereimina.

to include neonatal interventions, which are more easily administered by women than by men. At the same time, the equal representation of men has helped confirm the notion that men share the responsibility for caring for sick children.

The Community-Directed Intervention (CDI) Program: The Role of the Community in Supporting CHW Performance for Priority Health Problems in Africa[7]

The Community-Directed Interventions (CDI) Program uses an approach in which communities are given important responsibilities for the planning and implementation of highly targeted interventions aimed at priority diseases (CDI Study Group, 2010). CDI was first adopted by the African Program for Onchocerciasis Control (APOC) in the mid-1990s to help ensure and sustain the provision of ivermectin treatment for more than 75 million Africans, many of whom are in many remote and isolated locations. APOC works with communities to take ownership of the distribution process, defining who, when and where the intervention will be implemented. The community also decides on how the implementation will be monitored, and financial incentives or other support will be provided to the implementers. The community then selects the implementers, who are then trained by APOC. The community then directs the implementation process (CDI Study Group, 2010). Community selection of community-directed distributors led to improved performance in terms of coverage of interventions in Cameroon and Uganda (Katabarwa, Habomugisha, Eyamba, Agunyo, & Mentou, 2010).

In recognition of the success of this approach, the Special Program for Research and Training in Tropical Diseases undertook a study to assess the potential of the CDI strategy for other diseases. Over a three-year period, the effectiveness of the CDI strategy was tested in 35 health districts in Cameroon, Nigeria and Uganda, having a total population of 2.3 million people. In the study area, in addition to the provision of ivermectin, communities used the CDI strategy to provide vitamin A supplementation, distribute insecticide-treated bed nets, provide home management of malaria, and provide short-course directly-observed treatment of tuberculosis patients. The CDI strategy, compared to randomly selected control districts, achieved higher coverage for all interventions except the TB intervention.

The evaluation revealed that community participatory processes were important, and community implementers (CHWs) were deeply committed to the CDI process. CHWs were more motivated by intangible incentives than external financial incentives. Based on the findings of this study, APOC has recommended that the CDI approach be adopted for integrated, community-level delivery of appropriate health interventions in the 16 African countries with experience in community-directed treatment for onchocerciasis control. By engaging communities and empowering communities, the CDI program has prompted an eagerness on the part of communities to participate in the provision of multiple interventions, leading to cost savings for the health system as well as increased health system impact (Mutalemwa et al., 2009).

This experience indicates that communities can become strong and active partners in CHW programs. Communities can select, motivate and supervise CHWs if a linkage is provided to health programs. The program establishes the process for working with communities, defines the communities' roles and responsibilities, provides training for CHWs, and ensures that the CHWs receive the commodities and supplies they need to carry out their work.

[7] Henry Perry and Bill Brieger contributed this case study.

4. ANNOTATED BIBLIOGRAPHY

Document/Article	Activity Heading				Evidence Synthesis				Type of Document
	ACCESS	DEMAND	SUPPORT	TRUST	Describe community support activity(ies).	List performance measures and outcomes	Describe relationship between support activity(ies) to performance found.	Describe important contextual factors that may have influenced support activities and/or performance	
(Alam et al., 2011)		X	X		"Social prestige, community approval and household responsibilities were important non-financial factors associated with CHW retention" (p. 1) Despite their improved social status, many CHWs noted that they preferred money to social prestige because they have to buy everything to live in urban areas." (p. 6)	Retention of CHWs	"CHWs who enjoyed more social prestige after they became CHWs were more than three times as likely to remain compared to those who reported less social prestige after becoming CHWs (adjusted OR= 3.34, 95% CI= 2.01– 5.56)… In addition, CHWs who received community approval or support were almost three times more likely to remain as CHWs compared to those who did not (adjusted OR=2.57, 95% CI =1.52–4.34)." (p. 6)		Observational study
(Amazigo et al., 2007)	X	X	X		"Although further research is required, anecdotal evidence pointed to diverse indirect benefits for distributors [CHWs]—political goodwill, personal satisfaction and altruistic fulfillment. The results demonstrate that community ownership is among the important determining factors of sustainability of community-based programmes." (p. 2070) "CDTI empowers communities to select their community-directed distributors (CDDs), choose the timing and method of treatment administration and resolve distribution-related problems." (p. 2071) "Over two-thirds (69.2%) of communities for which data was available (468) were making financial and/or non-financial contributions to CDTI activities." (p. 2076)	Ivermectin coverage			Observational study

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(Onwujekwe, Uzochukwu, Ojukwu, Dike, & Shu, 2007)		X	X	X	"Baseline research results were presented to community stakeholders to inform them of project objectives. This enabled stakeholders to see and accept the degree to which problems existed in their communities that they may not have recognized before. The presentation also served as an avenue to solicit community buy-in for project activities." (p. 464) "While the monitoring visits temporarily promoted increased motivation on the part of the mobilizers, the level of commitment wanes fast after such visits. The community-based supervisors, or "relais," apparently did not succeed in providing the type of support needed for ensuring continued commitment of the mobilizers." (p. 471)	"Knowledge and practices of family planning, knowledge and attitudes about HIV/ AIDS and STIs, and use of health services" among community members in areas visited by CHWs. (p. 459)			Uncontrolled before-after study

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	ACCESS	DEMAND	SUPPORT	TRUST	Describe community support activity(ies).	List performance measures and outcomes	Describe relationship between support activity(ies) to performance found.	Describe important contextual factors that may have influenced support activities and/or performance	
(Batega, Greer, & Plowman, 2004)	X	X	X		'The participation of community leaders in the selection of drug distributors (DDs) was high (89%), and most of the DDs (98%) had received training prior to assuming roles." "In addition to words of gratitude from caregivers, other forms of community support to the DDs included: • Parish chiefs and other community leaders paying courtesy visits to the DDs in their homes; • Local leaders bringing their children to the DDs for treatment using Homapaks, thereby increasing community member confidence in DDs; • Local leaders commending the work of DDs at local public events; and • In Kumi district, DDs were presented with certificates of recognition and appreciation." (p. 20) "The DDs were asked during FGDs [focus group discussions] what kind of support they received from the community leaders. It was noted that local leaders are instrumental in mobilizing the community members to attend [Home-Based Management of Fever/Malaria] village meetings. However, the DDs complained that the local leaders have not come out to support the DDs materially as promised by the district health officials and resource persons during their training." (p. 20)				Mixed methods program evaluation

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	ACCESS	DEMAND	SUPPORT	TRUST	Describe community support activity(ies).	List performance measures and outcomes	Describe relationship between support activity(ies) to performance found.	Describe important contextual factors that may have influenced support activities and/or performance	
(Bentley, 1989)	X		X	X	"Because of the variety of sociocultural, economic and political features of the population to be reached in each *tuulo* [small administrative unit], it was decided that there should be no project interference initially in the choice of a mechanism for payment. This should be decided by each community itself. The only stipulation was that a fee-for-service system would not be acceptable. Following the first training course, a tripartite contract was signed amongst the CHW, the member of the village health committee and a member of the regional PHC team."(p. 1021) "There was almost universal failure [in the first 2-3 years] to meet with promises for regular remuneration without pressures from project staff" (p. 1026) "All 24 PHC villages have a health committee. In one village the committee was functioning badly, but in all the others the committees appeared to be active and met at least once monthly… The major topics are discussion of individual problems (8), making a work plan for the CHW (6), discussion of disease prevention in the village (3) and organization of immunization days." (p. 1024)	CHW utilization, change in diarrhoeal episode patterns, disease prevention		"The primary health care project of the Ministry of Health in the Northwest of Somalia, assisted by UNICEF and initially also by Save the Children Fund (U.K.), found itself in [a situation with no effective health care infrastructure]. With conventional health services in a state of almost complete collapse except in the regional capital, the health needs of rural population had to be addressed from scratch. The project started in 1982 and by 1986 had reached the stage where progress had apparently been sufficient to warrant a formal review." (p. 1019)	Non-randomized controlled trial

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(Bhutta et al., 2008)	X	X	X		"Two community mobilizers from Aga Khan University assisted LHWs [Lady Health Workers] in identifying community volunteers, who helped set up community health committees for maternal and newborn care in their villages in close liaison with LHWs. These committees supported LHWs in conducting 3-monthly group education sessions in the intervention villages and helped to establish an emergency transport fund for mothers and newborns." (p. 2)	Stillbirths, neonatal mortality rate, skilled birth attendant, home birth, health behaviors such as early breastfeeding			Non-randomized controlled trial

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(CARE, 1999)	X	X	X	X	Reported activities of village elders (and the number of responses) include: – Organizing meetings and participating in selection of CHWs and VHC members (7) – Supporting the activities of CHWs (7) – Calling *barazas* [community meetings] to discuss the project and CHW services (5) – Promoting CHW services to families – Mobilizing the community to support immunization and Vitamin A education (5) – Calling *barazas* to discuss disease prevention and health promotion activities (3) – Assuring the security of the CHWs during their rounds (3) – Conducting follow-up household visits to assess satisfaction with CHW services (2) – Establishing community bank accounts; collecting payments to CHWs for medications (2) "Widespread support exists in the community for the services provided by the CHWs and for the community pharmacy. When focus groups of mothers were asked what health care providers they most trusted, CHWs and dispensary staff were mentioned most frequently" (p. 3-4)	Child mortality			Mixed methods program evaluation

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(Chaiken, Deconinck, & Degefie, 2006)		X	X		"Save the Children USA relied upon a participatory planning process in which local *woreda* [district] officials, traditional birth attendants, local volunteer community health workers, community-based reproductive health agents, and other local officials were invited to a meeting to discuss the problems of malnutrition in their area and strategies that might be used to address these problems." (p. 99) "To enable the program to be targeted, local leaders identified the *kebeles* [small administrative unit] within the overall woreda that were most significantly affected by the drought and nutrition emergency; Local officials helped to identify candidates for the position of outreach worker, at least one of whom would be posted in each community; Local participants agreed to motivate their neighbors and friends to participate in screening of the children and helped to break down barriers to resistance." (p. 99)	Malnutrition prevalence	"Survey results obtained during and after the emergency phase showed a marked trend toward the reduction of mortality among children under five years of age (under-5 mortality) and in the rate of severe acute malnutrition." (p. 101)		Observational study
(Crookston, Dearden, Chan, Chan, & Stoker, 2007)	X		X		"In 2000, RACHA began using Buddhist nuns and wat grannies to promote and support improved breastfeeding practices. Through a village vote, peers select two young Buddhist nuns per village to promote breastfeeding... Volunteers receive a small stipend for time spent in training, but receive no monetary compensation for teaching. Nuns receive a blue bag with breastfeeding pictures and the RACHA logo on it to help villagers identify them as health promoters." (p. 11)	Early breastfeeding			Uncontrolled before-after study

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	ACCESS	DEMAND	SUPPORT	TRUST	Describe community support activity(ies).	List performance measures and outcomes	Describe relationship between support activity(ies) to performance found.	Describe important contextual factors that may have influenced support activities and/or performance	
(Delacollette, Van der Stuyft, & Molima, 1996)	X				"They approved the plans for the malaria control project, and in each village the inhabitants chose a literate volunteer as malaria CHW." (424). "They received only a symbolic monetary reward, as well as the standing gained in the community. Nevertheless, no CHW dropped out of the project." (p. 425) "Problems concerning the relation between the CHWs and the community, as follows: - the community expected CHWs to deliver comprehensive and continuous care and became progressively disappointed by their limited services; - the community was not inclined to compensate CHWs for their efforts, financially or otherwise; - CHWs tended to elude community (and HC [Health Center]) control of their activities; and - CHWs did not catalyse genuine community participation in malaria control or in health care in general." (pp. 427-8)	Malaria morbidity and mortality		"Less than 1% of households have an income from salaried jobs or trading, and subsistence farming is virtually the only economic activity (5). The level of educational attainment is very low, particularly in girls, of whom almost 90 % do not complete a single year of formal schooling (6). Primary health care (PHC) is delivered through a network of 17 health centres [HCs] and a well-equipped 660-bed hospital." (p. 423)	Non-randomized controlled trial
(Dohn, Chavez, Dohn, Saturria, & Pimentel, 2004)	X		X	X	"The community council solicited and approved volunteers to be health promoters, assigned work areas to the promoters, and assisted with communication functions such as reminders about the monthly meetings or other events, general monitoring as to whether promoters were making visits to their families, and problem-solving activities such as making adjustments when the initial work assignments were poorly balanced among the promoters" (p. 187)	Community involvement; 11 health indicators		Comparison of three interventions: "In our research project, the Las Filipinas 1 neighborhood had only the health promotion program while Las Filipinas 2 had both the health promotion program and the microcredit program. The semirural community of Ingenio Angelina, located about 6 km north of San Pedro de Macorís, had only a microcredit program." (p. 186)	Non-randomized controlled trial

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(Dubowitz et al., 2007)		X	X	X	"The Dular program is initially introduced to a village through the village contact drive (VCD). This event consists of 2 days of training and advocacy, during which the objectives of the strategy are discussed with villagers and information is gathered regarding local beliefs and practices ... related to women and children's health. This information is used to plan project activities appropriate to local conditions that are maintained over a consistent period. [Local resource persons] LRPs identified during the village contact drive collectively form a local resource group, which meets weekly with the [Anganwadi workers] to review progress." (p. 267)	"Antenatal and birthing practices, colostrum delivery, delivery of breastmilk as first food, reported use of iodized salt, measured iodized salt status, immunization and weight-for-age z-scores (WAZ) of children 0 to 36 months of age." (p. 266)		"The Dular program was devised as a response to many of the challenges facing the [Integrated Child Development Services], most noticeably the problem of expansion of the program without a corresponding increase in the number of health workers to serve the population, in addition to adequate attention to targeting poorer villages, lower castes, and more vulnerable regions (i.e., the states of Bihar and Jharkhand). With respect to child malnutrition, another identified problem was the disproportionate attention given by the ICDS to older preschool children rather than children under the age of three, and pregnant women." (p. 267)	Non-randomized controlled trial
(Gottlieb, 2007)			X		Prior to vitamin A campaigns, the existent Female Community Health Volunteer [FCHV] cadre was "not always given respect by their communities and their credibility was further challenged by oft-lacking medical supplies" (p. 4) "Through tactics such as inviting volunteers to speak at meetings, allowing them to pass to the front of the line when awaiting social services, and giving them preference in participating in other government programs, NVAP [National Vitamin A Program] brought FCHVs newfound respect in their communities and motivated them to carry out public health activities." (p. 4)			Due to severe problems with the public health system, this program used semi-annual vitamin A distribution campaigns through FCHVs	Observational study

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(Green, 2011)				X	"[T]his report examines eight community monitoring methodologies and approaches which have emerged primarily from the quality improvement and social accountability spheres." (p. 5) "The literature review revealed a lack of consensus on the definition of community monitoring. It also found that not only has the potential role of community monitoring in improving the performance of Volunteer Health Workers not been explored in any depth in the theoretical literature, but also that there appears to be a complete absence of implementation experience." (p. 5)				Literature Review

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(Houeto & Deccache, 2007)	X	X	X		"The identified problems were ranked according to their relative everyday importance by the community members; The community discussed the issues of the resources necessary for the resolution of the identified problems as well as the potential collaborations with professionals (health or non-health); The community identified various actions to be taken. It decided to set up a steering committee, which identified seven main lines of action..." (p. 4) "At the end of each meeting, mothers met and unanimously chose a community health worker (CHW). Mothers proposed to add vermifuge, because according to them, intestinal worms worsen child fever." (p. 5) "The community agreed upon starting micro-insurance: 100F CFA ($US 0.20) as a membership fee, and a monthly contribution of 200F CFA ($US 0.40) by household ($US 4.80per year). The contribution covers 100% of care at the CHW level and at the district health center." (p. 5)	Under-5 malaria prevalence Adequate health care access			Uncontrolled before-after study
(Katabarwa et al., 2010)	X				"The focus shifted to engaging communities and succeeded in recruiting more willing distributors selected through the traditional kinship structure and trained by health workers… Therefore, selection and training of distributors in Uganda were based at the kinship level within a community, while in Cameroon, it was not yet the case in every community." (p. 217)	Treatment coverage	"Only 30.3% of the distributors in 2004, 15% in 2005, and 19.7% in 2006 completed mass treatment within a week. Interestingly, a high percentage of 72.4% of the distributors in 2004, 55.6% in 2005 and 69.7% in 2006 had been selected by community members." (p. 291)		Observational study

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(Matomora, 1989)		X	X		"Although the VHWs selected and trained in the Mvumi programme area knew they would have no drugs or other equipment, the villages decided to train them and contribute substantially towards the costs of their training." (p. 1033) "The programme's heavy reliance on the village chairmen meant that where such a chairman was weak, uninterested or unpopular work slackened." (p. 1034) Community committees and village leadership "became more supportive of the work of village health workers/promoters and traditional midwives… the promoters were seen to be the lay members of the village health committee" (p. 1034)	Community immunization coverage, knowledge of diseases, antenatal clinic attendance		VHW program was started in 1974, but VHWs "received little support. Their attrition rate was assessed in 1981 to be 77%." (p. 1033) Efforts were made in 1981 to strengthen these services with community participation	Observational study
(O'Connor, Lynch, Vitale, & West, 1999)			X		"Community participation was an important part of this trachoma intervention. Villagers developed selection criteria in neighborhood meetings, then used these criteria to choose a VTA [village treatment assistant] from among their close neighbors (1 VTA for each 5-10 households)." (p. 258)	Trachoma status of children in villages			Randomized controlled trial

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(Okeibunor et al., 2004)	X	X	X		"As mentioned above, the CDTI [Community-Directed Treatment with Ivermectin] process includes community selection of CDDs [community-directed distributors] who in general serve in a volunteer capacity." (p. 888) "[I]n health matters, programme managers often select CDDs, while the community was almost exclusively responsible for the selection of CDDs for community development and water and sanitation projects." (p. 890) "'The village health development committee provides incentives for CDDs for latrine inspection, slaughter houses inspection only, but other developmental activities do not have incentives. NIDs [National Immunization Days] have incentives from the programme, CDTI has incentives from cost recovery (community leader, Cameroon)." (p. 891) "Community views often expressed confidence in the CDD because the community members interact on a daily basis with the CDD, whose competence and commitment to the well-being of the community have been demonstrated over time." (p. 890) "Instead, non-financial incentives, such as self-fulfillment and recognition, and especially the spirit of promoting the community's interest, are the main motivating factors." (p. 892)				Observational study

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(Okeibunor et al., 2011)	X				"To ensure local support, the selection of CDDs [community-directed distributors] was delegated to each kindred within a given community." (p. 3)	Percentage of pregnant women reporting having slept under and insecticide-treated bednet; IPTp [intermittent preventive treatment of malaria among pregnant women] adherence	"The effects of the CDI [community-directed intervention that used volunteer community-directed distributors] programme were largest for IPTp adherence, increasing the fraction of pregnant women taking at least two SP [sulfadoxine-pyrimethamine] doses during pregnancy by 35.3 percentage points [95%CI: 0.2 80, 0.42 5], p-value <0.001) relative to the control group." (p. 1)	"The discovery and extraction of crude oil in the area has led to massive in-migration over the last decades, resulting in a rapidly growing ethnically diverse population." (p. 3)	Non-randomized controlled trial
(Olupona, 1995)	X		X		"In implementing this project, the staff worked in collaboration with many groups. The communities selected volunteers who were trained as village health workers (VHWs), traditional midwives (TMs), and nutrition promoters (NPs). The cost of the initial training of these community-based workers was jointly born by the community, the local government, and the project." (p. 31)	17 indicators including prompt malaria treatment, nutrition and birth spacing			Observational study

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(Onwujekwe et al., 2007)	X	X			"The study tools were participatory research approach using meetings, feedback sessions and discussions with community leaders and malaria control managers at the local government and state levels. The meetings were used to fine-tune the design of the CHW strategy and establishing plans for the implementation, monitoring and evaluation. Also, issues regarding the remuneration of the community health workers, the drug and other materials supply management, user fees, management of revenue, referrals, integrating the CHW strategy into the public health care system and plans for sustainability of the strategy were discussed and resolved at this stage." (p. 97) "Community members that were selected by the project team with the help of community leaders were trained to become CHWs and their remuneration was through commissions on their drug sales."	Project costs, outcomes			Uncontrolled before-after study
(Omer et al., 2008)			X	X	"SEPA [Socializing evidence for participatory action] activates social participation at every step of the research process, from framing the issues to planning and implementation. It brings informed public discussion through all-inclusive workshops and community meetings, fosters dialogue between service users and providers, and sparks initiatives for change."			"61% of women in Sindh did not attend doctor's check-ups while they were pregnant. Focus groups suggested that many women think they should only seek prenatal care when something is wrong. Nine out of ten women in the province had not reduced their workload up to their seventh month of pregnancy. Their children were 21% more likely to suffer chronic malnutrition and 49% more likely to suffer acute malnutrition. There was a widely held misunderstanding that colostrum should be discarded, depriving the child of valuable passive immunity." (p. 179)	Non-randomized controlled trial

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(Paxman, Sayeed, Buxbaum, Huber, & Stover, 2005)	X		X		"The committees have taken responsibility for a range of activities, including recruiting and training volunteers, raising money, and enlisting the invaluable support of local government, social, and religious leaders...The committees actively supported the volunteers in their work, ensuring that they encountered no resistance." (p. 209) "One critical area of negotiation was the selection of the community health volunteers (CHVs), which called for diplomacy in the face of patronage. When local leaders wanted to place unqualified individuals in positions as volunteers, CINI[Child in Need Institute] staff found the program's detailed guidelines for volunteer selection useful and insisted that everyone adhere strictly to these criteria, as all parties had agreed to do. In this way, many of the candidates recommended by local leaders were eliminated from consideration because they did not meet the basic criteria for volunteers (such as age and residency)" (p. 208).			"Scattered throughout the foothills of the Himalayas, villages in India's Garhwal region are greatly affected by the rugged topography and difficult climatic conditions. Those who live in the villages may be as far as 15 kilometers (9.3 miles) from the nearest paved road. Linked only by narrow trails, these villages are hard to reach even in good weather. Government health facilities are few and far between, and finding health-care providers who are willing to serve in these remote areas is difficult. Women, in particular, are frequently unable to take the time to attend to their own or their children's health needs." (p. 207)	Observational study

Document/Article	Activity Heading				Evidence Synthesis				Type of Document
	ACCESS	DEMAND	SUPPORT	TRUST	Describe community support activity(ies).	List performance measures and outcomes	Describe relationship between support activity(ies) to performance found.	Describe important contextual factors that may have influenced support activities and/or performance	
(H Perry et al., 2010)	X	X	X		"The formal community authorities helped to select the volunteer educators and promoted the full cooperation of the community in the project, ensuring that all households in the village were included in the project. A number of traditional midwives became volunteer educators. Community leaders volunteered their time to serve on feedback committees, which represented the communities in monthly meetings with the staffs of the health centers. The project worked with the salt vendors in the markets to promote the sale of iodized salt and the removal of non-iodized salt from the marketplace." (p. 172)	Maternal and infant mortality; health behaviors such as early breastfeeding	"The analysis of the Care Group vital events data revealed that between 2000 and 2005 a dramatic mortality decline occurred in the project area, from 129 to 35 deaths per 1000 live births, a much greater decline than in the province or in the country "(p. 171)	"The United Nations Development Programme ranks Cambodia 131st out of the 177 countries of the world in its Human Development Index. Indices of gender-related development and gender-related empowerment for Cambodia rank near the bottom of those countries for which data are available. Less than half of women older than age 15 years (46%) are literate. Thirty-eight percent of the population is younger than age 15 years, and one-third of the population is living on less than US$1 per day. Only 17% of the population has access to improved sanitation, and only 41 % has access to improved water sources." (p. 269)	Observational study
(Phillips et al., 2006)		X			Tested various forms of community-based services that were designed with the local community. These included a volunteer program." A four-celled plausibility trial was used for testing the impact of aligning community health services with the traditional social institutions that organize village life." (p. 949)	Child survival; fertility		"In summary, health policy debate focused on the relative merits of two alternative approaches to extending health care to community locations. The proponents of volunteer strategies based their arguments on evidence that vibrant social institutions could support affordable community-led services. The provision of professional nurse services was supported by evidence that volunteer programmes were not working and that there were a range of health interventions and technologies that only nurses could provide." (p. 950)	"Plausibility design" (controlled, non-randomized four-cell design)

Document/Article	Activity Heading				Evidence Synthesis				Type of Document
	ACCESS	DEMAND	SUPPORT	TRUST	Describe community support activity(ies).	List performance measures and outcomes	Describe relationship between support activity(ies) to performance found.	Describe important contextual factors that may have influenced support activities and/or performance	
(S. M. Rahman et al., 2010)		X	X		"From the outset of the project, staff of the implementing non-governmental organization partner (Shimantik) held community advocacy meetings to explain the project and respond to community concerns. The NGO added a new step of initiating dialogue with the parents and guardians of the new CHWs at the time of recruitment in order to explain the project and roles of the staff members." (8) "The primary reasons for CHW attrition are grouped into 4 categories: family reasons, work-related reasons, education opportunities, and actions taken by the project. Of the four categories, family-related reasons are the most important, notably opposition by families to daughters working as CHWs, and CHWs ceasing to work after marriage." (p. 9)			"CHWs were offered a remuneration package … equivalent to US$ 45 dollars. They were expected to work from eight in the morning to four in the afternoon six days a week, with newborn care visits to be made within the first day of life, even if that meant visiting the household on a holiday... The remuneration package did not include a scheduled incremental increase. Therefore, though it was comparable to that of other similar governmental job opportunities in the beginning …, after a year there was a marked difference between their salary and that of the government FWAs [Family Welfare Assistants]…. CHW attrition was identified early on as a significant constraint on the effectiveness of the intervention package." (p. 6)	Observational study

Document/Article	Activity Heading				Evidence Synthesis				Type of Document
	ACCESS	DEMAND	SUPPORT	TRUST	Describe community support activity(ies).	List performance measures and outcomes	Describe relationship between support activity(ies) to performance found.	Describe important contextual factors that may have influenced support activities and/or performance	
(Robinson & Larsen, 1990)		X	X	X	"The findings indicate that feedback and rewards from the community have a greater influence on work performance (defined as degree of perceived goal attainment on job tasks) than do those stemming from the health system. Work performance was shown to be more strongly associated with feedback factors such as the perceived value community members place on HP [Health Promoter] activities and direct observations of health improvement, than with the supervisory feedback. Work performance was also more strongly associated with the perceived reward of having influence in the community than with rewards associated with the health system, working with other HPs, written commendation and salary." (p. 1041)	Composite job performance score from scale completed by CHWs and supervisors	"[D]irect observation of changes in the community's health was the factor which most influenced the HPs' job performance. Personal contact with community members (in the form of verbal feedback) and observation of change in the community's health based on information provided in the record system were the second most important factors perceived to influence work performance." (p. 1045)	"Columbia's national primary health care program, formally established in 1975, since 1970 has trained a type of CHW, Called Health Promoters (HPs) to provide basic health services to rural communities. They have been paid members of the government health system since 1976. Training is of 3 months duration, and includes classroom, demonstration, and practical application of skills in their own community." (p. 1043)	Observational study
(Whitson, 2008)		X			"In focus group discussions, CDCs [Community Development Committees] described their roles as leaders and problem solvers. LMs [Leader Mothers] seek them out when there are families that are resistant to adopting desired CS behaviors or who refuse to take their sick children for care" (p. 26-7)	Child nutritional status, diarrhea case management and prevention, access to IMCI-trained provider, sustainability of program			Grey literature

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