Title

Facility Staff Perspectives on the Implementation of Maternal and Perinatal Death Surveillance and Response in Six Health Facilities in Kigoma, Tanzania

Authors

1. Sarah Huber-Krum, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, GA, USA; Email: qky8@cdc.gov
2. Florina Serbanescu, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, GA, USA; Email: fxs7@cdc.gov
3. Sarah Hartley, National Foundation for the Centers for Disease Control and Prevention, Atlanta, GA, USA; Email: shartley@vcom.edu
4. Patricia Spencer, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, GA, USA; Email: rup9@cdc.gov
5. Lauren Galioto, National Foundation for the Centers for Disease Control and Prevention, Atlanta, GA, USA; Email: xoe2@cdc.gov
6. Abdulaziz Msuya, National Foundation for the Centers for Disease Control and Prevention Tanzania; Email: amsuya888@gmail.com

Disclaimer

The findings and conclusions in this paper are those of the authors and do not necessarily represent the official position of the US Centers for Disease Control and Prevention.

Short Abstract

Implementing and sustaining Maternal and Perinatal Death Surveillance and Response (MPDSR) is an important strategy for identifying medical and non-medical factors that contributed to maternal deaths and formulating recommendations and action plans to prevent future deaths. We used qualitative in-depth interviews (IDIs) with 22 health facility staff in 6 hospitals located in Kigoma Region, Tanzania to identify factors that influenced MPDSR implementation outcomes. Guided by two implementation science frameworks, we identified several factors that facilitated MPDSR sustainability and barriers for adoption and implementation of MPDSR. Prominent facilitators included positive perspectives of MPDSR, training and mentorship, and community engagement. Major barriers included lack of organizational readiness, staff commitment, financial and resource constraints, culture of assigning responsibility b, time constraints of staff, weaknesses in MPDSR processes, and limited participation of community representatives in reviews. Identifying factors that influence the implementation of MPDSR in health facilities is important for understanding why or why not data collected from MPDSR is used effectively to prevent maternal and perinatal deaths and the constraints that limit the full adoption of Tanzanian national guidelines.

Extended Abstract

Background

Maternal and Perinatal Death Surveillance and Response (MPDSR) is a system of continuous identification, notification, review and analyses of maternal and perinatal deaths in

order to identify the medical and non-medical factors that contributed to a death and formulate actions to prevent future deaths (1). Over the past two decades, the Tanzanian government has made concerted efforts and substantial investments to reduce maternal and perinatal deaths, including through the implementation of MPDSR (2). However, Tanzania may face barriers to implementing, scaling up, and sustaining components of MPDSR, such as poor record keeping, poorly functioning hospital systems, human resource constraints, delays in conducting reviews, inadequate formulation of recommendations, and ineffective implementation of action plans or no development of action plans (3-6). Identifying factors that influence the implementation of MPDSR in health facilities is important for understanding how to strengthen the process and ultimately use the data to prevent maternal and perinatal deaths.

Our study was nested within a mixed-methods sustainability evaluation of a program that was implemented in Kigoma Region, Tanzania to reduce maternal deaths. The *Program to Reduce Maternal Deaths in Tanzania* (henceforth known as the Program) was a long-term public-private partnership carried out from 2006 to 2019 in Kigoma Region (7), which was one of the most underserved regions at that time (8). The Program implemented a series of facility and community interventions to increase the availability of high-quality maternal and reproductive health services (7, 9). A smaller focus of the Program was to improve the monitoring of maternal and perinatal deaths through conducting trainings in implementing and maintaining MPDSR. An initial evaluation of The Program found a significant increase in the use of MPDSR forms, a prerequisite to completing reviews (9), suggesting improvements in the implementation of MPDSR in study facilities. In the final year of the Program's implementation, a sustainability framework was introduced to transfer program management to the regional health authority and maintain components of the Program that were perceived as key in the maternal and perinatal death reductions, including MPDSR (7). A sustainability evaluation was conducted (2022-2023) to examine the status of processes and approaches that had been introduced by the Program. Results from the quantitative assessment suggest widespread MPDSR implementation, but mixed results in terms of maintaining fidelity to MPDSR processes and implementing and monitoring recommendations for action (10).

To identify factors that affected implementation outcomes of MPDSR in Kigoma Region, we used qualitative in-depth interviews (IDIs) with health facility staff in 4 hospitals and 2 high volume health centers. We used two theoretical frameworks to guide this study. First, to understand the factors impacting MPDSR implementation, we applied the implementation outcomes framework (11), which defines implementation outcomes as the effects of deliberate and purposive actions to implement new practices that are necessary preconditions for attaining consequent desired changes in clinical outcomes. We also used the Practical, Robust Implementation and Sustainability Model (PRISM) to guide the qualitative analysis and presentation of the results. PRISM is an implementation science framework that can be used to understand and address the contextual factors that affect a program (12). By identifying and addressing these contextual factors, PRISM posits that this will lead to successful implementation outcomes, like sustainability.

Methods

Qualitative, semi-structured IDIs were conducted with 17 delivery care providers (e.g., obstetricians, pediatricians, other medical doctors, and midwives) and 6 health-facility administrators who oversaw or facilitated their facility's MPDSR process to identify barriers to implementation. Six hospitals located in Kigoma Region, including all government hospitals, the largest private hospital, the public health center with the highest volume of maternal deaths, and

the private health center with the highest volume of maternal deaths, were purposively selected for participation. Interviews were conducted in January 2024 in English or Swahili. Three to four participants were purposively selected from each facility based on their involvement with their facility's MPDSR implementation. Before each interview, participants were asked to provide verbal consent to take part in the study. Interviews were audio recorded with participants' permission and subsequently transcribed and translated to English (if applicable) for analysis. This project was approved by the National Institute for Medical Research (NIMR) in Tanzania as one activity among a larger set of activities for the Sustainability Evaluation of the *Program to Reduce Maternal Deaths in Tanzania*. This activity was reviewed by CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy.

We used NVivo 14 to manage, code, and interpret the data using thematic content analysis (13). We applied a multistage analytic approach to index and code the data. In the first stage, we developed a final codebook through a rigorous process of defining and applying deductive and inductive codes. In the second stage, we used the constant comparative method to apply codes to all text. We used analytical memos to summarize case details and to highlight particularly rich narratives and emergent themes. Coders met regularly to review coding decisions and come to an agreement on major themes to ensure analytical rigor and consistency. As a last step, we organized the data into thematic schemes, preserving the context of the original text. We sorted codes and themes into categories that described domains and subdomains of the research questions and the implementations outcome framework. We organized results by three major themes that align with the PRISM framework, including (1) Perspectives on MPDSR, (2) Organizational, staff, and MPDSR related factors affecting implementation and sustainability, and (3) Implementation and sustainability infrastructure. Within each major theme, we present a narrative of subthemes and describe relevant connections to implementation outcomes.

Results

Participant Demographics

Many participants were Medical Doctors in their current facility (40.9%). Additionally, 22.7% were Nursing Officers (nurses who have a bachelor's degree in nursing), 31.8% were Assistant Nursing Officers (nurses who have advanced diplomas or diplomas in nursing), and 4.5% were Enrolled Nurses (nurses who have certificates in nursing). Over half of participants had been in their current position in their facility for 1-3 years (54.5%). Most participants received formal training on MPDSR (63.6%).

Major Themes

Perspectives on MPDSR. Participants were highly enthusiastic about MPDSR and its perceived benefits, which included reduction of maternal mortality through the identification of the direct and indirect causes of death and addressing those causes and gaps through action plan recommendations. Participants also noted that recommendations and actions based on MPDSR data addressed gaps in the healthcare system, improving providers' technical skills and knowledge, and, ultimately, improving the quality of care. Participants' perspectives that MPDSR was acceptable were a positive influence on adoption and sustainability.

Participants' perspectives on organizational readiness to implement action plans and recommendations varied. Most participants described MPDSR meetings as collaborative discussions, and this worked to strengthen action plans and recommendations. On the other hand, lack of readiness to implement resulting recommendations was recognized as a weakness. Participants reported several potential reasons for this lack of readiness. For example, some participants reported that not all facility staff might understand the purpose of MPDSR or be

committed to MPDSR processes, so staff might not implement assigned recommendations. Other participants highlighted that lack of knowledge about MPDSR can result in staff feeling uncomfortable about participation in meetings.

Organizational, staff, and MPDSR related factors affecting implementation and sustainability. We identified organizational, staff, and MPDSR related factors that affected MPDSR implementation and sustainability. Organizational related factors included: limited resources, financial barriers, and blame culture. First, limited resources affected a variety of MPDSR processes. Some participants reported that staff are not always provided resources and/or support to implement certain action plan recommendations and this could lead to committees only developing recommendations that they know they can achieve with these limitations in mind. Financial barriers were also a commonly mentioned barrier to MPDSR implementation, often impacting a committee's ability to hold meetings, and to follow up on action plans. Some participants reported that committees will select recommendations that they know do not cost or have minimal associated costs. Lastly, culture of assigning responsibility impacted MPDSR adoption. Most participants reported that their facility tried to maintain the principles of "No Name, No Blame and No Shame", which is considered essential for successful MPDSR implementation (14). Participants also reported that committees implement strategies to create an environment conducive to fostering confidentiality and anonymity, such as reviewing MPDSR principles aloud at the start of a meeting. However, some participants reported that nonadherence to the principles still occurred and provided examples of disciplinary actions taken against staff after MPDSR meetings. Disciplinary actions ranged in severity, from subtle (e.g., letters or one-on-ones) to more extreme (e.g., temporary job reassignment).

Staff-related factors that influenced MPDSR implementation outcomes included time constraints and staff participation in MPDSR. First, staff described numerous constraints on their time, which led to them juggling multiple priorities, tasks, and responsibilities. In turn, this led to issues in implementing MPDSR processes (for example, holding or participating in meetings and/or providing information for death reviews). Secondly, full staff participation in MPDSR processes, such as attending reviews or providing information to committees, was recognized as a barrier to implementation and sustainability. Participants reported several reasons for not attending reviews such as struggling to meet competing priorities and the timeline of death reviews that were not always compatible with staff schedule. Participants reported that some staff might not fully cooperate with MPDSR committees and, as a result, forge attending meetings. Some participants described that some staff might not feel a sense of ownership or might lack confidence in MPDSR processes, and so they avoid participating in meetings.

We identified two MPDSR-related factors that affected sustainability: fidelity to processes and procedures and adoption of Tanzanian national guidelines. First, participants described weaknesses in MPDSR processes and systems. Some participants noted that at times committee members failed to report back on recommendation implementation. This could be because the person responsible would fail to appear and provide a progress report or because they did not implement recommendations in the given time frame. Second, a common logistical challenge that participants reported was the involvement of multiple facilities in a death review meeting. Per the Tanzanian guidelines, all facilities involved in a maternal death must be present at a review. Participants reported that it is difficult to not only collect the details of the death that are needed for the review process from another facility, but also to involve staff from other facilities in a review.

Implementation and Sustainability Infrastructure. We identified two primary factors related to facility infrastructure that acted either as barriers or facilitators to MPDSR implementation and sustainability, include training and mentorship and community engagement. First, participants reported that initial and ongoing training on MPDSR helped staff understand the purpose and goals of MPDSR, as well as better understand its processes. Some participants also mentioned that mentoring staff with limited experience with MPDSR helped them better understand why it is needed and how to correct misinformation and/or fear about the process. Trainings also supported fidelity. Participants reported that more staff understood the importance of confidentiality and anonymity principles after training. Many participants, however, reported that there were ongoing training needs in their facility that were not currently being met.

Community engagement was another factor that affected sustainability and acceptability. Overall, participants reported that they did provide information about recommendations to those living in communities where deaths occurred, but typically only if a maternal death occurred because of an external or community related factor (e.g., delaying care). While participants reported that they did provide communities with information, in-depth engagement seemed limited and participation of community representatives in reviews was nonexistent. This was despite that many participants recognized the importance of educating communities about maternal death, addressing delays in seeking care, and addressing community beliefs and norms that impact maternal mortality.

Discussion

We identified several factors that facilitated and hindered MPDSR implementation outcomes. Of note, we found that providers were supportive of MPDSR and perceived it as a beneficial strategy to prevent maternal death and improve the quality of care, consistent with another sub-national qualitative study in Tanzania (6). Taken together with quantitative findings, qualitative findings suggest that MPDSR may be highly acceptable in facility settings in Tanzania. In 2023, 93% of health centers and 91% of hospitals in Kigoma Region reported that they have a formal system for reviewing maternal deaths (10). This widespread adoption of MPDSR may be partly attributable to high levels of acceptability.

Fidelity to the principles of "No Name, No Blame and No Shame", confidentiality, and anonymity is widely considered of paramount importance to MPDSR implementation and sustainability (14-16). We found that blame culture may be a barrier to MPDSR implementation outcomes. While most participants described that their facility valued these principles and tried to create environments to foster these principles, adherence could be improved. Limited human resources and hierarchal structures may contribute to blame culture by stifling honest discussion and denying responsibility (15). Addressing resource constraints, along with other factors like fear or blame or misunderstanding about the purpose of MPDSR, may motivate facility staff to actively participate in MPDSR (15). To facilitate a culture of trust, some methods such as audits of meetings combined with training and supervision may be effective (16, 17).

Due to the sampling design and qualitative nature of the study, findings can only be generalized to the parent population from which the sample was drawn. Thus, findings cannot be generalized to other health facilities beyond the six included in this study. Additionally, findings are limited to MPDSRs that occur at health facilities, and we cannot generalize to community MPDSR. Lastly, respondent views may not reflect those of other staff at the health facilities who were not included in the study.

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