

Comment

Community health workers role in combating public health emergencies: lessons from Sierra Leone

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Abstract

Sierra Leone has faced numerous devastating health crises over the past decade, including the Ebola epidemic (2014–2016), the COVID-19 pandemic (2020–2022), and the ongoing mpox outbreak declared on January 10, 2025. These emergencies have exposed the fragility of the healthcare system. Community Health Workers (CHWs) have become indispensable in addressing these challenges, particularly in underserved and remote areas. This commentary highlights the crucial role played by CHWs in bridging healthcare gaps during public health emergencies, and challenges encountered. It also proposes recommendations to enhance their impact in bolstering the Sierra Leone healthcare system. Since Sierra Leone established CHW as a health workforce in 2012, they have played vital roles in outbreak response, including contact tracing, public awareness campaigns, disease surveillance, and ensuring the continuity of care for non-emergency services. Their contributions during health crises, such as breaking disease transmission chains during the COVID-19 pandemic and promoting social mobilization during the mpox outbreak, underscore their central role in building a resilient health system. Despite their importance, CHWs face significant challenges that hinder their effectiveness. These include insufficient training opportunities, inadequate resources such as protective equipment and medical supplies, lack of formal integration into national health systems, and irregular or insufficient remuneration. Addressing these barriers is essential to optimize their impact and sustain their contributions to health system resilience. Key strategies include providing regular training and mentorship, equipping CHWs with essential resources, integrating them into national emergency response plans, and ensuring timely and equitable compensation. The role of CHWs in Sierra Leone offers critical lessons for low- and middle-income countries struggling with healthcare worker shortages. Investing in CHWs enhances emergency preparedness and also strengthens health systems, improves healthcare accessibility, and advances progress toward Sustainable Development Goal 3. Recognizing CHWs as a cornerstone of outbreak response is essential to building resilient and equitable healthcare systems worldwide.

Keywords Community health workers · Pandemics · Disease outbreak · Continuity of patient care · Delivery of healthcare · Disaster planning · Public health · Sierra Leone · Developing countries · Sustainable development goal

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1 Introduction

Sierra Leone, a nation that has faced numerous devastating health crises over the past decade, is now struggling with yet another major outbreak mpox declared on January 10, 2025. From the Ebola epidemic (2014–2016) to the COVID-19 pandemic (2020–2022) [1, 2], these emergencies have not only escalated disease burden and mortality but have also exposed the fragility of the healthcare system. They have deepened inequalities in healthcare access, widened inequities, and perpetuated a vicious cycle of poverty. In 2012, Sierra Leone launched the Community Health Workers (CHW) program to strengthen essential health services through various community-based and specialized initiatives, such as utilizing community drug distributors for neglected tropical diseases and traditional birth attendants [3]. However, soon after the program's inception, the catastrophic Ebola outbreak revealed severe weaknesses in the country's healthcare system, claiming the lives of hundreds of healthcare workers [4]. Studies highlight that the outbreak's severe toll was worsened by the shortage of trained healthcare professionals [5, 6]. This crisis emphasized the urgent need for a community-driven approach to healthcare delivery, supported by CHWs [7, 8].

Since the Ebola outbreak, CHWs have become central to supporting health crisis responses, acting as frontline responders, especially in remote or hard-to-reach areas. For instance, throughout the Ebola and COVID-19 pandemic, CHWs were key players in contact tracing and supported other response efforts such as raising public awareness, vaccine delivery, and promoting social mobilization [7]. CHW also supported in performing safe and dignified burial during the Ebola outbreak [3]. Likewise, during the 2021 outbreak of circulating vaccine-derived poliovirus type 2, CHWs contributed significantly to public education campaigns and social mobilization initiatives. In the ongoing mpox outbreak, CHWs remain indispensable, supporting efforts to enhance case detection, public awareness and driving social mobilization. This commentary highlights the crucial role played by CHWs in bridging healthcare gaps during public health emergencies, and the challenges encountered. It proposes recommendations to enhance their impact in bolstering the Sierra Leone healthcare system.

1.1 Health system challenges in emergencies

Health crises pose serious challenges to Sierra Leone's healthcare system, as demand for medical services rises sharply, intensifying the pressure on an already overstretched system [9]. The country faces a critical shortage of healthcare professionals, with only one doctor for every 10,000 people [10] far below the World Health Organization's recommended standard of one doctor per 1,000 individuals [11]. This shortage becomes increasingly severe during crises, as healthcare workers struggle to meet the surge in patient numbers, straining the efficiency and quality of care provided [12]. These challenges are especially pronounced in rural areas, where access to adequate healthcare remains a persistent issue, further exacerbating the vulnerabilities of these communities [13]. Addressing these challenges requires a multifaceted approach, including increased investment in healthcare infrastructure, workforce development, and resource allocation, focusing on improving access to care in underserved areas. Strengthening the resilience and capacity of Sierra Leone's healthcare system is essential for managing health emergencies and ensuring the delivery of quality healthcare services in both crisis and non-crisis contexts.

1.2 Role of community health workers in public health emergencies

Since Sierra Leone established CHWs as a health workforce in 2012 [3], CHWs have played crucial roles in supporting outbreak response interventions including bridging the gaps in access to healthcare services, supporting disease surveillance, enhancing public awareness, and continuity of care for non-emergency services [14]. Their participation in these activities contributed immensely to lowering the impacts of health emergencies. For instance, in the ongoing Mpox outbreak, CHW are primarily used to intensify community case detection through home visit in an activity called "operation find them all". This has resulted in increased case detection. They also support community mobilization and awareness raising on Mpox prevention and control measures. During the recent COVID-19 pandemic in Sierra Leone, CHWs were primarily used for contact tracing, and their involvement resulted in breaking the disease transmission chains. Similar measures were implemented in other LMICs that stopped the COVID-19 transmission. For instance, in South Africa, Seeman and colleagues reported utilizing CHW for testing through COVID-19 home visit programs and mass screening initiatives in many LMICs [15]. This approach is relevant for Sierra Leone, as it could enhance prompt case detection. This

is especially important given that a significant portion of the population lacks trust in the health system, partly due to the repeated outbreaks most notably the Ebola outbreak which has instilled fear and reluctance in seeking healthcare at health facilities [16]. Feroz and colleagues also reported that CHWs provided direct symptom management for COVID-19 cases with mild symptoms in several LMICs [17]. They highlighted that the roles and performance of CHWs during the COVID-19 outbreak were enhanced through the integration of digital technologies, as demonstrated in countries such as Bangladesh, Chile, Ethiopia, Kuwait, Malaysia, Peru, Portugal, Sri Lanka, Thailand, and Uganda [17]. In Sierra Leone, introducing digital technologies to support CHW activities will enhance their roles in contact tracing and case detection during health emergencies. To effectively use digital tools, stakeholders should ensure CHWs are trained and a routine refresher training is held at least once every six months. In Nigeria, a study revealed that CHWs played a vital role in identifying, isolating, and treating polio cases, significantly limiting the disease's spread [18]. In Northwestern Tanzania, a town of Kagera, CHWs reported the deaths of unknown causes in the event-based platform that resulted in the detection of Marburg virus outbreak [19]. Likewise, in Madagascar and the Democratic Republic of Congo (DRC), CHW played a crucial role in bolstering event-based surveillance by conducting contact tracing and reporting alerts during plague and Ebola outbreaks respectively [20]. Another study conducted by Mistry and colleagues in LMICs recommended the establishment of a community-centric care model, with CHWs at its core, as an effective strategy for outbreak response during the COVID-19 pandemic and in future health emergencies [21]. This framework is particularly critical for adoption in Sierra Leone, where the country faces significant challenges in responding to health emergencies amidst frequent outbreaks. During non-emergency service delivery during health crisis, CHWs have played a pivotal role in providing health interventions, including maternal and child health services and care for NCDs in hard-to-reach areas, contributing to improved health outcomes in Sierra Leone. Additionally, across four LMICs India, Nepal, Uganda, and Pakistan (70%) of patients who received care from CHWs recovered from mental health conditions [21]. This statistic highlights the vital role of CHWs in delivering essential health services and improving population health outcomes. As Sierra Leone continues to face evolving health challenges, the role of CHWs remains central to building a resilient health system capable of meeting the needs of all communities, particularly those that are underserved. Recognizing and further investing in CHWs will ensure that their impact is sustained and that they can continue to serve as a cornerstone of the country's public health efforts.

1.3 Challenges faced by CHWs during health emergencies

Despite their critical roles in healthcare delivery, CHWs face significant challenges that hinder their performance and productivity, particularly during health emergencies. The key barriers to CHW effectiveness include: insufficient knowledge, inadequate resources, and lack of recognition [22–24]. Other barriers include: conflict, state of emergency, political unrest, and cost of care and care-seeking [25]. In Sierra Leone, emergency training opportunities are often directed toward formal healthcare workers, such as nurses, doctors, and other trained cadres, with minimal or no consideration given to CHWs. This exclusion limits the capacity of CHWs to deliver efficient and effective services during health emergencies. Another major challenge is the limited availability of essential resources, including protective equipment, medical supplies, and transportation. The lack of these critical resources not only hampers CHWs' ability to perform their duties but also exposes them to increased risks of contracting diseases during outbreaks. Furthermore, irregular or insufficient remuneration further undermines CHWs' motivation and effectiveness. As CHWs are frequently required to travel extensively to provide essential healthcare services in remote and underserved areas during emergencies, inadequate compensation exacerbates their challenges and reduces their efficiency. Additionally, CHWs in Sierra Leone remain largely excluded from the formal healthcare system, a gap that persists even during health emergencies. This lack of integration limits their potential contribution to outbreak response and emergency preparedness. A key factor contributing to the exclusion of CHWs from the formal healthcare system is the government's lack of political commitment, further aggravated by insufficient financial resources allotted to the Ministry of Health for healthcare expenditures. For instance, in 2022, only 5.2% of its budget was allocated for healthcare spending [26] far below the 15% target set by the Abuja Declaration [27]. Of this 5.2%, just 20% was dedicated to public health preparedness [26]. This limited budget allocation is a critical barrier to integrating CHWs into the formal health system and the country's emergency preparedness plans. Given the country's ongoing struggle to respond effectively to health crises with a limited number of trained healthcare workers, integrating CHWs into the formal healthcare system and emergency response plans is essential. Such integration would strengthen the resilience of the health workforce and enhance Sierra Leone's capacity to respond to outbreaks and other health emergencies effectively.

2 Strategies to improve the role of CHWs in emergency response

2.1 Training and capacity building

Creating a comprehensive and targeted emergency response training program for CHWs is crucial for enhancing their effectiveness during outbreaks [28]. Each CHW should participate in training sessions tailored to strengthen their outbreak management skills, with these sessions being organized regularly ideally at least once per year to ensure all newly recruited CHWs are well-equipped. Furthermore, providing training on cross-border surveillance will be essential for enhancing CHW capacity in disease detection and reporting, thereby preventing disease transmission across neighboring countries. Additionally, offering ongoing mentorship twice a year will play a pivotal role in building the capacity of CHW to tackle health emergencies effectively. Advanced learning opportunities, such as scholarships, should also be accessible to CHWs. Such initiatives expand their technical knowledge and act as a strong source of motivation, driving higher levels of dedication and efficiency in their outbreak response activities.

2.2 Resource allocation

Equipping CHWs with essential supplies, including personal protective equipment (PPE), communication devices, and investigation tools, enabled them to operate efficiently during outbreaks. A strong monitoring system must be implemented to ensure these resources are allocated fairly and delivered promptly. Such a system will oversee the distribution process, ensuring CHWs receive the required tools and mitigating the risk of resource misuse. Supplying these vital resources will enhance CHWs' ability to fulfill their responsibilities during health crises and protect their well-being in high-risk scenarios.

2.3 Incorporation into National Health Plans

As CHWs form the foundation of Sierra Leone's outbreak response efforts, their integration into the national emergency response plans is vital and urgent. Stakeholders must ensure that CHWs are included across all levels of response planning, from national to district and health facility levels, with their specific roles clearly defined. Incorporating CHWs into these plans will enhance their performance, improve coordination, and foster a sense of belonging within the healthcare system. This integration will also ensure contributions are systematically recognized and optimized during health emergencies.

2.4 Remuneration and incentives

Given the extensive areas CHWs cover and the challenging nature of their responsibilities, ensuring timely and equitable compensation is crucial. However, Sierra Leone struggles with limited emergency preparedness funding, which creates obstacles in financing outbreak response activities. To address this, stakeholders must actively seek funding support from both local and international partners to ensure the consistent payment of incentives to CHWs. Additional funding should be allocated to CHWs operating in hard-to-reach areas, as these roles often require greater effort and resources. Providing adequate remuneration and incentives is crucial for enhancing the motivation and retention of CHWs, ultimately improving their effectiveness in responding to health emergencies.

2.5 Global implications of strengthening CHWs

The role of CHWs remains a key strategy for enhancing healthcare delivery during crises and in routine situations. This strategy does more than amplify the country's ability to effectively respond to emergencies; it also reinforces the resilience of its healthcare system against repeated, destructive outbreaks. Given CHWs' crucial role in addressing gaps in healthcare accessibility, formally integrating them into national healthcare frameworks and emergency response strategies is essential [29]. Providing CHWs with adequate training, tools, and resources is fundamental in reducing disease burdens and improving overall health conditions. Such targeted investments will optimize their effectiveness and reduce fatality

rates during health emergencies. Additionally, as Sierra Leone progresses toward achieving Sustainable Development Goal Three (SDG 3) ensuring healthy lives and promoting well-being for all by 2030 CHWs will remain vital in reaching underserved communities and fostering equitable access to health services.

Harnessing best practices, like leveraging the role of CHWs in outbreak management, case detection, contact tracing, and contact monitoring provides a compelling framework for improving health system capacity and emergency readiness and response in resource-constrained settings. Additionally, integrating digital technology tools into CHW operations, alongside equipping them with training in cross-border surveillance and basic outbreak response skills through the Field Epidemiology Training Program (FETP) model, is crucial for improving CHW effectiveness in Sierra Leone and other LMICs. To support implementing these training initiatives and digital solutions, stakeholders from the National Public Health Agencies or Institutes (NPHA/I) in LMICs should actively solicit support such as funding, logistics, and technical expertise from international organizations and donor partners. In the long term, these agencies (NPHA/I) must also advocate for their governments to allocate dedicated funding to sustain these efforts. Furthermore, LMICs, are encouraged to implement a community-focused care approach for emergency response, particularly during outbreaks. Such a model is highly valuable, as CHWs play a vital role in emergency response through their trusted relationships and proximity to the communities they serve. Finally, utilizing CHWs to provide psychosocial support for patients affected during outbreaks or other health emergencies, as demonstrated in other LMICs such as Uganda and India [21], is essential. This support plays a critical role in preventing traumatic and post-traumatic stress disorders, as well as other mental health conditions, among patients and their families during health emergencies. In Sierra Leone, the integration of CHWs into psychosocial support services is urgently needed, given the country's recent history of a prolonged civil war (1991–2002) [30], compounded by recurring outbreaks and widespread poverty.

3 Conclusion

Community Health Workers have emerged as indispensable contributors to health emergency responses in Sierra Leone. Their significant contributions during outbreaks, such as the COVID-19 pandemic, underscore their critical role in breaking disease transmission chains and improving health outcomes. However, despite their proven effectiveness, addressing challenges such as insufficient training, inadequate resources, lack of formal integration into health systems, and limited remuneration will optimize their impact and sustain their contributions to health system resilience. Recognizing CHWs as integral to outbreak management and health service delivery can help address workforce shortages and improve emergency preparedness, especially in LMICs. By investing in CHWs, countries can build more resilient health systems capable of responding to evolving health challenges while advancing progress toward universal health coverage and SDG.

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Declarations

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