LEVERAGING THE ROLE OF COMMUNITY HEALTH WORKERS WITH COMMUNITY GROUPS

Evidence on pro-equity interventions to improve immunization coverage for zero-dose children and missed communities

EVIDENCE BRIEF

Gavi
The Vaccine Alliance

Part of a series, this evidence brief presents results from a **rapid review** of the literature to understand the effectiveness and implementation considerations for selected interventions, including leveraging the role of community health workers (CHWs) in community groups, that could help achieve more equitable immunization coverage, specifically helping to increase coverage and reach zero-dose children and missed communities.

Evidence summary

What are CHW and community group collaborations?	Community health workers (CHWs) are trained health care providers who live and work in the communities they serve. CHWs typically have less formal training than other provider cadres and perform a variety of roles, including providing preventative and curative services; health promotion; counseling and psychosocial support; as well as strengthening ties between communities and the health system, and participating in data collection and record-keeping. Community groups involve community members engaged in joint efforts to improve the development, health, and well-being of their communities through organized means. Groups are generally organized on a volunteer, unpaid basis, including for their leadership. Group leaders can be considered volunteers. In some instances, CHWs and other development workers may collaborate with community groups and volunteers to expand their reach and further health promotion efforts, including those related to immunization services. They may also train and technically support members of these groups. The purpose of this review was to understand whether collaborations between CHWs and community groups/volunteers improve the reach of essential health services and to identify primary implementation considerations.	
How effective are CHW and community group collaborations in reaching zero-dose children and missed communities?	Six CHW and community group collaborations were identified across 18 articles that described their effectiveness, and the evidence is promising. Three main initiatives involved collaborations between CHWs and community groups, including: health extension workers and the Women's Development Army (WDA) in Ethiopia, community volunteers and health extension workers in the CORE Group Polio Project, and the Care Group (CG) approach in which a CG Promoter (who may be a CHW or CSO staff member) facilitates sessions with groups of volunteer mothers (and sometimes fathers and grandmothers) who learn behavior change methods to promote behavior adoption/change in a specific cohort of households. These interventions were effective at improving maternal and child health outcomes, including increasing polio vaccination coverage in one instance, although many study designs involved observational and quasi-experimental designs. Interventions occurred in rural areas and most sought to address gender-related barriers by using female volunteers to increase knowledge sharing, empowerment, and improve outcomes among these groups. There were fewer studies conducted on these approaches and models from urban and conflict-affected settings.	 **PROMISING INTERVENTION**

What are the main facilitators and barriers to implementation?	**Facilitators** include implementation within **enabling environments,** such as in countries that have supportive policies, or in which communities are engaged, trusted, and enthusiastic; and providing **training, support, and supervision** to CHWs and community groups/volunteers. **Barriers** include **lack of coordination, planning, and/or support;** general **barriers to accessing or receiving health care services,** such as health care-related stigma, perception of poor-quality health care services, inaccessible health services that hinder care seeking, and lack of funding.
What are the key gaps?	**Key gaps** include **lack of implementation within conflict-affected and urban settings, few studies on theoretical underpinnings** and intervention conceptualization; and **complications with defining CHWs and community groups** involved in collaborations.

Introduction

What does leveraging community health workers (CHWs) in community groups entail?

CHWs are health care providers who live and work in the communities they serve and receive less formal education and training than other cadres of health care providers, such as nurses (1). The roles of CHWs often include preventive or curative health services, health promotion and education, data collection and record-keeping, psychosocial support, and relationship strengthening between health systems and community members (1). CHWs often serve as a critical link between facility-based health care professionals and communities (2). **Community groups can include volunteers and other members, often neighbors or groups organized around shared interests, such as issues involving health but also livelihoods, agriculture, and other development areas, who participate in organized activities that seek to engage in and advocate for community improvements.**

The goal of this rapid review was to understand how interventions have leveraged CHWs in collaboration with community groups to help reach communities in vulnerable contexts to achieve better health. Notably, not only can CHWs play a critical role in providing health services, they can also play a critical role in driving vaccination demand and fostering collective action and social accountability (3). Comprehensive reviews have been conducted on CHWs (1, 4, 5) that demonstrate the critical role they play regarding health system functionality and their significant impact on improving health. Some have advocated that integrating community roles more formally into health systems is a critical step to achieving universal health coverage (6). One way to achieve such integration is to link CHWs to communities themselves, specifically by linking CHWs to community action groups, volunteers, and/or local committees that are already striving to address community-related issues. A paper by Sacks et al. elaborates on this duality, that is, the formal roles of CHWs and the more social role of community volunteers, and describes how the two can be more integrated to achieve health equity (6). A commentary by Sarriot et al. details more on the dual social and institutional anchoring of CHWs and how this positioning could be better leveraged to harness the collective action potential of communities to improve health (7). The Care Group approach (8), which has been used to successfully expand child survival interventions across multiple countries, is one such example of pairing a community group with a CHW, or "promotor" as they were described in evaluations (9-11).

Why are CHW and community group collaborations relevant for reaching zero-dose children and missed communities?

Communities with a large prevalence of zero-dose children and missed communities often face multiple barriers to accessing and receiving health care. CHWs can fill a critical gap by providing health care services

and reaching groups with health education and promotion who otherwise would not receive them. Not only do CHWs fill a critical human resource gap, they also play a critical role in helping communities advocate for themselves by fostering collective action. However, CHWs cannot act in isolation. Collaborating with existing community groups or volunteers can help amplify the work of CHWs in communities facing vulnerabilities, such as by expanding the audiences who receive health promotion messages, changing social norms in communities, working to mobilize communities around health-related issues, or solidifying connections between the health system and community members—all of which could help improve the reach of essential health services, including immunization services, to communities in need.

Why was this evidence synthesis undertaken on CHW and community group collaborations?

The overall goal of this activity was to rapidly synthesize existing evidence on the effectiveness and implementation of interventions involving CHW and community group/volunteer collaboration to reach communities in vulnerable contexts with essential health services, including immunization services. Through a rapid review of peer-reviewed and gray literature, this work aimed to evaluate the following questions:

1. What types of pairings of community health workers (CHWs) and community groups have been used to inform health programs, including immunization programs, within communities in vulnerable contexts to achieve health-related outcomes?
2. To what extent is leveraging the role of CHWs in collaboration with community groups effective in reaching communities in vulnerable contexts, including those with high prevalence of zero-dose children, and in improving health outcomes, especially within immunization programs?
3. What are the main implementation considerations for carrying out interventions involving pairing a CHW with a community group to improve health equity, especially regarding their use to improve immunization outcomes among zero-dose children, missed communities, or otherwise under-immunized populations?

To conduct the rapid review, multiple electronic databases and gray literature sources were searched from 2010-2022. Due to the focus on equity, only articles and reports were included that focused on communities in vulnerable contexts or those that took place in settings prioritized by the Equity Reference Group (ERG) (12). Studies were included if they presented relevant results from an existing review relevant to leveraging CHWs within community groups, reported on primary research or programmatic data that compared health-related outcomes using a pre/post or multi-arm study design to understand the effectiveness of CHW/community group collaborations, or described the implementation of a CHW/community group collaboration pertaining to groups facing vulnerabilities and/or marginalization. Notably, no specific definition of "community group" was used to determine eligibility in this review; the review also used the term "community health worker" inclusively to reflect any paid or volunteer individual who received some training and

participated in health promotion or service delivery at the community-level. More information on the review methods is included in Appendix A.

Results: What is known about CHW and community group collaborations?

Effectiveness: What is known about whether CHW and community group collaborations "work"?

Overall categorization of effectiveness

To help program planners assess whether an intervention that leverages collaboration between CHWs and community groups should be considered to help improve the reach of immunization activities for zero-dose children and missed communities, a categorization scheme was used. This scheme rates interventions as potentially ineffective, inconclusive, promising, or proven. A more detailed description of this categorization can be found in the general methodology for reviews in this series [linked on the evidence map website].

CATEGORIZATION	RATIONALE
PROMISING	Six CHW and community group collaborations were identified across 18 articles that described their effectiveness, and the evidence is promising. Three main initiatives involved collaborations between CHWs and community groups, including: health extension workers and the Women's Development Army (WDA) in Ethiopia, community volunteers and health extension workers in the CORE Group Polio Project, and the Care Group Approach in which a CHW-like promotor facilitates sessions with groups of volunteer mothers who relay health promotion messages to specific households. These interventions were mostly effective at improving maternal and child health outcomes, including increasing polio, DTP1, measles, and tetanus toxoid vaccination coverage in some instances, although many study designs involved observational and quasi-experimental designs. Interventions occurred in rural areas and most sought to address gender-related barriers by using female volunteers to increase knowledge sharing, empowerment, and improve outcomes among these groups. There were fewer studies (and hence less evidence) from urban and conflict-affected settings.

Specific evidence for deriving this categorization is presented below.

What evidence exists on the effectiveness of CHW and community group collaborations within immunization?

Eighteen articles, including five review articles, provided evidence of the effectiveness of CHW and community group/volunteer collaborations across six interventions. Most found positive results regarding health-related outcomes, including increases in immunization coverage and improvements to various indicators of reproductive, maternal, newborn, and child health (RMNCH). However, some outcomes remained unchanged following intervention implementation. The collaborations centered on three major types of initiatives—use of the Women's Development Army (WDA) in Ethiopia (13-15), use of community volunteers and WDA members in the CORE Group Polio Project (CGPP) (16), and the Care Group model used across rural settings (9-11, 17-22), mostly in sub-Saharan Africa. Below we elaborate more on the results of these specific interventions.

One intervention, the CORE Group Polio Project (CGPP), provided evidence that this CHW and community group collaboration was effective in increasing immunization. During five years of implementation in Ethiopia, pre/post programmatic evaluation found positive results, including a national increase in the oral polio vaccine birth dose coverage from 52% to 54% (in part due to CGPP efforts to increase tracking of pregnant women and child registers) and an increase in the proportion of fully immunization children from 25% to 44% in CGPP focus areas (59%) (16). Although this intervention was delivered in 11 countries and relied on community volunteers throughout, the program in Ethiopia leveraged the existing health system in Ethiopia consisting of health extension workers (HEW), which function similarly to CHWs, and trained community volunteers (CVs) to support and extend the reach of HEWs in hard-to-access areas inhabited by pastoralists and semi-pastoralists (16). In 2011, the government of Ethiopia created the WDA, which served a similar purpose (i.e., to extend the reach of HEWs). The CGPP utilized Development Army volunteers in some instances as it continued its work from 2012-2017 to address polio. Overall, the program trained over 12,000 volunteers. CVs were trained in social mobilization and interpersonal communication, and worked in their communities to build trust and share information about immunization (16). Notably, the CGPP program also worked in cross-border settings through the Cross-Border Initiative in the Horn of Africa, including not only in Ethiopia but in high-risk border areas within South Sudan, Kenya, Somalia, Uganda, and the Democratic Republic of the Congo (23). These initiatives made concerted efforts to increase community engagement and leverage the HEWs and the CVs who collaborated with them to improve reach to areas that were otherwise missed.

What evidence exists on the effectiveness of CHW and community group collaborations outside of immunization?

Several interventions were identified that provided evidence on the effectiveness of CHW and community group interventions within other relevant health areas, mostly concerning RMNCH. There were several evaluations of activities carried out by the WDA—mentioned above—specific to child nutrition, community-based data for decision-making, and reducing maternal and perinatal mortality (13-15). Results from these evaluations were mostly positive, although several analyses noted that strength of implementation of WDA activities was dependent upon the number of CHW and community group liaisons available in certain areas and their level of activity. For example, one cross-sectional evaluation in rural Ethiopia assessed the impact of the HEW/WDA collaboration on behaviors related to RMNCH. The evaluation found that communities with a higher WDA density (defined as having one active WDA leader per 40 households) had higher contraceptive prevalence, coverage of four or more antenatal care visits, and coverage of institutional deliveries (7, 11, and 9 percentage points higher, respectively) as compared to communities with lower WDA density (13). Another study assessed the impact of a WDA-led community-based data for decision-making (CBDDM) project and found that those with higher increases in CBDDM implementation scores had larger improvements to outcomes such as the coverage of neonatal tetanus-protected childbirths and institutional deliveries (14). An additional study assessed individual- and community-related factors related to skilled delivery service utilization and found that the WDA team performance level was not associated with this outcome, but other factors, such as distance to facility, preference for skilled attendance, urban residence, and receipt of pre-natal care, were significantly associated (15). Study conclusions include recognition of the multi-dimensional factors that drive health-seeking behaviors and noted challenges with the categorization and evaluation of WDA activities (15).

Several evaluations of the Care Group approach were included that presented evidence related to maternal and child health outcomes (9-11, 17, 18, 20-22). The Care Group model uses "promotors," which include individuals who have similar training and duties as a CHW, to facilitate participatory groups of volunteers, the "Care Group," who then take information and behavior change skills learned to promote behavior change (including demand for vaccination) in 10-15 households for which they are responsible. Two articles were identified that synthesized results across implementation of the Care Group approach across many countries, including Cambodia, Kenya, Malawi, Mozambique, and Rwanda (10, 11). These reviews found that Care Groups are effective at increasing population coverage of several child survival interventions, finding strong evidence for the reduction of childhood undernutrition and prevalence of diarrheal disease (10, 11). More specifically, one review found that Care Group areas had more than double the coverage increases of child survival interventions, as measured through high-impact coverage indicators, than non-Care Group areas ($p=0.0007$). There is also evidence that the Care Group approach reduced under five mortality, as assessed by comparing the coverage of child survival interventions and under five mortality among areas implementing Care Groups and areas implementing other, non-Care Group child survival projects, matched by country and

implementation year. The analysis found that the mean change in under five mortality rate in Care Group project areas was -4.90% as compared to -3.14% in non-Care Group project areas (ratio of 1.53, p=0.09) (10). In a gray-literature comparative analysis of 13 Care Group and 50 non-Care Group projects by Moses and Davis (2022), projects using the Care Group approach had better indicator gap closure for measles, tetanus toxoid, and DPT1 vaccination. Indicator gap closure for DPT1 and measles vaccine were 12.5 and 9.2 percentage points higher in the Care Group projects than non-Care Group projects (19).

Additionally, a cluster randomized controlled trial was conducted in Burundi called Tubaramure that assessed outcomes mostly related to child nutrition comparing intervention to control communities (20-22). Communities assigned to one of the intervention arms received a combination of household and individual food rations, improvements to health service provision, and implementation of the Care Group approach where Tubaramure promotors worked with lead mothers to convey health information and encourage health behavior change communication. The study found improvements across a variety of child health outcomes (20-22), including significant decreases in the prevalence of wasting among the most disadvantaged households (21). Notably, the study took place in Burundi following a civil war, thus this study holds relevance for conflict-affected settings.

Two other interventions were identified that were unrelated to the WDA or the Care Group model (24, 25). One of these studies found positive effects and one found no effect. One study implemented a community participatory approach in rural Nigeria to combat maternal mortality. As part of the intervention, CHWs shared knowledge and materials with community leaders regarding birth preparedness/complication readiness (BP/CR) and reached out to community association leaders regarding an emergency transport and savings fund. The study found that mean knowledge scores of pregnancy danger signs significantly increased pre/post intervention and the proportion of women that had antenatal care and a facility delivery increased significantly by 8.2% and 8.3%, respectively (24). The other study, implemented in rural Nepal, used female community health volunteers to increase community mobilization through women's groups and sought to strengthen health management committees to improve management and quality using a cluster randomized evaluation. However, because the HMCs met infrequently, the planned support was not provided while the women's group intervention was implemented as planned. Results showed no significant difference in institutional deliveries or trained health worker attendance at home deliveries comparing intervention and control sites (25).

Finally, a systematic review was included that assessed the effectiveness of CHW-based interventions in low- and middle-income countries. The review identified a specific type of intervention where CHWs facilitated community-based groups, especially women's groups, and found mostly positive effects across studies on outcomes including those related to maternal and neonatal health, including reductions in inequities comparing less to more marginalized groups (26).

What was the effectiveness of CHW and community group collaborations in specific settings and programmatic contexts?

All interventions describing effectiveness occurred in rural areas. Of the three major types of CHW and community collaborations identified (WDA in Ethiopia, CGPP, and the Care Group approach), all had strong institutional support. In Ethiopia, the WDA was government-sponsored and written into national health policy. CGPP and the Care Group approach were developed and usually supported by international non-governmental organizations, but there are instances where the Care Group approach has been used and promoted by governments, such as in Burundi (27). Notably, the WDA and Care Group model were designed to address gender-related barriers by having all female volunteers to help promote, address, and destigmatize women's health issues. Care Groups have also been used to promote changes in gender norms and gender-based violence (17). More variation in intervention typologies was observed in implementation studies, described below.

Implementation: what is known about "how" chw and community group collaborations work?

Facilitators and barriers to implementation

Twenty studies and reports presented information relevant to the implementation of CHW and community group collaborative interventions across ERG settings. Major implementation barriers and facilitators are summarized below in Table 1. In summary and regardless of ERG setting, facilitators to intervention implementation included meaningful engagement with communities and leveraging existing community networks; working to build volunteer capacity, enthusiasm, and persistence through training, supervision, and taking an empowerment-driven approach; and implementing the intervention in contexts where health services were accessible and perceived as high-quality. Barriers generally include lack of funding, overcoming existing misinformation and stigma in communities surrounding health issues, and lack of support.

TABLE 1. Facilitators and barriers to implementation by ERG setting[1]

SETTING	FACILITATORS	BARRIERS
ERG setting not specified	• Volunteer capacity, enthusiasm, and persistence (28, 29) • Engagement of community members in selection of volunteers (11); choosing trusted volunteers in the community (30) • Organization of small groups of beneficiaries who meet regularly (11, 18) • Ensure volunteers are not overburdened (e.g., <8 hrs volunteer work per week) (11) • Engage in local partnerships (25, 28, 29) • High service quality, provider competency (28) • Leverage existing strong community networks (31, 32) • Emphasize empowerment and capacity strengthening among volunteers (18, 30) • Volunteers receiving recognition and praise from communities (30)	• Misinformation/misconception of health issues in community (28) • Government and local resistance (29) • Lack of funding (31) • Too much emphasis on training; not enough on monitoring quality (30)

SETTING	FACILITATORS	BARRIERS
Remote rural	• Volunteer capacity, enthusiasm, trust and persistence (16, 25) • Leveraging existing networks (33, 34) • Community member trainings and collaboration (33, 35, 36) • Community ties and leadership (34, 37) • Using culturally relevant tools and approaches (34) • Female representation (38) • Mobile phones and equipment (39) (32) • Supportive supervision, formal training, and regular meetings to help link volunteers and CHWs (40)	• Skepticism and lack of trust (33, 39) • Volunteers' lack of political power (38) • Stigma (25, 36) • Supplies/money shortage (25, 36) • Distance to services (25, 36) • Poor network connection (34) • Poor patient/physician relationships (37) • Lack of support and collaboration (25, 40)

[1]No facilitators and barriers were identified for certain ERG settings, including urban poor, conflict-affected, and gender-related barriers.

What types of CHW and community group interventions were identified and how did type impact implementation?

Based on effectiveness and implementation studies, types of CHW and community collaboration were categorized based on their intended action.

- **Amplification:** These interventions were the most common type of CHW and community group collaboration. They sought to amplify the reach of CHWs by diffusing messages using trained community volunteers who could work closely with small numbers of households to effect change. This was often done alongside of building skills in persuasiveness and behavior change. Examples include the WDA (13-15, 33, 35, 39, 40) and Care Group model (9-11).
- **Mobilization:** These interventions sought to use CHW and community group collaborations to mobilize communities. Typically, this mobilization involved CHWs helping community group members participate in collective action to advocate for structural changes that impact health, such as sex workers mobilizing to change laws and policies related to sex work (29, 31), or women mobilizing for women's health care (25, 41) (19, 35), or advocating for health care access for people living with HIV (36).

- **Facilitation and design:** This type of CHW and community group collaboration was examined in only a few implementation studies and involved group-based interventions that were facilitated by a CHW (37, 42), such as a behavior change intervention to reduce childhood obesity among mother-child dyads. In these instances, it is unclear whether the collaborations would have existed outside of the behavior change intervention. Notably, in one case involving facilitation, CHWs worked with implementers and other groups to design the intervention using human centered design (37), thus demonstrating another potential use.

- **Connection:** In several instances, CHW and community group collaborations were used to strengthen connections between health facilities and the community, such as through health management committees or village health committees (25, 28, 38). Although these types of committees are prevalent in resource-constrained settings, the review did not identify many that specifically mentioned involving CHWs.

Implementation outcomes

Studies contained information on implementation outcomes: acceptability, adoption, costs, feasibility, and fidelity. In these studies, CHWs, local outreach workers, and health extension workers collaborated with community volunteers and groups, organizations, ministries of health, academic institutions, local stakeholders, and civil societies. Studies ranged in location and included countries such as Ethiopia, Nepal, Bangladesh, Uganda, United States, India, South Sudan, Kenya, Somalia, Nigeria, Democratic Republic of the Congo (DRC), Senegal, and Brazil. Interventions addressed health areas including immunization, COVID-19, HIV, tuberculosis, obesity, maternal, child and newborn health, contraception, sanitation, and nutrition.

Acceptability

Few studies described the acceptability of the collaborations themselves, although many described how collaborations positively impacted the acceptability of health-related behaviors and practices that collaborations were trying to impact. According to studies identified, stigma played a key role in acceptability of health care services and contributed to why CHW and community group collaborations were needed. This finding is relevant to immunization programs as vaccine hesitancy can often be driven or influenced by various types of stigma. Within identified studies, stigma surrounding HIV treatment, COVID-19 protocols and vaccines, and elements surrounding sex work were some key examples (29, 33, 36). Programs often trained volunteers on interpersonal communication, and given volunteers' existing roles in communities, worked to build trust with community members, and decrease stigma in greater communities to increase the acceptability of certain health care services (28, 29, 33, 39). The CGPP project experienced barriers towards the acceptability of COVID-19 protocols; the intervention found that utilizing community members was an important method of improving acceptability due to the existence of established trust (33). Another study looking to reduce stigma and improve acceptability of sex work in India used "social change agents" who collaborated with local stakeholders to increase community respect for sex workers, which in turn enabled the intervention workers to provide resources to sex workers (29). However, this intervention noted that while the intervention started off focused on mobilization of sex workers to enact change, the intervention

shifted more towards peer education as opposed to mobilization due to changes in funders (29). Notably, many interventions worked with existing social structures, which often included gender-barriers, and designed interventions to alleviate such barriers, such as relying on women as volunteers to help educate and empower other women regarding health and health-seeking behaviors. Other studies noted that volunteer selection was an important consideration for acceptability. Ensuring a transparent, non-biased selection method was viewed as critical for increasing intervention acceptability (40).

Feasibility

Certain studies reported their interventions proved feasible and led to improvements over time (40, 42). Studies in general noted that CHWs and community groups needed support, supervision, and training to make implementation feasible; a lack of support, funding, and coordination were noted as barriers (25, 33, 38, 39). Studies also noted that implementing interventions in contexts with supportive environments, with both community and policy support, enhanced feasibility (11, 16, 23). Several interventions also noted that inaccessible health services and perceived inferior quality of health services impeded success as CHW and community group collaborations could not easily overcome these barriers.

Sustainability

Notably, one study assessed the sustainability of implementation of the Care Group approach in Mozambique (18). The study found that five years after the program had concluded and funding had ceased, community members still reported receiving home visits and health information from Care Group Volunteers. Health indicators, including behavioral and anthropometric data, demonstrated that communities that received the intervention were continuing to make progress despite receiving no additional training or support from the program (18). Another study assessed the feasibility and effectiveness of shifting from a non-governmental organization (NGO)-facilitated Care Group approach to one led by the Ministry of Health (MOH) in Burundi (27). Overall the study found the MOH-led model was successful but that more capacity strengthening and advocacy would be needed to sustain this model more widely (27). These examples highlight the potential sustainability of the CHW and community group approach and how models can shift to more sustainable models.

Fidelity

Two interventions conducted in the United States and DRC reported positive fidelity outcomes as strategies were employed properly and successfully (28, 42). However, fidelity was low in one study conducted in Nepal that aimed to strengthen HMCs—in part due to lack of detail and specification in the intervention manual—and also because committees met infrequently and providing support was challenging (25).

Costs

Three studies described cost (11, 31, 38). A costing evaluation of the Care Group model noted low overall intervention costs, ranging from 3-8 USD per beneficiary per year (11), and found the intervention was highly cost-effective (cost per life saved ranging from 441-3,773 USD; cost per disability adjusted life year averted ranged from 15-126 USD) across implementation settings (11). In other cases, studies mention that cost was a barrier to implementation as little funding and lack of financial support hindered the ability of programs to address intended outcomes. One article, outlining a PrEP intervention in India, went further to describe how budget cuts and cost issues, while preventing the ability to provide services such as outreach and PrEP, gave workers an opportunity to connect community members to services outside PrEP (31).

Existing evidence gaps and areas for future research

This rapid review of CHW and community group collaborations found evidence these interventions can improve health, mostly through extending and amplifying the reach of CHWs. There were also some examples where these collaborations worked to mobilize communities to address structural barriers to health as well as provide health promotion, strengthen the relationship between community members and the health care system, and design/facilitate interventions delivered in a community-based group format. However, several evidence gaps were also identified. Notably, despite the vast literature on CHWs, to our knowledge no evidence has been synthesized on CHW and community group collaborations previously, hence this conceptualization is relatively novel and more theoretical development and evidence on effectiveness is needed. More specifically, gaps include:

1. **Lack of evidence in ERG settings other than rural locations:** Most studies took place in rural settings; few studies occurred in urban settings, suggesting more research is needed. Notably, many interventions strove to address gender-related barriers by involving women as community volunteers to help share knowledge with and empower other women. No studies focused on men were identified, even though men often make decisions related to care-seeking and childhood vaccination. There were also few studies conducted in conflict-affected settings, although the CCGP Cross Border Health Initiative is one example of successful implementation.

2. **Lack of clarity regarding definitions and goals of the intervention:** In many interventions, it was challenging to determine the specific goals of collaboration, especially when implemented as part of a complex, multi-faceted intervention. Additionally, roles of CHWs and community groups/volunteers were also often unclear, although the WDA and Care Group Model were exceptions that offered clear definitions and distinctions regarding roles. Few studies elaborated on motivations of volunteers who participated in such collaborations. To better understand how these collaborations "work," understanding the roles of all actors involved would be beneficial. Also, measuring and/or describing aspects of intervention implementation (e.g., intensity, fidelity, context) is important, as implementation could vary across CHWs, community groups, and/or communities, as was evident in several WDA evaluations included in this review.

3. **Challenge of distinguishing between collaborative interventions and "typical" CHW duties:** CHWs typically take on multiple roles in their communities, including spearheading efforts related to health promotion. It is possible that CHW and community group collaborations are occurring more frequently than identified in this review. Within this review, it was often challenging to distinguish what constituted a definitive collaboration versus efforts CHWs might take on a more regular basis, such as liaising with community leaders and working with other community associations to promote health on more of an ad hoc basis.

4. **Need for more rigorous evidence:** Although several identified studies involved rigorous, randomized designs, most involved observational or quasi-experimental designs, which limits inferences that can be drawn. Implementing more rigorously designed studies testing intentional CHW and community group collaborations—specifically for immunization outcomes—would help strengthen the evidence base.

Limitations

Despite undertaking a comprehensive search strategy, this synthesis involved a rapid literature review and involved a relatively new concept that is not well-defined in the literature—CHW and community group collaborations. Therefore, relevant citations could have been missed. Additionally, this review included only relevant peer-reviewed publications and gray literature sources. It is possible that more evidence exists, especially programmatic data unavailable through the sources searched. Publication bias, although not formally assessed, might be of relevance, especially if successful CHW and community collaborations are more likely to be published than unsuccessful ones. Also, despite the use of standardized forms and trained staff members, data interpretation is somewhat subjective, especially given that formal, quantitative synthesis of outcomes was infeasible. Additionally, as noted above, while the literature on CHWs is extensive, few studies have conceptualized CHW and community group collaborations. Ambiguity in how CHWs and community groups/volunteers were defined made eligibility assessments challenging.

Conclusions

How should pro-equity programming shift based on findings?

Based on findings from this review, there are several steps programs can take to initiate or tailor CHW and community group collaborations to help achieve equity.

- **Understand what CHW programs are available in target areas and what community groups exist**. If identified, discuss potential collaborations within communities using participatory means.
- **If CHW and community group collaborations are being considered, ensure an enabling environment is in place to support efforts**, such as considering any government or policy-related efforts that could be leveraged and ensuring communities are supportive as well.
- **Equity and gender balance should be considered** when selecting volunteers or community groups for inclusion in the collaboration, as perceptions of bias or unfair selection of volunteers could negatively impact trust and intervention acceptance.
- **Before implementation, ensure the purpose of the intervention is well understood**, such as using a conceptual framework or logic model. The main purpose could be to increase the reach of CHWs in communities (i.e., amplification), or mobilize communities to increase demand for rights and/or services, help facilitate or design an intervention in a group setting, or strengthen connections between health facilities and communities. Additionally, the roles of the CHW and community volunteers/groups in the collaboration should be clearly defined prior to implementation.

Based on the findings, should leveraging community health workers in community groups with an equity perspective be brought to scale?

This review found that CHW and community group collaborations are promising for reaching zero-dose children and missed communities. However, only two major initiatives were identified, and implementing these initiatives could be context specific. Promisingly, the costs of the collaborations were relatively low, although these costs were only reported in one of the main initiatives (Care Group model). To address these gaps, countries should consider developing learning agendas and conducting implementation research to better understand CHW and community group collaboration development and implementation specific to addressing inequities in immunization.

Appendix A.

How was this evidence synthesis conducted?

SEARCHING, DATA EXTRACTION, AND ANALYSIS: The review followed a general methodology for all topics in this series. In brief, the methodology involved comprehensively searching electronic databases from January 2010 through January 2023, conducting a gray literature search, screening through all citations, and developing topic-specific inclusion criteria. Data were extracted into standardized forms, and results were synthesized narratively.

INCLUSION CRITERIA: We included studies that described CHW and community group collaboration to improve the coverage of essential health services, including immunization services, among groups facing vulnerabilities and/or marginalization. For effectiveness studies, articles needed to present data pre/post or multi-arm data related to changes in essential health service coverage, including but not limited to immunization coverage, among populations facing vulnerabilities and/or marginalization. For implementation studies, we included any description of implementing an intervention that involves pairing a CHW with a community group to improve health outcomes among populations facing vulnerabilities and/or marginalization, including factors related to adoption, feasibility, acceptability, fidelity, appropriateness, implementation cost, penetration, or sustainability, particularly as related to specific hard-to-reach or hard-to-vaccinate communities. We also included systematic or scoping reviews that contained relevant information on the effectiveness or implementation of CHW and community group collaborations. Studies from high-, middle-, and low-income countries (as defined by the World Bank) were included so long as the focus was on communities in vulnerable contexts.

SEARCH RESULTS:

- 338 unique articles were identified in the published literature search.
  - 197 articles were excluded during title and abstract screening for irrelevance, leaving a total of 135 articles for the full-text review.
  - 92 articles were excluded during full text review for a total of 106 studies, including:
    - 4 existing relevant reviews (three of which pertained to effectiveness; 1 pertained to implementation)
    - 7 effectiveness studies
    - 15 articles related to implementation
- 2 potential reports were identified in the gray literature.
  - 2 reports were included as effectiveness studies
- Seven studies were identified through other means (through recommendations from experts in the field.
- In total, 33 articles and reports were included.
  - 18 effectiveness studies, including 5 reviews of existing programs
  - 20 implementation studies (6 effectiveness studies met the inclusion criteria for implementation studies as well)

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