

# Integrating Public Health Approaches in the Management of Maternal Health: Addressing Obstetric Complications in Sierra Leone

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## ABSTRACT

Maternal health continues to be one of the significant challenges faced by the people of Sierra Leone, driven mainly by obstetric complications and systemic healthcare limitations. Many efforts to enhance clinical care, including managing maternal health, must actively incorporate public health approaches. This narrative review assesses the role played by public health interventions in the fight against obstetric complications in Sierra Leone and recommends strategies for integrating public health and clinical care to improve maternal outcomes. We meticulously conducted an in-depth review of a wide range of peer-reviewed literature and detailed reports and established public health frameworks specifically focused on enhancing maternal health within environments marked by limited resources. The study delved into how critical public health strategies can make a real difference in the well-being of mothers. We are seeing promising improvements in maternal health by ensuring communities have the proper health education, reaching out to expectant mothers with the care they need, and ensuring they have access to professionals during childbirth. However, the journey does not stop there. The research also sheds light on the hurdles we still face, such as the gaps in our healthcare systems, the societal factors that affect health, and the pressing need to boost our health services' capacity. These findings suggest that combining public health strategies with clinical obstetric care could significantly reduce maternal mortality rates and improve health outcomes by addressing medical and social risk factors. However, none will be achievable in the long run without collaboration between healthcare practitioners, policymakers, and the community.

**Keywords:** Maternal health, public health integration, obstetric complications, Sierra Leone, maternal mortality.

## INTRODUCTION

Sierra Leone faces a significant challenge regarding the improvement of maternal health, making this a priority issue due to its extremely high maternal mortality rates, considered amongst the highest in the world. Nevertheless, with many undertakings directed towards the solution of this problem, the country still suffers from an alarming rate of death among mothers; according to the maternal mortality ratio (MMR), for the year 2020, 1,120 deaths were recorded in every 100,000 live births (Harriet, 2016). Therefore, this indicates that Sierra Leone needs to engage in pressing and continuous activities to protect the health of mothers. The major causes of maternal mortality are post-partum haemorrhage (PPH), hypertensive disorders, and sepsis, complicated further by delays in seeking care and an overarching lack of proper health infrastructure (CSIS, 2024a; Shafiq et al., 2024). From 2016 to 2019, reports on maternal death surveillance show that these direct obstetric complications were the leading causes of maternal deaths across Sierra Leone's districts (Sserwanja et al., 2022).

In light of prevailing challenges, integrating public health strategies with clinical obstetric practices is a workable methodology for improving maternal health outcomes. Public health efforts, especially those using a community-based approach to maternal health, improvement of antenatal care (ANC), and comprehensive health education, have proven effective in breaching difficult-to-alter barriers to accessing health (Ekwuazi et al., 2023; Souza et al., 2024). Mobile health (mHealth) interventions may utilize wireless mobile digital technologies for health-related information dissemination and promise improved maternal and child health in resource-limited environments such as Sierra Leone (Kamara, 2023). In addition, integrating community-based strategies with prioritized education and trained birth attendants will contribute to the decline in maternal mortality. This narrative review aims to identify successful strategies for incorporating public health approaches and clinical obstetrics to enhance the management of maternal complications in Sierra Leone (Dahab & Sakellariou, 2020).

This review will evaluate how public health initiatives, such as improved ANC services, health promotion, and maternal education, have enhanced maternal health outcomes (Saffa et al., 2024). This study will explore how health infrastructure, social determinants, and policy interventions facilitate or hinder integration (Dickson et al., 2023). Therefore, this review provides several practical recommendations specific to the Sierra Leone context for healthcare practitioners and policymakers regarding reducing maternal mortality rates. Improving maternal health within Sierra Leone is a multifaceted approach, linking clinical services to public health initiatives. At this point, successful implementation will allow these strategies to be combined to successfully address the various medical and systemic challenges and ease the maternal health crisis the country faces (Boundioa & Thiombiano, 2024; Sandvold et al., 2024).

## CURRENT OBSTETRIC CHALLENGES IN SIERRA LEONE

### Overview of Prevalent Obstetric Complications

Obstetric complications remain among the key health concerns in Sierra Leone, contributing to the high maternal mortality ratio of the country. PPH is one of the leading causes of maternal deaths, contributing to a significant proportion of maternal deaths in developing countries such as Sierra Leone (Lancaster et al., 2020). PPH most often results from uterine atony, trauma, retained placenta, and coagulation abnormalities. It is defined as blood loss over 500 mL after vaginal delivery or 1000 mL after cesarean delivery (Forbes et al., 2023). Timely intervention is critical; however, problems with the early detection of complications and a lack of essential drugs like oxytocin have made maternal risks even higher in Sierra Leone (Vousden et al., 2019).

Both eclampsia and preeclampsia raise maternal morbidity and mortality rates substantially. It is characterized by hypertension and organ damage that usually appears after 20 weeks of gestation. When left untreated, preeclampsia can proceed to eclampsia, which causes life-threatening seizures (Stitterich et al., 2021). Inadequate antenatal care leads to late diagnosis of the problems; some women seek care only when difficulties are advanced (ICAP, 2019). Its efficient management calls for constant blood pressure monitoring, timely symptom identification, and the availability of magnesium sulfate, which is not available in rural health facilities (Vousden et al., 2019).

Prolonged labour and obstructed labour are significant obstetric concerns where access to prompt medical attention is limited, especially in rural areas. The problem arises when the fetus is unable to pass through the birth canal, which results in complications such as uterine rupture or the development of an obstetric fistula (Geleto et al., 2018). Prolonged labour can also increase the risk of infection and fetal distress. Uterine rupture occurring either during obstructed labour or following a previous cesarean section calls for immediate surgical intervention to avoid maternal mortality (Gunawardena et al., 2018). However, many health facilities in Sierra Leone cannot deliver emergency obstetric care (EmOC) in such instances. Obstetric fistula, induced by obstructed labour, exacerbates the mother's health issues by causing chronic incontinence, social shame, and psychological anguish (OECD, 2023).

**Table: Major Obstetric Complications in Sierra Leone**

Complication	Prevalence in Sierra Leone	Risk Factors	Mortality Rate	Challenges in Management
Postpartum Hemorrhage (PPH)	<b>High:</b> A leading cause of maternal mortality, especially in rural areas where access to care is limited.	Anemia, uterine atony, prolonged labor, lack of skilled attendants, delay in recognizing excessive bleeding.	<b>High:</b> Responsible for 25% of maternal deaths globally, and similarly high rates in Sierra Leone.	Lack of blood transfusion services, shortage of skilled healthcare workers, delayed detection of hemorrhage.
Eclampsia	<b>Moderate:</b> Prevalence varies, but is common in rural regions with poor prenatal care.	Hypertensive disorders during pregnancy (preeclampsia), lack of regular prenatal check-ups, young or advanced maternal age, and poor nutrition.	<b>High:</b> Causes up to 20% of maternal deaths in facilities without access to emergency care.	Lack of antihypertensive medications, inadequate prenatal screening for hypertension, delayed referral for seizures.
Preeclampsia	<b>Moderate:</b> Significant in rural areas with limited prenatal care	High blood pressure, poor nutrition, first-time pregnancies, advanced maternal age, genetic predispositions.,	<b>High:</b> Mortality is closely associated with progression to eclampsia and delayed treatment	Limited prenatal screening, poor management of hypertension in pregnancy, lack of medication, and delayed referrals
Obstructed Labor	<b>High:</b> Especially prevalent in rural areas where healthcare services are not easily accessible.,	Fetal malposition, cephalopelvic disproportion, lack of antenatal care, teenage pregnancy, malnutrition, delayed access to emergency obstetric care.,	<b>High:</b> Can lead to maternal and fetal death if not managed promptly, often resulting in uterine rupture or fistula	Lack of access to surgical interventions (C-sections), insufficient transportation to health facilities, and inadequate EmOC services.
Obstetric Fistula	<b>Moderate to High:</b> Estimated high prevalence due to obstructed labor and lack of timely surgical intervention.	Prolonged and obstructed labor, lack of skilled care during delivery, early or adolescent pregnancies	<b>High morbidity:</b> Though not always fatal, fistula leads to long-term disability and social stigma	Limited availability of repair surgeries, poor access to emergency obstetric care, social stigma hindering care-seeking behavior.,Eradicating obstetric fistula in Sierra Leone
Uterine Rupture	<b>Moderate:</b> More common in regions where prolonged labor goes unmanaged.,	Prolonged labor, multiparity (many previous pregnancies), inappropriate use of uterotonic drugs, previous C-section without proper monitoring	<b>Very High:</b> Often fatal if timely surgical intervention is not provided	Inadequate access to comprehensive emergency obstetric care, and lack of surgical resources in rural facilities.

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## Barriers to Effective Clinical Management in Resource-Limited Settings

The persistent lack of essential medical supplies in Sierra Leone is still a significant barrier to adequately managing obstetric emergencies. Many health facilities lack life-saving medicines, including uterotonics for postpartum haemorrhage and magnesium sulfate for eclampsia (UNFPA Sierra Leone, 2018). In addition, blood transfusion services, which are often needed in the treatment of severe postpartum haemorrhage, are similarly inadequate since most rural clinics cannot store and administer blood (Lancaster et al., 2020). Even when emergency medications are available, healthcare providers may not be sufficiently competent to administer them safely, thereby contributing to preventable maternal deaths.

One significant obstacle is the need for more health infrastructure. Numerous rural health centres need more functional operating theatres, a reliable energy source, and essential equipment such as ultrasound machines, rendering comprehensive obstetric care unattainable (Ameh et al., 2019). As a result, it is now standard practice to refer complicated cases to far-flung clinics, which leads to fatal delays. In addition, transport issues, such as poor road conditions and the lack of ambulances, contribute to the delay in seeking emergency care (Geleto et al., 2018).

The sociocultural barriers have a significant impact on maternal outcomes. Most women in Sierra Leone often deliver from home with the help of traditional birth attendants (TBAs) instead of seeking professional medical support. This choice may result from mistrust of formal healthcare systems, financial constraints, and adverse cultural perceptions toward hospital-based deliveries. Besides, the high costs of healthcare services, even in public facilities, make such services unaffordable to most women, especially those from poor households. Addressing these issues requires community participation in changing health-seeking behaviour and specific programs to ensure better healthcare provision.

### Role of Healthcare Infrastructure, Availability of Skilled Birth Attendants, and Access to Emergency Obstetric Care

Health infrastructure plays a critical role in maternal health, yet many health facilities in Sierra Leone remain in disrepair. The 2017 Rapid Emergency Obstetric and Newborn Care (EmONC) assessment revealed that many hospitals could not perform essential obstetric treatments; only a few were well-equipped to handle complicated deliveries (UNFPA Sierra Leone, 2018). This includes a lack of functional operating rooms and blood banks in rural areas, which would help limit the number of life-saving procedures such as cesarean sections and blood transfusions (UNFPA Sierra Leone, 2018). Infrastructural improvement in healthcare thus becomes indispensable in reducing maternal mortality, especially in the most disadvantaged areas.

Skilled birth attendants (SBAs) are crucial to safe childbirth as they have been trained to handle obstetric emergencies and provide newborn care. However, SBAs still need to be available to many in Sierra Leone, and availability is far lower in rural areas than in urban regions (Utz et al., 2013). This may mean that many women, particularly those in remote communities, need more access to skilled professional care during labour and delivery. Poor working conditions, low pay, and a lack of consistent professional development activities have impeded efforts to increase the cadre of small enterprises (Ameh et al., 2019). Expanding training programs for SBAs and improving their working conditions are essential to improving maternal health outcomes.

Enhancing access to EmOC is crucial and requires immediate attention to ensure that mothers receive the necessary care when it matters most. Although remarkable progress has been made in establishing referral networks, substantial gaps still need to be addressed, especially in rural areas. Delays regarding seeking EmOC have often been attributed to issues related to a lack of transportation infrastructure, financial barriers, and families' reluctance to seek care promptly (Gunawardena et al., 2018). Enhancing the referral system by providing ambulances and improving communication among health facilities would reduce service waiting time. Also, community-based treatments, such as maternal waiting homes, have shown promising results in closing the gap between communities and hospitals in rural areas, thus allowing timely access to professional care in case of complications (OECD, 2023).

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## PUBLIC HEALTH STRATEGIES FOR MATERNAL HEALTH

Addressing maternal mortality rates and obstetric complications in Sierra Leone requires broad-based public health approaches. This section discusses three core public health measures—ANC, community-based initiatives, and family planning—appropriate for building education and awareness toward improved maternal health literacy. It also reflects on global public health successes that could be adapted to fit into Sierra Leone's context.

### **Role of Public Health Interventions: Antenatal Care, Community-Based Programs, and Family Planning**

ANC is one of the most effective strategies to reduce maternal and neonatal mortality. It provides routine check-ups and complication tracking throughout pregnancy. Consistent ANC has been associated with improved maternal outcomes due to the early detection and treatment of complications such as anaemia, hypertension, and infections (EBCOG Scientific Committee, 2015; Mbuagbaw et al., 2015). ANC offers preventive services, such as tetanus vaccination and nutrition support, which are essential for the mother and fetus's health and development (Hodin, 2016). Despite this importance, ANC services remain inaccessible in many developing countries, including Sierra Leone, with only a few women receiving the recommended minimum of four ANC visits during pregnancy (Mbuagbaw et al., 2015).

Community-based programs ensure that, besides promoting clinical care, essential maternal healthcare services are provided at the doorstep of those with limited access to health facilities. These programs are often aided by skilled community health workers (CHWs) who provide prenatal and postnatal care (PNC), including counseling and referring patients in emergencies (Lassi et al., 2016a). Community-based interventions serve best in settings where the health systems have been almost too weak to handle needs. For example, a community-based intervention in Northern Ghana significantly improved access to ANC services and helped the local people (Kassim et al., 2023) gain confidence.

Family planning services enhance maternal health by preventing unplanned pregnancies and ensuring optimal birth spacing. Contraceptives enable women to postpone pregnancy to a stage when they are better prepared physically and mentally to confront pregnancy, thus minimizing the risks of complications due to successive, consecutive pregnancies (Zephyrin et al., 2021). Family planning services must be synchronized with antenatal and post-natal health care services. Hence, women benefit from continuity in maternal health care services and lifelong reproductive health (Lassi et al., 2016a). These public health measures can address most maternal issues in Sierra Leone, whereas obstetric complications can be mitigated holistically.

### **Importance of Education and Awareness in Improving Maternal Health Literacy**

Maternal health literacy is the ability of women to access, understand, and use health information as the key ingredient for an improved maternal outcome. The higher a woman's health literacy, the more likely she is to receive ANC, follow medical recommendations, and seek professional help during delivery (Lee et al., 2018). In addition, studies have also shown that providing information to pregnant women leads to better outcomes and empowers them to make decisions about their health (Tavananezhad et al., 2022). Nevertheless, in numerous regions, cultural attitudes and a need for more accurate information may obstruct the effective utilization of maternity health services.

Structured educational initiatives instituted during ANC visits are highly effective in improving maternal health literacy. These programs equip women with the necessary information concerning pregnancy, delivery, and PNC, enabling them to better prepare for childbirth and deal with any emergencies that may come up. Research has shown that women who participate in teaching sessions during pregnancy possess heightened levels of self-efficacy, thereby giving better childbirth outcomes (AlSomali et al., 2023). These programs also help to correct misunderstandings and increase confidence levels to enable the woman to be more actively involved in her care.

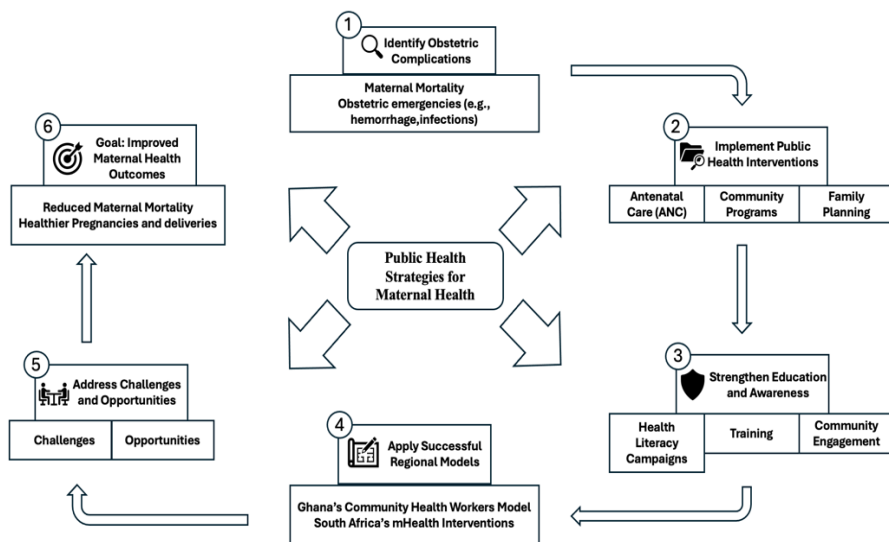
The adoption of mHealth interventions has emerged as a point of care for maternal health education, especially in rural areas. In South Africa, mobile phone technology initiatives have been instrumental in disseminating reminders for ANC visits and offering health tips via SMS, significantly increasing participation in healthcare services (Elliot Mbunge & Maureen Nokuthula Sibiya, 2024). Similarly, comparable efforts in Sierra Leone hold the potential to bridge knowledge gaps by ensuring that women in remote areas are educated about maternal health. These educational and awareness initiatives, designed to conform to the local context, would help empower women and reduce maternal mortality by stimulating proactive health-seeking behaviour.

### Examples of Successful Public Health Initiatives and Their Application in Sierra Leone

Global health initiatives provide insight into potential strategies for improved maternal health outcomes in Sierra Leone. Community-based maternity and newborn care programs throughout various African countries have significantly impacted service utilization and health equity. For example, Ethiopia's community health worker programs have raised antenatal attendance through home visits and resultant referrals, proving feasible in other resource-limited settings (Lassi et al., 2016a).

Mhealth programs have been instrumental in addressing maternal health. For instance, in South Africa, mHealth services have improved the utilization of maternal health services through appointment and health education messages sent directly to mobile phones (Elliot Mbunge & Maureen Nokuthula Sibiya, 2024). A well-implemented mHealth service in Sierra Leone could alleviate access and dissemination challenges and thus ensure timely care for pregnant women, particularly those in remote areas.

The other way around is to incorporate TBAs into professional health care. The TBAs in Northern Ghana have been trained to assist in safe deliveries, health education, and emergency referrals, thereby improving maternal outcomes (Adataro et al., 2018). The team approach capitalizes on the trust and access inherent in TBAs but maintains the standards in clinical care. These approaches can similarly be adopted in Sierra Leone through training and supporting TBAs to improve maternal health at the community level.



**Fig 1.** Flowchart illustrating critical public health strategies to improve maternal health by integrating ANC, education, community interventions, and regional models to address obstetric complications in Sierra Leone.

Public health measures to improve maternal health and well-being in resource-poor settings, such as Sierra Leone, are paramount. ANC, community-based services and family planning services are the cornerstones of a multifaceted approach to preventing obstetric complications. Education and awareness campaigns increase maternal health literacy, thus enabling them to be active participants in their care. Successful global initiatives such as community-based care models, mHealth solutions, and integration of TBAs offer valuable lessons that could be adopted to improve maternal health services in Sierra Leone. Integrating these ideas into the country's health system will be important in realizing maternal health challenges and securing steady progress.

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## INTEGRATING PUBLIC HEALTH AND CLINICAL OBSTETRICS

### Concept of Integrated Care in Maternal Health: Combining Clinical Practices with Community Health Initiatives

Integrating clinical obstetrics and public health initiatives to enhance maternal outcomes has played a significant role in the integrated care of maternal health. To comprehensively address maternal health, this method promotes a strong partnership between health facilities and community-based health services. Consequently, the integration is a continuum of care that encompasses prenatal and PNC, as well as preventive and curative strategies to reduce the excessively high maternal mortality rates in resource-poor settings, such as Sierra Leone.

The foundation of integrated care ensures that pregnant women and mothers have access to competent clinical therapies and preventive public health initiatives. The primary objective of clinical treatment is to provide timely and appropriate intervention to address obstetric complications, including obstructed labour and bleeding. Concurrently, public health measures would encompass nutritional insecurity, access to care, and harmful cultural practices. Research indicates that midwives and CHWs are essential components of the primary care network, as they facilitate the connection of health systems to the most marginalized communities and expand access to fundamental care, enhancing the outcomes of both mothers and newborns (van der Werf et al., 2022).

Telehealth is now widely recognized as a critical comprehensive maternal health care component. It enables the timely identification of obstetric issues, particularly in rural areas where medical services are insufficient, by providing access to clinical expertise from a distance (DeNicola et al., 2020). Home visits, health education, and preventive services are community-based strategies that improve maternal care by increasing awareness, assuring prenatal attendance, and increasing the number of facility-based deliveries (Lassi et al., 2016).

### Case Studies or Examples of Successful Integration Models

Integrating maternal health care has been successful in numerous countries, providing Sierra Leone with valuable lessons. Integrating public health and clinical practices, the Lives Saved Tool (LiST) modeling demonstrated that expanding midwife-led care in Ethiopia could substantially decrease maternal and neonatal mortality (Nove et al., 2021). Ethiopia's ANC and emergency obstetric services were enhanced through the training and deployment of midwives in rural communities, underscoring the effectiveness of community-level integration.

Rwanda also exemplifies a successful integrated model, as mobile clinics and maternal health centres were implemented to incorporate public health approaches with clinical care. Improvements in the early detection of complications and the promotion of timely referrals have decreased the number of maternal fatalities (Bijleveld et al., 2016). Similarly, the Maternal Center of Excellence in Sierra Leone, which Partners in Health established, is designed to fill the void between public health and obstetric care by offering dignified maternal services that integrate community engagement and education (Partners in Health, 2024). Through these initiatives, continuous, patient-centred services are guaranteed to women, incorporating clinical interventions with preventive care.

### Challenges and Opportunities in Implementing an Integrated Approach in Sierra Leone

Implementing integrated care models in Sierra Leone faces considerable problems, such as insufficient healthcare facilities, poor human resources, and cultural obstacles to seeking treatment. Inadequate health systems often obstruct prompt referrals and coordinated treatment, particularly in rural regions with limited healthcare access (Moran et al., 2015). The need for qualified professionals, including obstetricians and midwives, intensifies deficiencies in service delivery (Sserwanja et al., 2022). Public health programs that seek to merge clinical services with community-based care need help with financing, logistical coordination, and variable community involvement.

Nonetheless, the setting in Sierra Leone also offers several chances for enhancing maternal outcomes via integration. Enhancing community health worker programs and broadening telehealth services may alleviate the problem of health facility shortages and improve access to proficient treatment (Syed et al., 2022). Training and capacity-building initiatives for midwives and other frontline healthcare personnel have the potential to enhance emergency obstetric care. Collaboration among the government, foreign partners, and community stakeholders is crucial for developing effective integrated care models and harmonizing clinical and public health goals (Harriet, 2016).

Utilizing data from national health surveys and disease monitoring systems may guide evidence-based policy and enhance resource allocation efficiency. Through persistent political commitment, targeted investments in healthcare infrastructure, and community engagement, Sierra Leone may enhance integrated maternal health services that holistically address obstetric and public health concerns (CSIS, 2024).

## **POLICY AND CAPACITY BUILDING**

### **Importance of Policy Reform and Government Support for Integrated Maternal Health Programs**

The successful amalgamation of public health strategies with clinical obstetrics is contingent upon reforming policies and solid governmental backing. In Sierra Leone, the elevated maternal mortality rate underscores the urgent need for the establishment of thorough policy frameworks aimed at rectifying healthcare fragmentation and improving service provision. Policies prioritizing maternal health as part of more comprehensive public health goals foster better coordination between clinical care providers and community health systems (Bigdeli et al., 2020). Government initiatives to align health policies with Sustainable Development Goals (SDGs) have shown positive results in many low-income countries, where increasing universal access to quality maternal health services and equity in care have been demonstrated (The Common Wealth Fund, 2021). Policies adopted with success ensure financing, resource distribution, and workforce support are available to realize integrated health models.

To establish sustainable health systems, governments must address structural barriers, including financial constraints and logistical challenges. Economic incentives, enhancing supply chains, and decentralizing services have shown some success in other low-resource settings and could, therefore, be applied in Sierra Leone (Mbuagbaw et al., 2015). Reforms aimed at enhancing ANC and PNC can also provide a means to improve the integration of public health measures with clinical obstetrics. Policies that promote task shifting - where non-physician health workers, including midwives, provide essential obstetric care - are particularly effective in rural areas (Shen et al., 2019). The engagement of governmental entities is critical for ensuring the pertinence, cultural appropriateness, and coherence of policy initiatives with national objectives and community requirements (Ramaswamy et al., 2016).

### **Role of International Organizations, NGOs, and Local Government in Capacity Building**

International organizations, non-governmental organizations (NGOs), and local governments are critical in developing the required capacity to integrate maternal health care effectively. In most low- and middle-income countries, including Sierra Leone, NGOs support government efforts to implement community health programs through technical support and offering financial resources (Besançon et al., 2022). For instance, some organizations, such as Partners In Health, have devised programs to enhance maternal health by increasing access to health services, enhancing the referral system, and developing capacities of human resources in health (Lassi et al., 2016b). International funders and joint partnerships facilitate cross-border collaboration that initiates new health programs and strengthens local health systems (Ramaswamy et al., 2016).

However, local governments have much to do to sustain these interventions by adapting capacity-building activities to community needs. Such partnerships by community health professionals and public health organizations will result in better maternal outcomes through prevention and early identification of complications (Brandt et al., 2019). NGOs mobilize resources and advocate for policies integrating public health approaches and clinical care. Local governments and NGOs must go hand in hand to ensure



sustainability in maternal health programs and accountability to shifting community contexts. These capacity-building activities will benefit Sierra Leone, where poor infrastructure and a lack of health resources significantly affect the delivery of maternal health services (Besançon et al., 2022).

### **Training Healthcare Workers in Both Clinical Obstetrics and Public Health Approaches**

The training of healthcare professionals in both clinical and public health methodologies is crucial for the effective incorporation of maternal health services. Proficient healthcare practitioners with public health knowledge are likely to address more effectively the systemic issues contributing to adverse maternal outcomes, such as infectious diseases, malnutrition, and unsafe delivery practices (Swanson et al., 2015). In several low-resource settings, initiatives training midwives, nurses, and doctors in clinical care and public health result in better service delivery since the health professionals are empowered to respond to challenges and promote preventive care (Frost et al., 2021). In Sierra Leone, the training has paid attention to enhancing the competencies of healthcare workers in emergency obstetric care. In contrast, equal attention has been paid to community participation to increase maternal service utilization (Lassi et al., 2016b).

Interdisciplinary training programs can improve healthcare providers' performance by linking clinical practices to public health approaches. Midwives specializing in obstetric care and public health can screen for high-risk pregnancies, counsel on family planning, and implement outreach programs within the community (Brandt et al., 2019). These training programs are especially well-suited to the healthcare needs in rural Sierra Leone, where community members often look to midwives and community health workers for care. Furthermore, continuous professional development initiatives embedding public health frameworks ensure that health professionals remain current about best practices, thus enhancing maternal outcomes clinically and in the community (Swanson et al., 2015).

### **CONCLUSION**

Sierra Leone persists in confronting the crisis of maternal mortality, mainly attributed to complications from obstructed labour, eclampsia, and postpartum haemorrhage, all of which are avoidable. These are elevated in remote areas when access to competent birth attendants, emergency obstetric services, and healthcare infrastructure is limited. A split exists between clinical treatment and public health activities, hindering a comprehensive approach to maternal health issues. Public health interventions aimed at enhancing maternal outcomes include community outreach and prenatal care, which promote early risk identification and enable prompt healthcare-seeking behaviour. Nonetheless, the integration of such programs with clinical obstetric care has been minimal, undermining the efficacy of many community-based health initiatives. Other viable treatments include bridging these gaps by aligning public health initiatives with clinical practice, enhancing maternal mortality rates, and improving outcomes.

An integrated public health strategy for managing maternal health seeks to promote the well-being and health of women, following Sustainable Development Goal 3.1. Integrating hospital-based obstetric care with community-level activities, such as family planning, reproductive education, and prenatal services, may enhance early identification, treatment, and avoidance of problems. Integration necessitates the establishment of supportive policies that improve the quality of emergency obstetric treatment, augment access to competent birth attendants, and fortify healthcare delivery networks. This program integrates clinical and population-based methodologies to provide patient-centred, coordinated care. The government's commitment, bolstered by partnerships with NGOs and foreign funders, is deemed essential for the sustainability of these procedures.

### **ABBREVIATIONS**

**MMR**- maternal mortality ratio

**PPH**- post-partum haemorrhage

**ANC**- antenatal care

**PNC** - postnatal care

**mHealth**- mobile health

**EmONC**- Emergency Obstetric and Newborn Care

**EmOC-** Emergency obstetric care  
**SBAs-** Skilled birth attendants  
**TBAs-** traditional birth attendants  
**CHWs-** community health workers  
**LiST** - Lives Saved Tool  
**NGOs** - non-governmental organisations

## DECLARATIONS

**Ethics approval and consent to participate:** The study was approved by the ethics committee of the selected universities. Informed consent was obtained from all participating students, ensuring their participation was voluntary, and their confidentiality was maintained throughout the study.

**Conflict of Interest:** The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

**Availability of data and materials:** The datasets used and analysed during the current study are available from the corresponding author upon reasonable request.

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