

Project Summary

Implementing Community-Based Maternal Death Reviews in Sierra Leone



Background

Sierra Leone is among the poorest nations in the world, with 70% of the population living below the established national poverty line of US\$ 2 per day and a maternal mortality ratio (MMR) that remains one of the highest in the world (970 deaths per 100,000 live birthsⁱ). To address this, the government of Sierra Leone has implemented policies and programs aimed at improving maternal health. First Lady Sia Koroma identified maternal health as one of her priorities, and in March 2010, she launched the Campaign for the Accelerated Reduction in Maternal Mortality in Africa (CARMMA), which urges African governments to step up their commitment to maternal health. The government also introduced the Free Health Care initiative which provides free treatment to under-five children, pregnant women and lactating mothers who receive care at public health facilities. As part of these efforts, and in recognition of the need to improve the system for documenting maternal deaths, the Ministry of Health and Sanitation in Sierra Leone (MoHS), supported by partners, decided to initiate maternal death reviews (MDR).

CARE, with funding from the *Leveraging Information from the Field to Transform US Policy* (LIFT-UP) Initiativeⁱⁱ, worked with the MoHS to implement community-based MDRs in Koinadugu District and to share their learning and experience to inform MoHS efforts. This document provides background information on MDR, shares CARE's experience implementing community-based MDRs in Sierra Leone, and shares lessons learned and key recommendations.

“We are confronting a health crisis not only in Sierra Leone but in sub-Saharan Africa. This crisis is called maternal mortality.”

**Her Excellency, Mrs. Sia Nyama Koroma
First Lady of the Republic of Sierra Leone**

Overview of Maternal Death Reviews

Complications during pregnancy and childbirth are a leading cause of death and disability among women of reproductive age in developing countries. Most maternal deaths can be averted with known, effective interventions, but countries require information about which women are dying and why, and what actions can be taken at the community, healthy facility and hospital levels to prevent such deaths in the future. Ascertaining the number and cause of maternal deaths can be extremely difficult in developing countries, as death registration systems are limitedⁱⁱⁱ and many women give birth outside the formal health system, as is the case for approximately 40 percent of the population in Sierra Leone. The need to develop alternative methods for identifying causes of death is critical, as accurate data are necessary for making informed policy and programming decisions and taking effective and efficient action to reduce maternal deaths. Thus, many countries have begun to incorporate maternal death reviews into their measurement efforts.

MDRs are qualitative and in-depth studies of the causes of maternal death (See Box 1). They not only document a woman's death, but go further to

investigate the medical and underlying social causes of death and identify any actions that may have been taken to prevent that death. A MDR provides a rare opportunity for health staff and community members to learn from a tragic – and often preventable – event with the primary purpose of preventing future deaths through changes to programs and policies.

Studies have shown that where facility-based MDRs have been implemented, they have contributed to reducing maternal deaths and improving the quality of maternal care, especially when the process is supported by political and legislative instruments.^{iv} Researchers in Tanzania, for example, found that MDR contributed to a reduction in the average MMR from 849 per 100,000 live births during the period 1984-1986 to 275 per 100,000 during the period 1987-1991, concluding that reducing maternal mortality can be successfully approached by low-cost intervention programs such as MDR that aim to identify preventable factors and focus on locally available solutions.^v In 2007, the World Health Organization, UNICEF and other development partners evaluated the efforts of the African Ministries of Health to institutionalize MDRs. The study concluded that MDRs can lead to local policy changes and improvements in the quality of maternal health service. For example, following facility-based MDRs in a district hospital in Dakar, Senegal, 13 specific interventions were implemented, focusing on 24-hour availability of services, essential drugs and blood products.^{vi} A 2007 report by the National Committee on Confidential Enquiries into Maternal Deaths showed that in South Africa, MDRs have provided valuable evidence of the main barriers to overcoming maternal mortality, as well as analysis and recommendations for health sector and community action.^{vii}

Community-based MDRs, which are often implemented jointly with facility-based reviews, use interviews with family and community members to explore both the medical and non-medical causes of maternal deaths and are now being widely used as a tool for disease surveillance and at times to estimate cause-specific mortality.^{viii} Experience suggests that

utilizing community-based MDRs can lead to a deeper understanding of the causes of maternal deaths and can be a strategy to engage communities to take action to prevent maternal deaths.

Box 1: Maternal Death Reviews*

MDRs investigate the medical causes and circumstances surrounding maternal deaths leading to a deeper understanding of the interrelated and often preventable factors leading to maternal deaths. MDRs are typically facility- or community-based.

A **facility-based** MDR is a qualitative, in-depth investigation of the causes of and circumstances surrounding maternal deaths occurring at health facilities. Deaths are initially identified at the facility level but such reviews are also concerned with identifying the combination of factors at the facility and in the community that contributed to the death, and which ones were avoidable, so are often supplemented by a community-based review.

A **community-based** MDR, often called a **verbal autopsy**, is a method of finding out the medical causes of death and ascertaining the personal, family or community factors that may have contributed to the death of a woman who died outside of a medical facility.

** Definitions based on: Beyond the Numbers: Reviewing maternal deaths and complications to make pregnancy safer. WHO, 2004*

Implementing Community-Based MDRs

Data Gathering Process

CARE Sierra Leone received funding through the LIFT-UP grant to work with the MoHS to implement community-based MDRs in seven chiefdoms in Koinadugu District. CARE collected data in five of the chiefdoms using a tool and methodology developed in consultation with partners and the MoHS that had a strong community-based focus, and in the other two chiefdoms using a different MoHS tool and methodology. This enabled CARE to estimate the maternal mortality ratio for the area and gather specific information about cause of death, in

addition to being able to assess the two approaches to implementing MDRs. Both methodologies focused on identifying personal, family and community factors that contributed to the death of a woman in order to generate useful information and guide stakeholders in implementing actions to reduce maternal mortality. The main differences between these processes were:

- the length and scope of the data collection tools (e.g., the CARE tool was longer and more comprehensive);
- how women's deaths were identified (e.g., CARE worked with communities to identify maternal deaths plus information from health facilities, while the MoHS list came from the health facilities and were added to when undertaking the reviews in the community); and
- how engaged both the community and chiefdom MDR Committee were in the MDR process (i.e., a main focus of CARE's methodology was on actively engaging the community and chiefdom MDR Committee members in the process to ensure that the data collected were used to raise awareness of the problem, identify and prioritize possible solutions and lay the foundation for action).

To gain further insight into the community-based MDR process, CARE undertook qualitative interviews that explored the purpose and principles of MDR, establishment and composition of MDR Committees, functioning of the MDR process, community recommendations and actions, data collection issues and general challenges.

Data were collected through focus group discussions with CARE and MoHS data collectors and members of chiefdom and district level MDR committees, as well as through an in-depth interview with the district medical officer.

Description of CARE's Approach

Implementation of CARE's community-based MDRs involved the following steps:

Community sensitization: Building on MoHS efforts, CARE worked with partners to hold community

meetings and meetings with health workers about the purpose and need for MDRs, helping to ensure buy-in and engagement throughout the process.

Establishment of MDR committees at the chiefdom and district levels: At the chiefdom level, committees comprised of several local persons of authority – including chiefs, traditional birth attendants, imams and women leaders – were formed. The committee was tasked with discussing the outcome of the verbal autopsies in the chiefdom; completing a MDR Summary Form, and recommending interventions to address maternal deaths at the chiefdom level. A district MDR committee consists of health professionals from MoHS, local government officials, representatives of NGOs and community leaders. The district MDR committee is tasked with reviewing and discussing the findings and recommendations from chiefdom MDR committees and recommending and implementing actions to reduce maternal mortality at the district level.

Identification of women that died in the community: Using data collected from the Peripheral Health Unit and the hospital, CARE was able to identify 26 and 28 women that died, respectively. Discussions with community based groups such as mothers groups, as well as with community leaders, identified an additional 28 deaths in the chiefdoms where CARE's methodology was being implemented that would not have otherwise been identified. This suggests that in the CARE area, at least 50 percent of maternal deaths could have been missed if the community was not involved. A total of 70 deaths were reviewed in the five chiefdoms (82 total in all seven chiefdoms).

Identification of respondents: Relatives and close associates of the deceased were selected for interviews. Members outside the immediate family circle of the deceased were also interviewed, including traditional birth attendants (TBAs) and close friends. A total of 202 people were interviewed.

Training data collectors: Six CARE Sierra Leone staff with considerable data collection experience were identified to conduct the community-based MDRs in

the five Chiefdoms using the CARE tool. They were trained by CARE Sierra Leone staff that had participated in a training-of-trainers workshop in September 2009. The training focused on the MDR process and methodology, including an overview of MDRs, MDR structures and responsibilities, understanding the MDR tools, and techniques for conducting interviews and moderating focus group discussions.

Conducting interviews: Data collectors visited the respondents, explained the purpose of the study and sought informed consent. In all chiefdoms, data collectors were accompanied by a representative of the chiefdom MDR committee. The local language was used in all interviews.

Sharing Data: Completed MDR forms were taken to the monthly chiefdom MDR meetings, where the MDR Summary Form was completed, which included recommended actions to be taken at the community level. These forms were then shared with the district MDR committee who reviewed the forms, made recommendations and developed action plans to address the issues raised.

Research Findings

Analysis of MDR Data

Based on the MDR data, CARE was able to estimate the following for the seven chiefdoms covered:

| | Estimates for all chiefdoms | National Average |
|-------------------------------------|-----------------------------|------------------------|
| MMR | 958 per 100,000 | 970 per 100,000 (2008) |
| Lifetime risk of maternal mortality | 1 in 15 | 1 in 21 (2008) |

In the five chiefdoms where the CARE tool was used, a significant number of women died at home (30 percent), while 50 percent died at the local health facility or the hospital (10 percent and 40 percent, respectively). Some of the risk factors suggested by the data include: Early pregnancy, a short birth interval between pregnancies, distance to the health

facility, and lack of transportation. Over 60 percent of the direct causes of death (n=40) identified were the result of post-partum or ante-partum hemorrhage. Other direct causes included: eclampsia, sepsis, obstructed labor, ectopic pregnancy and abortion. Indirect causes of death (n=35) included anemia, malaria and HIV/AIDS. For the 28 deaths that occurred at the health facility in the five CARE chiefdoms, accuracy of the cause of death identified by the MDR was assessed by comparison to the cause of death listed by the health facility. There was agreement 82 percent of the time. This high percentage of agreement could be due to the exhaustive nature of the MDR tool use by CARE.

Qualitative Findings

Qualitative interviews provided additional information and insight about the community-based MDR process, particularly related to community engagement and the data collection tools. Findings from the qualitative data suggest that the community-based MDR process helped to:

1. Increase communities' awareness about the causes of maternal mortality and lay the foundation for action. Due to their engagement in the MDR process, many communities took responsibility for addressing the challenges identified by the MDRs. Specifically, chiefdom MDR committees developed action plans for:
 - building birth waiting homes;
 - raising awareness among women and the community about identifying danger signs and the importance of visiting the health facility before, during and after delivery;
 - ensuring pregnant women in the community have access to nutritional foods;
 - creating incentives for blood donors (to ensure adequate blood supply is available for transfusions);
 - improving healthcare referral systems, including hammock systems for transport; and
 - maintaining roads to ensure transportation access to health facilities.

2. Catalyze the creation of new MDR committees in some communities and to clarify the role and objectives of these committees – Respondents explained that MDR committees are operating with relative efficiency and effectiveness, functioning best when there is sufficient local representation and/or authority to make them credible to their communities and improve functionality.
3. Identify challenges associated with the tools – Interviewees found that the MoHS forms were easily understood and easy to fill out, but they required some modification such as the addition of extra questions and clarifying the meaning of some questions for those administering the MDR. On the other hand, the CARE forms were reported to be well structured and comprehensive, but bulky and took longer to administer than the MoHS forms.

Uncovering socio-cultural issues: Through the use of community-based MDRs, socio-cultural issues, such as early marriage/pregnancy and short birth intervals, were uncovered, which may not otherwise be identified as contributing to high maternal mortality. They also identified other key barriers, such as transport and cost.

Sensitizing health workers and the community from the beginning: In the early stages of implementation by the MoHS, there was reluctance among health workers and the community to engage in the MDR process. Initially, health workers voiced concern that MDRs were fault-finding and punitive – and identified examples where they were (incorrectly) being used for this purpose. Once they understood the true intent, they were very supportive of the process. The sensitization at the community level helped overcome any reluctance on the part of family or community members to speak about maternal deaths due to religious beliefs and cultural taboos.

Lessons Learned

Recognizing the feasibility of conducting community-based MDRs: Despite numerous challenges, the research found that it is feasible to conduct community-based MDR in a resource-constrained setting, as the process represents a relatively low-cost and low-tech method to collect detailed information on maternal deaths.

Counting maternal deaths: Through the community-based MDR process, 28 maternal deaths were identified that were missed using facility-based data only, and most of these deaths were of younger women and girls. This has broader implications for maternal mortality estimates across Sierra Leone. The data collected enabled calculation of a maternal mortality ratio for the area.

Ascertaining cause of death: Determining cause of death is possible at the community level and cross-validation of cause of death with those that happened in health facility/hospital can provide some estimate of the accuracy.

Excerpts from Qualitative Interviews

“Yes, [the MDR] is useful because it will help us to know from the families other reasons that have caused the death of the woman. So others can learn from it and will try to stop similar problems in the future.”

- Chiefdom MDR Committee Member

“We don’t want this to happen again, it should be given a full stop. That is why we are completing the birth waiting homes to allow people coming from far communities to stay there when the pregnancy is termed.”

- Chiefdom MDR Committee Member

“Most of the deaths are due to delay in referrals because the roads are bad. So they (chiefdom committees) decided to make roads.”

- CARE Data Collector

“Human beings need constant reminder, the committee is very useful as we are here to sensitize the people about maternal death and remind them to visit the health facility when pregnant.”

- District MDR Committee Member

Empowering the community to take action: The MDR process helped to increase communities' awareness about the causes of maternal mortality and the need to take action to prevent maternal deaths. In numerous cases, the chiefdom MDR committees identified specific actions that could be taken by the community to improve maternal health outcomes.

Recommendations

The following are recommendations that emerged from implementing community-based MDRs in Sierra Leone:

- Local governments and communities must be key partners in addressing high MMR and implementing community-based death reviews.
- It is important to effectively communicate community-based MDR principles and purposes to ensure that all parties understand the process and to encourage participation from the community and health workers.
- Community-based MDR needs to be incorporated into the national MDR system through mechanisms that closely link processes and outcomes of chiefdom and district MDR in order to jointly develop and implement recommendations.
- Investment is needed to continue and expand community-based MDR efforts in Sierra Leone and beyond. In particular, additional research is needed on how community-based MDRs contribute to understanding and addressing the direct and indirect causes of maternal mortality and driving action at various levels.



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ⁱ Trends in maternal mortality: 1990 to 2008. WHO, 2010. whqlibdoc.who.int/publications/2010/9789241500265_eng.pdf
ⁱⁱ The LIFT UP Initiative is a two-year program funded by the Bill and Melinda Gates Foundation. It aims to scale up the impact of CARE's advocacy for more effective and adequately resourced international health and development programs through the collection, analysis and systematization of information from country programs.
ⁱⁱⁱ As of 2005, only 25 of the 192 countries in the world had a death registration system that was considered of high quality (www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.0030442)
^{iv} [www.ijgo.org/article/S0020-7292\(09\)00238-0/abstract](http://www.ijgo.org/article/S0020-7292(09)00238-0/abstract)
^v www.heapol.oxfordjournals.org/content/10/1/71.short
^{vi} www.amddprogram.org/v1/resources/maternaldeathreview.pdf
^{vii} www.doh.gov.za/docs/reports/2007/savingmothers.pdf
^{viii} www.who.int/bulletin/volumes/83/8/611.pdf

This project summary was based on findings from the CARE Sierra Leone LIFT-UP study and the thesis Assessing risk factors of maternal mortality using community based maternal death review in Koinadugu District, Sierra Leone, completed by Gilbert Boredison (Masters in Public Health, Emory University). CARE USA would like to thank CARE Sierra Leone staff for their support in writing this project summary.



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