



A Regional Assessment of Facility-Level Maternal and Perinatal Death Surveillance and Response Systems in Four Sub-Saharan African Countries

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Introduction and Background

An estimated 2.3 million women and their babies died from pregnancy and childbirth complications in sub-Saharan Africa in 2015, including 201,000 maternal deaths, 1.06 million stillbirths, and 1.04 million newborn deaths.¹ Approximately 75% of newborn deaths occur in the first week of life and nearly half of maternal and perinatal deaths occur around the day of birth.² Maternal and perinatal death surveillance and response (MPDSR) systems are an important component of strategies to decrease preventable maternal and perinatal deaths. MPDSR is a continuous cycle of identifying, notifying, and reviewing maternal and perinatal deaths to determine avoidable causes followed by actions to prevent future deaths. Despite global recommendations and favorable national policy in many countries, few African countries have robust MDSR/PDSR systems. Better understanding of MPDSR implementation status, including enablers and barriers, can help countries to strengthen MPDSR systems and thus reduce preventable deaths.

From 2016–2017, USAID’s Maternal and Child Survival Program (MCSP) conducted an assessment on MPDSR implementation in four sub-Saharan African countries: Nigeria, Rwanda, Tanzania, and Zimbabwe. The objectives of the assessment were to 1) assess implementation status of MPDSR processes at subnational and facility levels, and 2) describe facilitators and barriers to sustainable subnational MPDSR practices.

Methods

In collaboration with ministries of health, MCSP selected a non-random sample of facilities for the assessment. Facility inclusion criteria included providing childbirth services, having current or previous experience conducting maternal and/or perinatal death reviews, and/or implementing formal MPDSR processes or policies. Applying this standard selection criteria, a mix of primary- and referral-level facilities were selected in each country. A total of 55 facilities were assessed across the four countries: 41 hospitals and 14 health centers.

MCSP conducted a desktop review of key country MDSR/PDSR policies, guidelines, and tools before conducting stakeholder interviews and site visits in each country. Across the four countries, trained data collectors conducted semi-structured interviews with over 41 key informants (national and subnational, including policymakers and regional/district managers) and conducted 55 facility visits including semi-structured interviews with facility managers and providers using a structured data form as well as a review of facility MPDSR documents. An adapted scoring tool was used to assign an MPDSR

¹ World Health Organization (WHO). 2016. World Health Statistics 2016: Monitoring health for the SDGs. Geneva: WHO.

² Lawn et al. 2014. Every Newborn: progress, priorities, and potential beyond survival. *Lancet*. 384(9938):189-205.

implementation progress score.³ Each facility received an implementation progress score of 0–30 based on standardized criteria to assess stage of MPDSR implementation progress across three phases: pre-implementation, implementation, and institutionalization.

Findings

The mean MPDSR implementation progress score across the 55 facilities was 15.9 (some evidence of practice), ranging between 1.08 and 27.38. Hospitals scored higher on average (18.57) than health centers (11.34). Eighty-five percent of the 55 health facilities assessed demonstrated some evidence of MPDSR practice, and 56% of all facilities demonstrated some elements of routine practice (Figures 1–4). Although the majority of facilities had evidence of practice, the detailed findings across the four countries demonstrated variable MPDSR implementation status (see Table 1).

Figure 1. Progress of MPDSR implementation in Nigeria

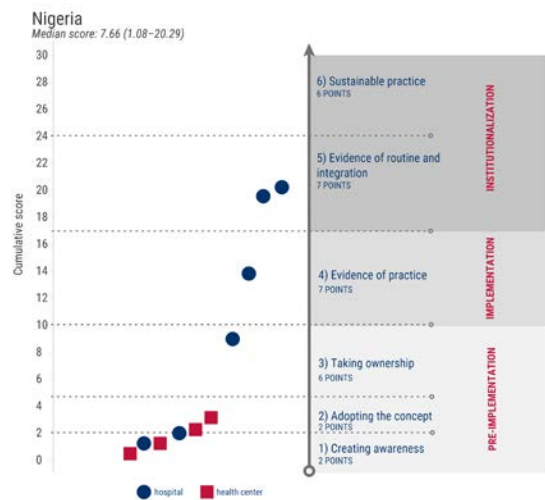


Figure 2. Progress of MPDSR implementation in Rwanda

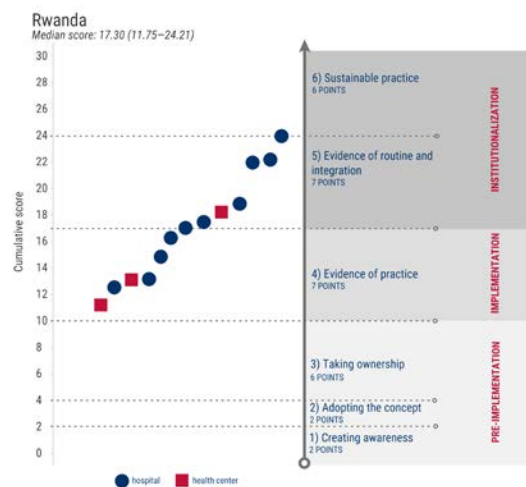


Figure 3. Progress of MPDSR implementation in Tanzania

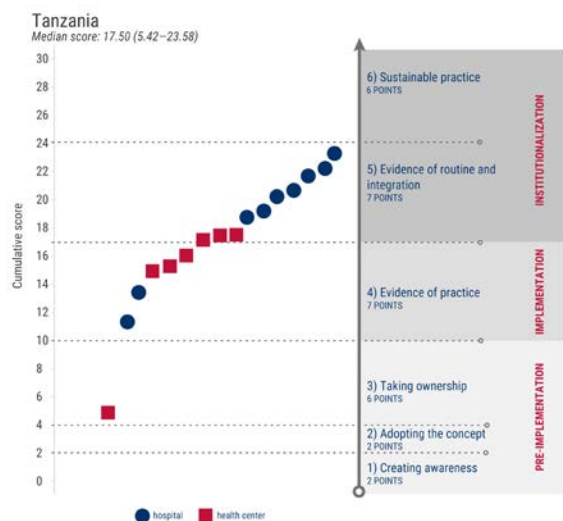
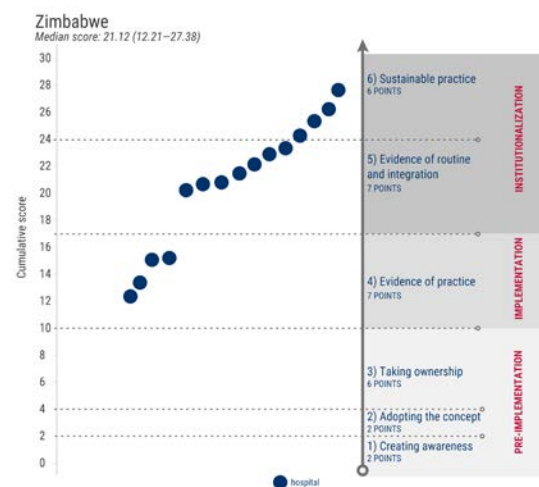


Figure 4. Progress of MPDSR implementation in Zimbabwe



³ Adapted with permission from Bergh et al. 2005. Measuring implementation progress in kangaroo mother care. *Acta Paediatr.* 94(8): 1102-8.

Table 1. Markers of MPDSR implementation progress in 55 facilities in Nigeria, Tanzania, Zimbabwe and Rwanda

Implementation construct	Progress marker or instrument item	Nigeria (N=3)	Rwanda (N=13)	Tanzania (N=15)	Zimbabwe (N=16)	Average
1. Creating awareness	Clear leader(s) establishing and championing death reviews (past or future)	100%	69%	100%	94%	89%
2. Adopting the concept	MPDSR Steering committee established	67%	100%	100%	81%	91%
3. Taking ownership	MPDSR tools available - data collection form	17%	100%	100%	69%	84%
4. Evidence of practice	Evidence of MPDSR meetings - meetings notes include action items	17%	31%	100%	81%	68%
5. Evidence of routine integration	Further evidence of practice - evidence of change based on previous recommendations	61%	10%	44%	71%	44%
6. Evidence of sustainable practice	Documented results - ongoing death reviews meetings for >1 year	75%	85%	77%	95%	83%

Despite the existence of national MPDSR guidelines and related tools in all four countries, awareness, availability, and use of standardized notification forms at the facility level was inconsistent. In general, key informants were aware of the importance of collecting mortality data and notifying authorities of maternal and perinatal deaths. However, documentation of deaths was often incomplete or inaccurate, especially for cause of death. Subnational stakeholders (e.g., district managers) reported some integration of surveillance information from MPDSR death audits into civil registration and vital statistics (32%) and health management information systems (68%). Although most facility-based audit meeting notes included action items, no facilities or regional managers reported standardized processes for follow-up of audit recommendations. However, many informants gave examples of changes introduced after an audit. Seventy-four percent of facilities with evidence of practice indicated some sort of integration between quality improvement (QI) and MPDSR activities.

Across the facilities assessed, there was a wide range of responses regarding the enabling and hindering factors of implementing MPDSR. Table 2 highlights the top enablers and barriers identified by the assessors.

Table 2: Top enablers and barriers to MPDSR implementation

Top three enablers	Top three barriers
1. Interdisciplinary teamwork with good communication among staff and staff participation in meetings	1. Health worker capacity issues, such as limited staff time and work overload preventing meeting attendance and limited capacity to implement the full audit cycle including correct assignment of the cause per ICD MM
2. Support from national and/or subnational levels including through training, capacity-building, and administrative support	2. Human resource shortage issues, such as high staff turnover and general staff shortage
3. Evidence of MPDSR process leading to change or having improved health services	3. Demotivation because of recommendations at various levels not being implemented

Conclusion

This multi-country assessment is the first attempt to measure the stage of facility-level MPDSR implementation progress using a standardized scoring tool in multiple countries. Findings demonstrate elements of MPDSR practice in most facilities surveyed as well as important implementation gaps, highlighting opportunities to strengthen MPDSR systems in sub-Saharan African countries.

Recommendations include:

- Strengthen health workforce to enable meaningful participation in audit meetings
- Build health worker capacity to implement the full cycle of a death audit, including identification of all deaths, correct assignment of death using a standardized classification system, identification of key contributing factors, and prioritization and systematic implementation of recommendations
- Create or strengthen national, subnational and facility joint QI/MPDSR committees for alignment and coordination of MPDSR-specific and broader QI processes across system levels
- Motivate health workers and engage professional associations to support MPDSR and apply the benefits in their daily work
- Support systematic surveillance, notification, and tracking of all institutional deaths
- Promote a no-blame culture with legal protections
- Promote availability of standardized death audit forms in all facilities, with standardized cause of death categories
- Promote standardized “response” processes, including systematic follow-up and tracking of audit recommendations across system levels
- Incorporate surveillance results from maternal and perinatal death audits into mortality surveillance in health management information system and civil registration and vital statistics

“Everyone attends our maternal and perinatal meetings all the way to the driver. Because then we have a case to transfer, he knows why we need to move now.”
-Sister in Charge, Maternity Ward



Continued assessment and monitoring of MPDSR implementation is necessary to clarify the generalizability of assessment findings and to deepen understanding of the quality of MPDSR processes to inform country implementation, global recommendations, and the development of materials to support high-quality MPDSR processes at the subnational and facility level. The complete findings of this assessment are expected to be published by MCSP in 2018. The following country reports are accessible online:

- Nigeria: <https://www.mcsprogram.org/resource/assessment-maternal-perinatal-death-surveillance-response-implementation-ebonyi-kogi-states-nigeria/>
- Rwanda: <https://www.mcsprogram.org/resource/assessment-maternal-perinatal-death-surveillance-response-implementation-rwanda/>
- Zimbabwe: <https://www.mcsprogram.org/resource/assessment-maternal-perinatal-death-surveillance-response-implementation-zimbabwe/>

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