Community-based monitoring:

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

*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 community-based monitoring, that could help achieve more equitable immunization coverage, specifically helping to increase coverage and reach zero-dose children and missed communities.*

EVIDENCE SUMMARY

What is community-based monitoring?	Community-based monitoring (CBM) involves the collection of data by service users on different aspects of health service provision. Data can be used to monitor program implementation and can identify gaps and issues. CBM typically involves collaborative processes where community members and providers come together to jointly develop and implement solutions.
How effective is CBM in monitoring interventions to reach zero-dose children and missed communities? PROMISING INTERVENTION	**Results from included studies suggest CBM interventions can be effective in improving different aspects of health service delivery (e.g., improved quality, expanded hours of delivery, reduced stock-outs).** One study used CBM to monitor immunization provision, and program results suggest CBM may have increased coverage. For these reasons, the intervention was classified as "promising." The review also found evidence that CBM can increase health care utilization and provide a path towards social accountability. Types of CBM interventions included community treatment observatories, community score cards, facility report cards, and other tools. CBM interventions most frequently occurred in remote rural settings and among certain stigmatized populations, such as people living with HIV. CBM was also implemented within fragile/ conflict-affected and urban settings. Several studies found that CBM initiatives were both impacted by and worked to address gender barriers.
What are the main facilitators and barriers to implementation?	**Facilitators** include being **community-led** and **responsive to community needs**, having **supportive policies**, **enabling health systems**, mechanisms for sharing **feedback,** working **collaboratively**, and securing **provider buy-in.**

	Barriers include challenges defining **communities** and determining **representativeness, lack of responsiveness from health systems, and barriers to community participation,** including geographic **inaccessibility**, **existing norms** and **social hierarchies that constrain CBM implementation**.
What are the key gaps?	Key gaps include a lack of understanding about which **CBM models are more effective** and for whom, lack of examples of **specific CBM tools**, lack of **rigorous evaluations**, and lack of **operational understanding** of how CBM can be used to **measure and monitor health programs**.

INTRODUCTION

What is community-based monitoring?

Communities can play a pivotal role in improving health and health care systems, but their insights and feedback are often not sought or are undervalued. Community-based monitoring (CBM) is one way that citizens and communities can make their voices heard in the health sector. **CBM refers to service-users assessing the effectiveness, availability, accessibility, acceptability, equity, quality, and impact of health programs and services which they receive** (1). CBM includes any type of monitoring led by communities; however, a key principle of CBM is that communities decide what metrics to monitor and act upon once the data are collected (1, 2). In CBM, service-users and communities gather quantitative and qualitative data and observations to assess the services they receive and can then use this information to advocate for change and hold service-providers and decision-makers accountable (1, 2). Therefore, community-based monitoring is closely linked with social accountability, which can be defined as a participatory process where citizens, as end-users of health services, effect change through collective influence and action (3). The focus of this evidence brief is on how communities _monitor_ health services they receive and the outcomes/uses of monitoring data, including using data for advocacy or increasing service reach.

Models of CBM can take different forms and types. Examples include community scorecards used in health facilities, patient satisfaction surveys, complaint and grievance mechanisms, treatment observatories and social audits, and monitoring and responding to human rights violations. Many models use pre-determined tools which include quantitative and qualitative indicators and data.

Why is community-based monitoring relevant for reaching zero-dose children and missed communities?

Communities in vulnerable contexts often face a myriad of challenges accessing and receiving health care services. These groups may encounter issues such as stigma from health care providers, drug stock outs, inaccessible care, or receipt of inferior care. Often there is no recourse to report or address these issues due to existing dynamics such as power imbalances, fear of retribution, or cultural norms (6). **CBM works to directly address these inequities by empowering communities to document aspects of the health care they receive and work with health facilities, health systems, and other stakeholders to effect change**. Therefore, CBM holds particular relevance for helping monitor the quality and extent of health care services, including immunization services, received by zero-dose children and missed communities.

Why was this rapid evidence synthesis on community-based monitoring undertaken?

The overall goal of this activity was to rapidly synthesize existing evidence on the effectiveness and implementation of community-based monitoring to monitor and improve implementation of essential health services, including immunization services, within communities in vulnerable contexts. Through a rapid review of peer-reviewed and gray literature, this work aimed to evaluate the following questions:

1. Are CBM interventions among communities facing vulnerabilities, such as being marginalized or underserved, effective at monitoring health-based outcomes?
2. What types of CBM activities are occurring among communities facing vulnerabilities regarding health, and which models and/or key components work better than others to monitor health-related outcomes, including immunization outcomes?
3. What are the implementation considerations for CBM activities among communities facing vulnerabilities?

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) due to the high prevalence of zero-dose children and missed communities found within them (7). Studies from low-, middle-, and high-income countries were included. Studies were included if they presented relevant results from an existing systematic or scoping review on CBM, 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 CBM, or described the implementation of a CBM intervention pertaining to a group facing vulnerabilities and/or marginalization. More information on the review methods is included in Appendix A.

RESULTS: What is known about community-based monitoring?

Effectiveness: What is known about whether community-based monitoring "works"?

We identified 30 eligible studies, including 4 reviews, 12 studies/reports assessing effectiveness and implementation, and 14 studies/reports assessing implementation only. Studies were implemented across ERG settings, including in remote rural areas, urban areas, fragile/conflict settings, and areas with existing gender barriers. CBM was also used to monitor health service delivery among stigmatized populations, such as indigenous populations and people living with HIV. **Studies found mostly positive results as data gathered through CBM led to improvements in health service delivery.** No studies discussed impact on health outcomes. One study focused on using a community monitoring tool to document immunizations received by infants and found evidence suggesting the tool might have led to increased coverage. Studies mostly focused on CBM as a *process* and not merely a mechanism to collect data and monitor program implementation. CBM processes typically emphasized the identification and training of community members to participate in the monitoring, community and provider participation in the selection of indicators, and joint action planning and problem solving among community members and providers. **Many studies reported that data collected through CBM was used to inform decision-making and led to improvements in the delivery of health care services.**

Overall categorization of effectiveness

To help program planners assess whether an intervention, such as CBM, should be considered for monitoring to help improve implementation of immunization activities for zero-dose children and missed communities, a categorization scheme was used to rate 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 INTERVENTION	Studies generally found CBM interventions to be effective in improving some aspects of health service delivery (e.g., improved quality, expanded hours of delivery, reduced stock-outs). One study used CBM to monitor immunization provision, and program results suggest CBM may have increased coverage. In addition to effecting change in delivery of health care services, qualitative data from many studies suggest CBM interventions help promote patient and community engagement in health care, facilitate dialogue between patients/communities and providers, and provide a path for accountability, which are important outcomes in their own right and encompass aspects of "reach" and "advocate" of the IRMMA (Identify – Reach – Monitor – Measure – Advocate) framework.

Results from this rapid review identified many examples of CBM occurring across diverse settings and populations. There was a paucity of robust evaluations of CBM programs, although a rigorously evaluated community score card intervention was conducted in Malawi that demonstrated positive results. For these reasons, the intervention was classified as "promising."

CBM interventions most frequently occurred in remote rural settings and among certain stigmatized populations, including people living with HIV. There were also two instances of CBM being implemented within fragile/conflict-affected settings, and several studies took place within urban settings. Several studies suggest that CBM initiatives both were impacted by and worked to address gender barriers. Most CBM interventions emphasized how data gathered through community monitoring was used to increase accountability and effect change among populations in vulnerable contexts. |

Further details of included studies are provided below to illustrate why CBM is a promising approach to monitor and improve health service delivery within communities in vulnerable contexts.

What evidence has been synthesized previously on the effectiveness of community-based monitoring?

Four existing reviews were identified that were relevant to CBM implementation and evaluation among groups facing vulnerabilities. The review by Baptiste et al. presented a typology of CBM interventions, which was adapted and used to classify identified interventions in this rapid review and is described below (6).

Table 1. CBM typology developed by Baptiste et al., 2020 (6):

CBM Type	Definition
HEALTH FACILITY COMMITTEES	A joint committee of community and HCPs collects recipient of care grievances and works with HCPs to address them
CITIZEN REPORT CARDS	Metrics for a 'report card' are identified through phone interviews and surveys with recipients of care. A health care facility's performance is compared to a national standard or a similar facility at externally facilitated meetings of recipients of care and health care providers.
COMMUNITY SCORE CARDS	Communities and health care providers develop indicators separately, then agree on a plan for corrective action
COMMUNITY TREATMENT/HEALTH OBSERVATORIES	Systematic, regular collection of quantitative and qualitative data by community and recipients of care networks using indicators identified through a pilot or baseline assessment
OTHER (E.G., SOCIAL AUDIT)	An "other category" was used for CBM strategies identified that did not conform to the other typologies

The Baptiste et al. review found that CBM is an "evolving" field, noting various types of CBM that have been implemented with mostly positive results regarding improvements to facility-based service delivery, health system-wide changes, and changes to health outcomes. The review found that the most successful interventions were the ones led by communities themselves that conducted consistent and routine collection and analysis of community-generated data, and included advocacy and education components to ensure data were used to effect change (6).

While the Baptiste et al. review focused on CBM initiatives, Molyneux et al. focused on community accountability at peripheral health facilities (8) and McCoy et al. focused on health facility committees in low- and middle-income countries (9). These reviews were included because they describe CBM as a critical means to providing data and documentation used to inform decisions within facilities to improve health care services. A common thread between these reviews is the emphasis on contexts in which the interventions were implemented and critical components affecting functionality, including health systems and facilities, communities, CBM processes and interactions, and the sociopolitical context.

A final review by Gullo et al. (2016) was included as it summarized eight projects across five countries that used the CARE (Cooperative for Assistance and Relief Everywhere, Inc.) community score card (CSC) approach to improve social accountability for health outcomes. The CSC approach uses CBM as part of a phased process involving community members and providers identifying issues, developing priority indicators to track and a scoring system, and collaborative planning and monitoring. The review found that programs typically showed positive results related to health care quality, access, availability, and use. Overall, the review also found that CSC leads to improvements in relationships between providers and communities (10).

What recent primary research studies have been conducted on the effectiveness of community-based monitoring?

Nine studies evaluated the effectiveness of CBM activities on health-related outcomes using quantitative means (11-19), and three additional studies presented qualitative results pertaining to effectiveness (20-22). **Although most studies lacked rigorous designs (most were pre/post evaluations with no comparison group), almost all demonstrated improvements in some aspect of health service delivery,** including quality and acceptability (e.g., improved client satisfaction), availability (e.g., less drug stock-outs, more testing), access (e.g., more community health worker visits), and accommodation (e.g., expanded hours) following implementation of CBM. Notably, one study found evidence suggesting CBM led to improvements in vaccination coverage. Studies did not measure the impact of CBM on disease incidence. Some studies also demonstrated increased demand for health care services (e.g., increased community awareness and engagement), thus leading to increased health care utilization. Many studies also described the role of CBM in generating social accountability and advocacy. Descriptions of the effectiveness studies and their results are presented in Appendix B.

Effectiveness by type of CBM initiative

Studies evaluating the effectiveness of CBM primarily involved the approaches listed below.

- **Community Treatment Observatories (CTOs):** Within a regional CTO in West Africa, people living with HIV collected monthly data on HIV service delivery at health care facilities across 11 countries. Results indicate that people living with HIV experienced gaps in care, including gaps in linkage to care for members of key populations, and that others were not receiving critical tests, including viral load tests, that help monitor treatment effectiveness. Results led to changes in service provision and changes in national health policy (12, 15). A similar CTO has also been conducted in eastern and southern Africa and the Caribbean (15).
- **Community Score Cards (CSC):** CSCs, most often implemented using the CARE approach, were carried out across a variety of settings, most often in remote rural settings, and involved various areas of health care, such as reproductive and maternal health. These interventions involved a phased approach involving bringing together providers and community members to define priority indicators, develop ways to track indicators, share data, and develop solutions jointly. Results, including from a cluster randomized controlled trial (RCT), generally found improvements in service delivery, patient satisfaction, citizen empowerment, and improved relationships between providers and communities (11, 13, 14, 16, 19).
- **Community Action for Health (CAH) initiatives**. In India, CAH initiatives were mandated by national and state health policies and involved CBM among other activities. State and substate activities differed and were facilitated by local non-governmental organizations. In examples identified, CBM was facilitated by marginalized groups or village health committees, through methods included developing facility report cards, and sharing results at public dialogues known as *jan sunwais*, resulting in improvements to quality of health service delivery (18).
- **Other monitoring tools and approaches**, including a simple tool for community monitoring of vaccinations in India and Timor-Leste (17) and a rights-based monitoring tool in Peru (22), found improvements to vaccine coverage and service delivery, respectively.

Given the different CBM methods and contexts in which they were carried out, it is infeasible to understand which models worked "better" than others. The CTO model emphasized routine and systematic data collection using standardize forms. CTOs focused on collecting data that was not captured through existing systems, such as the health management information system, and included collecting information on issues such as drug stock-outs and turn-around times for receiving lab results. Data were then analyzed using appropriate methods so results could inform advocacy efforts. The CSC approach tended to emphasize relationship building between providers and communities and the joint action planning and problem-solving to effect change. The CAH initiatives in India were unique in that they were mandated by national policy, but local implementation varied. Other CBM approaches were identified that did not fit into the main categories, such as the CBM tool for immunization used in India and Timor-Leste (17). Another approach involved a joint initiative by a state government and indigenous tribal authorities in Alaska, United States to develop and monitor progress for the "Healthy Alaskans 2020" policy through development of two scorecards, one for the general population and one specific to the indigenous populations (23).

Effectiveness within ERG settings

Three additional studies provided qualitative results pertaining to the effectiveness of CBM (19-22). Two of these studies reported on implementation of CSC approaches in fragile/conflict-affected setting (20, 21), including in Afghanistan and the Democratic Republic of Congo (DRC). Both found encouraging results. In Afghanistan, results suggest CBM led to productive dialogues between providers and community members, resource mobilization, and joint problem-solving at the local level. Study findings also noted increased participation and engagement of female community members over the course of the intervention, suggesting CBM's potential to address gender barriers (20). Similarly, results from the DRC suggest CBM, also using the CSC approach, led to improvements in quality of health, access to services, health care worker (HCW) performance, and other outcomes through joint action and collaboration between providers and health facility committees (21). The authors noted that having a weak state presence could have helped foster the feasibility of developing locally led solutions offered by CBM (21). Another study described the implementation and qualitative findings from an intervention in a remote region of Peru involving citizen monitoring of rights-based violations (i.e., "everyday injustices") among marginalized Quechua-speaking women experienced when seeking health care services. The study notes that despite challenges, the intervention was successful in facilitating improvements within health facilities and empowering the women who served as monitors (e.g., increased leadership, confidence).

What evidence exists on the effectiveness of community-based monitoring to monitor immunization services directed toward zero-dose children or missed communities?

The CBM tool for immunization, called "My Village is My Home" (MVMH) in India and "Uma Imunizasaun" (UI) in Timor-Leste, was originally developed for use by community health workers and community volunteers to write down all birthdates, names, and dates of immunizations received by children in the communities. Although no evaluations were initially planned, comparisons made between coverage before and after implementing the CBM tool suggest coverage increased, and qualitative findings suggest the tool was useful for finding and following-up with under- and

unimmunized children (17, 24). For example, in Uttar Pradesh, rates of unimmunized children decreased from 12.6% to 6.7% following introduction of the tool (17).

Notably, several studies also had a clear focus on marginalized communities, which could serve as relevant examples for how to use CBM to monitor programs specifically designed to identify and reach zero-dose children and missed communities. These interventions trained and utilized members of the marginalized community to conduct the CBM and take part in advocacy efforts to ensure data were used to effect change. Populations included those living with a certain health condition, such as HIV (12, 15, 16), those who are part of indigenous communities (22), and those living in an ERG-priority area (11, 13, 14, 17-21).

IMPLEMENTATION: What is known about "how" community-based monitoring works?

Facilitators and barriers across ERG settings

Twenty-three studies and reports presented information relevant to the implementation of community-based monitoring interventions across ERG settings (7, 14, 15, 17-36). Major facilitators and barriers to implementation are summarized below in Table 2.

Table 2. Facilitators and barriers to implementation by ERG setting

	Facilitators	Barriers
ERG setting not specified	- Political will (6) - Supportive national policies, especially those geared toward achieving universal health coverage (18, 19, 29) - Buy-in from health care providers and local stakeholders (6, 27) - Initiatives that are "community-led, collaborative, and involve continuous and systematic monitoring efforts" (6) - Incorporate community capacity building, education, and advocacy (6) - Implement within enabling health system that is responsive to community feedback (6, 27) - Use communication technology as accessible way to monitor (33) - Use of local facilitators (27)	- Requires financial resources and technical expertise (6) - Lack of functionality of CBM mechanisms (8) - Lack of responsiveness from health facilities or health systems to changes suggested by CBM data (8, 33) - Complexities in defining "communities" and how to determine representativeness (8) - Costs of providing per diems and transportation costs for community volunteers (17)
Remote rural	Community mobilization around health rights and support from health facilities/systems (18)	- Time and resource constraints (30) - Potential tension between government goals of CBM (e.g., data generation)

	• In settings where providers and communities have close relationships and are uncomfortable using CBM for fear of disturbing the relationship, a trusted actor external to the community might be needed to facilitate the CBM process (25) • Responsiveness and functionality of health system (18) • Changes needed are within the locus of control of facilities or local administrators (18)	versus communities (e.g., as a means to action) (18) • Varied health system responsiveness to issues identified (10) • Challenges ensuring the inclusion of marginalized groups in CBM activities (10) • Limited ability to travel to health facilities for committee meetings due to distance/cost (14) • Existing social hierarchies, resource and capacity limitations in public health services, community skepticism, fragmented and unclear administrative accountability (35) • Conflicts between provider and user perspectives (30) • Lack of monitoring of CBM (30)
Urban poor	• Ensure CBM processes and tools are tailored to monitor needs and barriers faced by each individual or group facing vulnerabilities and/or marginalization (28) • Ensure CBM tools can assess rights-based dimensions of care (access, availability, quality, acceptability, and affordability) (28)	• Community bias against health care services being prioritized, such as family planning, leading to low participation and contributing to provider bias (19)
Fragile and conflict-afflicted	• Align CBM initiative with priorities of Ministry of Health (20) • Organization(s) implementing CBM need skills in facilitating participatory processes (20) • Ensure transparent and representative processes for selecting community participants (20, 21) • Local adaptation of CBM initiatives to ensure legitimacy/sustainability (20)	• Security concerns regarding attacks on health facilities and providers; ensuring community members participating in CBM are not at heightened risk of attack (20) • Limited access to facilities (e.g., lack of transportation, traveling far distances for CBM meetings) for some community members (20)
Gender-related barriers	• Design CBM processes that foster greater female participation and engagement in health facilities (20, 22)	• Pre-existing restrictive gender norms applicable to rural settings in India (34)

	● Promote mixed-gender groups within CBM and support women to seek out leadership positions within CBM-related groups or committees (34)	
Other marginalized populations	● Use appropriate data collection methods and data analysis plan (15) ● Embed CBM initiatives, specifically CTOs, in existing structure or organization; CTOs should not be standalone projects (15) ● Invest in knowledge, skill, and capacity building of community members involved in CBM initiatives (15) ● Develop risk mitigation plan and work towards financial sustainability (15)	● Difficult to develop CBM systems that account for complex events; focus on achieving quantitative targets can hinder community ownership (26) ● Maintaining data quality and availability (e.g., difficulties tracking indicators longitudinally), slow progress on indicators, hard to track given topics (chronic disease and social determinants of health), small staff and staff turnover (23)

Implementation outcomes

Expanding on the barriers and facilitators listed above, below is a summary of specific implementation considerations related to acceptability, feasibility, appropriateness, cost, and sustainability. **Overall, CBM was feasible to implement and acceptable to both community members and providers.** In some instances, community participation in CBM activities was limited or low. Providers often expressed some reluctance in CBM participation, but this reluctance dissipated and became appreciation. Developing simple, standardized data collection tools that were accessible and understandable was important. Having supportive and responsive health systems was critical for success. Costs of CBM implementation varied, depending on type of CBM (CTO vs. CSC) and context. Strategies for sustainability involved securing financial and technical resources, being collaborative, and nesting CBM within existing, sustainable structures.

Acceptability

Studies reported that CBM was acceptable to both community members and providers. Community members were often enthusiastic about CBM activities, perceiving them as useful and empowering. Providers were often initially reluctant about participating in the CBM processes, worried that the monitoring would be burdensome (22) or that changes made would increase their workload (20); however, this reluctance diminished and was replaced with acceptance/appreciation once providers recognized the benefits CBM brought. In one instance, providers felt that the CBM initiative was complementary to ongoing monitoring at the facilities (30) and another study recognized that CBM often helped report on issues facing service provision that were not typically reported, resulting in more comprehensive monitoring (29). Some interventions mentioned that participation in CBM activities was low (13, 14), or that geographic inaccessibility limited community participation (20). The CTOs for people living with HIV were viewed as valuable as they helped provide data-informed evidence on issues affecting key populations and provided a confidential platform where people could voice their concerns without fear of reprisal (31).

Feasibility

Studies demonstrated feasibility in implementing CBM activities, even in remote areas and in fragile/conflict-affected settings. In several instances, having to travel long distances to health facilities to participate in CBM was a barrier for some community members (14, 20). Notably, studies seldom reported on motivations for why community members decided to participate in CBM; in some cases community members were compensated for their role and in other cases it was unclear. Studies commonly found that CBM strengthened partnerships between community members and providers and led to joint problem solving. Having supportive policies in place, particularly policies focused on achieving universal health care and the full participation of communities in their health, was seen as essential to CBM's success. For example, India integrated CBM into national policy through the launch of the Rural Health Mission in 2005 (29). At the national level, initiatives included creation of a new cadre of social health activities, village health, sanitation and nutrition committees, and patient welfare committees. At the state and substate levels, CBM activities are facilitated by local CSO and NGOs (12, 20). However, despite the supportive policy environments, studies noted that existing social hierarchies, lack of clarity regarding administrative accountability, and constrained resources often hindered CBM activities (34, 35). In addition to having supportive policies, CBM initiatives stressed the importance of having responsive health systems and pathways through which data generated through CBM could be shared and could lead to systemic or facility change.

Appropriateness

The appropriateness, or perceived fit of CBM, was demonstrated across a range of settings. In only one instance, CBM was viewed as not appropriate as it undermined community ownership by trying to quantify and monitor complex processes that made community members conducting the monitoring feel disempowered and monitored themselves (26). In several instances, studies took steps to ensure data collection tools were accessible to respondents, such as by using digital tools, SMS surveys, and other methods involving communication technology (33). Some studies stressed the importance of having local facilitators for CBM activities (18, 27, 29, 30), and qualitative findings from one study in rural Tajikistan noted that external facilitators would play a key role in mediating conversations between community members and providers (25).

Costs

Three studies discussed the cost of implementing CBM activities, including the cost of implementing CSC initiatives (20, 36) and CTOs (15). For costs of implementing community score card initiatives, one study in Afghanistan estimated a cost of 300-500 USD per facility per year for operating a CSC intervention, exclusive of training and transportation costs (such as would be incurred by community members having to travel long distances to the clinic to participate in CBM activities) (20). A CSC initiative in rural Uganda found that the average cost of implementing the CSC within each subcounty of the district was 1,998 USD per scoring round. Two scenarios were assessed to estimate potential costs of scale-up: one involved inputs from the research team implementing the CSC pilot and the second involved cost inputs from subcounty coordinators and District Health Teams implementing the CSC pilot. The estimated total annual costs of scaling-up to the entire rural district (comprising 406 villages and approximately 220,000 residents) for the two scenarios was 76,021 USD and 28,465 USD, respectively (36). Main drivers of cost were transportation, technical support to local implementers, and coordination/supervision costs (36).

Several reports and studies discussed sustainability of CBM initiatives. The CTO model for people living with HIV cautioned against setting up CBM as a standalone project and instead suggested embedding the initiative within an existing network, organization, or structure (such as a national network of people living with HIV in this case) (15). Notably, the CTO model for monitoring data related to HIV service provision has demonstrated success in expanding to other regions (31). Other programs, specifically the CAH initiatives in India, stressed the importance of financial support, policy support, and supporting implementing CSOs and NGOs to sustain CBM activities (29). Community score card initiatives emphasized the need to gradually institutionalize the CSC processes into facilities and health systems, invest in local capacity strengthening and training, and integrate CBM initiatives into existing policies (30). At least one study maintained local rights-based CBM sustainability following the initial program period that was supported by international NGOs (22).

Existing evidence gaps and areas for future research

This rapid review of CBM interventions for health-related programs among communities facing vulnerabilities and/or marginalization found evidence that data generated through CBM was used to successfully monitor service provision. This in turn led to evidence-informed decision-making, often made jointly between providers and community members, that contributed to positive changes in service delivery. However, important gaps were also identified:

- **Lack of evidence on specific tools:** Studies typically provided few details on the data collection tools and methods used, with some exceptions (15, 17, 28, 33).
- **Lack of understanding on which models work better:** Based on differences across contexts and outcomes in which CBM was implemented, it was infeasible to tell which models work better than others, and the answer might be context dependent. More implementation research could help understand how to operationalize CBM processes and identify best practices.
- **Lack of studies on use of data to inform <u>monitoring and measuring</u> of health programs:** Most CBM activities identified served multiple purposes. CBM was used to increase community engagement and awareness of health services offered, which could lead to demand increases. CBM was also used as a monitoring tool, specifically to monitor outcomes and aspects of service delivery not covered by other types of monitoring. Often these data were used as part of an advocacy agenda to demand better access to and quality of health services. CBM was also used to strengthen relationships between providers and communities and increase social accountability. The overlap in purpose and involvement of multiple components made it challenging to fully understand how CBM can be utilized to improve monitoring and measuring.
- **Lack of rigorous studies and impact on health:** Few rigorous evaluations of CBM were identified. Often, programs used data generated from the CBM program to show progress and change pre- to post-implementation. Developing more rigorous studies could help solidify the evidence base for CBM and help understand pathways through which CBM affects change.

Limitations

Despite undertaking a comprehensive search strategy, this synthesis involved a rapid literature review; relevant citations could have been missed. Additionally, this review included only relevant peer-

reviewed publications and available 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 CBM interventions 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, it was often challenging to tease out CBM initiatives focused on monitoring versus those focused on advocacy as often the intervention served both purposes.

Conclusions

How to potentially shift pro-equity programming based on findings?

Based on findings from this review, there are several steps programs can take to tailor CBM interventions to help achieve equity.

- **Ensure CBM activities are led by affected communities**, including communities with a high prevalence of zero-dose children and missed communities, and address indicators prioritized by both programs and communities.
- **Provide CBM tools that are user-friendly and generate data that are easy to share and analyze**, such as digital tools like SMS surveys.
- **Present and analyze data** generated from CBM in ways that maximize its utility to inform decision-making and advocate for change.
- **Understand current gaps** in monitoring data and how CBM could be used to fill those gaps.
- **Garner buy-in from providers, facilities, and health systems** for CBM and ensure pathways exist for sharing feedback and effecting change.
- **Assess whether existing policies at the national or sub-national level are supportive of CBM**, including policies geared toward increasing community participation in health and achieving universal health care coverage.
- **Develop conceptual models** for understanding how CBM can work to improve immunization services for zero-dose children and missed communities, which might involve multiple components of the IRMMA framework, including increasing demand for health services ("reach"), monitoring and measuring program delivery ("monitor and measure"), and advocating for change ("advocate").

Based on the findings, should community-based interventions with an equity perspective be brought to scale?

This review found that CBM interventions are promising for use in monitoring and measuring program delivery and could be effective at improving outcomes among zero-dose children and missed communities. For scaling up CBM initiatives, countries should consider developing learning agendas and conducting implementation research to better understand how CBM could be utilized within certain contexts. A phased, targeted approach might be necessary. Considerations for bringing such interventions to scale include: (1) potential costs of the intervention; (2) availability of local organizations to facilitate and lead CBM initiatives; (3) considerations of how CBM could be embedded in existing structures and programs, and (4) adapting successful CBM models that have been used in similar contexts.

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 November 2022, 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 involved CBM among a community, population, or geographic area described as vulnerable, marginalized, underserved, or otherwise disadvantaged. CBM interventions could take place in either high-, middle-, or low-income countries (as defined by the World Bank) as long as the CBM involved and is set-up to benefit members of marginalized, vulnerable, or otherwise disadvantaged groups in some health-related aspect. Interventions had to include an outcome of interest, including measurement and/or monitoring results of health outcomes or service delivery. We included both effectiveness studies (defined as using a multi-arm design or using pre/post or time series data to evaluate an intervention involving CBM) and implementation studies (defined as any study containing descriptive or comparative data relevant to implementation outcomes).

SEARCH RESULTS:

- 1,437 articles were identified in the published literature search.
    - 1,294 articles were excluded during the title and abstract screening.
    - Of the remaining 143 retained for the full text screening, 115 were excluded, leaving 28 eligible studies, including:
        - 4 existing relevant reviews
        - 11 effectiveness studies (some effectiveness studies also contained information on implementation)
        - 13 articles related solely to implementation
- 4 potential reports were identified in the gray literature.
    - 2 reports were eligible and included (one as effectiveness and implementation; one as implementation only)
- In total, 30 articles and reports were included.
    - 4 existing reviews
    - 12 effectiveness studies (9 with quantitative results and 3 with qualitative results)
    - 14 implementation studies (14 implementation only; most effectiveness studies also presented implementation-related outcomes)

Appendix B. Categorization of CBM interventions measuring effectiveness

Program Name (citation) Study design	Location(s) (ERG setting or priority population)	CBM type and health area	Activities	Summary of results
Community Treatment Observatory (CTO) (ITPC, 2020) Pre/post evaluation	11 countries in West Africa *(people living with HIV)*	Community treatment observatory HIV	Qualitative and quantitative data routinely collected from service users and facilities. Used to identify priorities and advocacy areas.	Monitoring data demonstrated service improvements (e.g., reduced frequency of drug stock-outs, more viral load testing, increase in quality-of-care rating)
Community Treatment Observatory (Ellie et al., 2020) Pre/post evaluation	Sierra Leone *(people living with HIV)*	Community treatment observatory HIV	Volunteers from support groups of people living with HIV were selected and trained to monitor data monthly from select health facilities using existing tools.	Significant increases in HIV testing and anti-retroviral therapy uptake among key populations comparing baseline to one year follow-up.
CARE Community Score Card (CSC) (Hanifi et al, 2020) Quasi-experimental	Bangladesh *(rural)*	Community score card Primary health care	Community groups and providers from community clinics (CC) identified issues, decided on priority indicators and targets. An action plan was developed, implemented, and progress was monitored.	Increase in service utilization pre-to-post intervention, comparing intervention to control communities; improved awareness of services offered at CC and increased utilization.

CARE Community Score Card (Gullo et al, 2017) Cluster RCT	Malawi *(rural)*	Community score card Maternal and reproductive health	CSC involved phased approach. Community members and providers identified issues, developed priority indicators to track and scoring system; collective action planning and monitoring.	Increased community health worker (CHW) visits to pregnant women by 2% and by 6% in the post-natal period. Increased client satisfaction but overall low intervention participation.
CARE Community Scorecard [b] (Laterra et al., 2020) Pre/post evaluation	Malawi *(mothers living with HIV)*	Community score card HIV (PMTCT)	Indicators collectively developed by service users and providers; routine monitoring culminated in score sharing meeting and action planning.	Fourteen of fifteen health service indicators improved over course of project, eight significantly so. Increase in perceived quality of health services received.
Community Scorecard (Edward et al., 2020) Matched pair design	Cambodia, Guatemala, Kenya, and Zambia *(rural)*	Community score card Adult and adolescent maternal care	Multilevel intervention comprising: 1) Household-based CHW health promotion during pregnancy and early children and 2) facility and community-level community score card approach.	No significant differences in continuum of care for adults and adolescents, except in Kenya. Results showed more promise for adolescent-specific antenatal care utilization; intervention sites in Guatemala had lower continuum of care indicators than control sites.
Community Scorecard (Onyango et al., 2022) Pre/post evaluation	Kisumu, Kenya *(urban and rural)*	Community score card Provision of family planning (FP)	Assessed feasibility and impact of CSC in three public health facilities. A youth working group developed and facilitated the intervention. Standard CSC approach was followed.	Service statistics showed no increase in the percent of women receiving FP services; small improvements to service quality were documented.
Health report card	Maharashtra, India	Report Card	CBM initiative through India's National Rural Health Mission. Community members completed health	Improvement in quality of health services received;

			report cards, as facilitated through village health committees. Results were shared and discussed during *jan sunwais* (public hearings).	attitudinal shifts from health care workers.
(Shukla et al., 2011)

Pre/post evaluation | *(rural; marginalized populations)* | Primary health care | | |
| **"My Village is My Home" (MVMH)**

(Jain et al., 2015)

Pre/post evaluation | India and Timor-Leste

(ERG setting not specified) | Community monitoring tool

Immunization | Community members or community health workers trained to complete the MVMH for all infants born in the communities. | Post-hoc evaluation suggests some improvements in vaccination coverage and timeliness. |

Appendix C. Types of CBM activities being implemented

Type of CBM	Description	Settings	Populations served
Community Treatment Observatories (CTOs) (12, 15, 31)	Trained members of the target population regularly monitor pre-specified facility-based outcomes using standardized tools. Data are fed back to stakeholders, facilities, and providers to affect change.	CTOs were used across a variety of settings in west and southern Africa. Guidance from ITPC suggests the CTO model can be adapted to any setting and implemented at facility or national level.	Among identified studies, CTOs served people living with HIV, although sources note that CTOs can be used to address any health or social justice issue.
Community Score Cards (CSCs) (11, 13, 14, 16, 19-21, 30, 36)	CSC participatory processes included a planning and preparation phase, generation of community and provider score cards (e.g., identifying/prioritizing issues and setting targets), interface meetings, and implementation/monitoring. The CARE CSC is a common approach.	CSCs were used in a variety of settings, predominantly in rural areas, and covered a wide variety of health areas. Two studies implemented CSC interventions in fragile, conflict-affected settings (20, 21). CSCs focus on local-level changes and emphasize partnerships between communities and providers.	CSCs served entire geographic communities, or key priority populations being served by health facilities, such as adolescents, mothers living with HIV.
Community Action for Health (CAH) in India (18, 29, 32, 34, 35)	CAH built into national policy through the launch of the Rural Health Mission in 2005. At national level, initiatives included creation of new cadre of social health activities, village health, sanitation and nutrition committees, and patient welfare committees. CBM activities differ by state, involve facilitation by local CSOs or NGOs (18, 29).	CSOs and NGOs helped facilitate the CAH activities at the state and sub-state levels. CBM activities can involve creation of community report cards and sharing data at public dialogues, called *jan samvad*, for accountability and to affect change (18, 29).	Populations can include entire communities, including "difficult to reach" communities; efforts are made to ensure inclusivity (e.g., using simple, pictorial tools and SMS surveys). Efforts can involve gender-responsive and transformative approaches (18, 29, 34).
Other (17, 22, 23, 25, 26, 28, 33)	● Tribal state partnership in Alaska, United States (23) ● Rights-based monitoring in India, Guatemala, and Peru (22, 33) ● "Visual diary tool" for CBM in India (26) ● Citizen report card in Tajikistan (25)	Activities varied across initiatives and focused on: simple tools to monitor immunization, WASH indicators, human-rights abuses, and service provision. Other initiatives focused on partnerships between state agencies and those representing marginalized groups, such as the tribal state partnership in Alaska.	Populations included marginalized groups, including indigenous populations, sex workers, rural communities, and socioeconomically disadvantaged populations

	● "My Village is My Home" immunization monitoring (17) ● WASH score card for populations facing vulnerabilities (28)		

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Suggested citation:

FHI 360. Community-based monitoring: Evidence on pro-equity interventions to improve immunization coverage for zero-dose children and missed communities. Durham (NC): FHI 360; 2023.