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Rapid maternal death surveillance and response in humanitarian emergencies: insights from South Darfur, Sudan

*Noor Rijnberg[1], Roa Abdalla Osman Abo-Elhassan[2], **Benjamin Black**[3], Gillian Burkhardt[4], Monique Pereboom[4], Ali Almohammed[4]

[1]Médecins Sans Frontières (MSF), Amsterdam, Netherlands; [2]MSF, Nyala, Sudan; [3]MSF, London, UK; [4]MSF, Amsterdam, Netherlands

*noor.rijnberg@amsterdam.msf.org

Introduction

Since April 2023, armed conflict has led to devastating consequences for maternal health in Sudan. Maternal and perinatal death surveillance and response (MPDSR) is the global standard for monitoring and responding to maternal morbidity and mortality, but its use in acute humanitarian crises has been limited. Médecins Sans Frontières (MSF) developed a rapid version of the MPDSR tool (R-MDSR), piloted successfully in an acute conflict setting (Tigray, Ethiopia, 2020–22). Since January 2024, MSF has implemented R-MDSR in South Darfur, Sudan, building on lessons learned from its pilot in Ethiopia by integrating community engagement. We aimed to describe the outcomes and resulting actions of R-MDSR on how it supported community-driven interventions to address maternal morbidity and mortality in South Darfur.

Methods

The R-MDSR tool was implemented in two Ministry of Health hospitals in Nyala and Kas, and in three community settings from January 2024. It followed a four-step process: case identification, simplified root cause analysis, action planning, and response monitoring. Facility-based findings informed a snowball survey in internally displaced (IDP) camps in April 2024, followed by focus group discussions (FGDs) in June 2024, which used an adapted version of the facility-based tool to explore community perspectives and contextualise possible interventions.

Ethics

This research fulfilled the exemption criteria set by the MSF Ethics Review Board (ERB) for a posteriori analyses of routinely collected clinical data and thus did not require MSF ERB review. It was conducted with from the Medical Director of Operational Centre Amsterdam, MSF.

Results

R-MDSR documented 114 maternal deaths between January and July 2024, of which 46 (40%) occurred in the facility and 68 (60%) in the community. Analysis revealed that 32 (78%) of 41 facility deaths occurred within 24 h and eight (20%) within 4 h of arrival at a health facility. The community engagement component, including a snowball survey and FDGs, provided women with the opportunity to share their experiences of barriers to care and their preferences for accessing services. These insights strengthened the relevance of the tool and directly informed subsequent programme design.

Conclusions

The R-MDSR highlighted a high number of maternal deaths with critical delays in reaching care. These results directly contributed to the implementation from August 2024 of women-centred, community-based clinics within IDP camps providing antenatal, intrapartum, and postpartum care and staffed by community midwives and traditional birth attendants. The success of these clinics led to the expansion of more sensitive services (care for survivors of sexual violence, contraceptive options, safe termination of pregnancy) in October 2024. Alongside facility-level improvements, these interventions addressed key contributors to maternal mortality. These experiences show that R-MDSR can be successfully implemented in humanitarian crisis, and that integrating community engagement is highly valuable to help contextualise factors affecting maternal survival as well as directly informing concrete, action-oriented interventions to reduce maternal mortality.

Conflicts of interest

All authors declare no competing interests.