Using a Quality Improvement Collaborative approach to accelerate MPDSR activities in Kampala: Lessons from participating healthcare facilities

The USAID Maternal Child Health and Nutrition (USAID MCHN) Activity

The USAID MCHN Activity is a five-year program (January 2020 to December 2024) funded by USAID/Uganda to improve maternal, newborn, child health and nutrition (MCHN) outcomes in Uganda. This is achieved through provision of targeted technical support at national and subnational levels to (1) develop and rollout MCHN strategies, and high-impact practices and interventions; (2) strengthen coordination and cooperation within and between Government of Uganda (GoU) sectors; and (3) increase the use of data for planning, decision making and learning. The Activity also supports improved delivery of MCH and Nutrition services in Kampala particularly for the urban poor, through strengthened service delivery systems in the public and private sectors. The MCHN Activity closely collaborates with government of Uganda (GoU) structures at all levels, private sector entities, other USAID-supported Activities, and development partners to both support and leverage their efforts to improve MCHN outcomes in Uganda.

The MCHN Activity is implemented by a consortium led by FHI 360 that includes EnCompass LLC, Makerere University School for Public Health, Save the Children, and the Uganda Healthcare Federation.

Background

Kampala Capital City had unacceptably high institutional maternal and perinatal mortality rates at 223/100,000 live births and 40/1,000 live births compared to the national averages of 100/100,000 live births and 23/1,000 live births respectively in FY2020 (July 2019 to June 2020). This accounts for 11% of all reported maternal deaths, and 20% of total reported perinatal deaths in the country (DHIS2 FY2019/2020).

The Ministry of Health (MOH) advances Maternal and Perinatal Death Surveillance and Response (MPDSR) as a quality improvement approach for reducing maternal and perinatal deaths. The aim is to collect and utilize the information on avoidable factors associated with the deaths to guide appropriate responses that would avert future deaths. The MPDSR guidelines recommend death notification to the facility in-charge within 24 hours and to the district/national level within 48 hours, while death review should be done within 7 days following death occurrence (MoH 2017). Perinatal death reviews include all pregnancy outcomes, neonatal deaths, macerated still births (MSBs) and fresh still births (FSBs) of gestational age above 28 weeks and below 7 days. Although there have been some improvements in notification and review of maternal deaths over time, the rate of progress is still slow, particularly with the perinatal deaths.

The MCHN Activity supports a quality improvement (QI) collaborative to increase notification and reviews of maternal and perinatal deaths through generation and sharing of learnings at 15 health facilities in Kampala that reported more than 3 perinatal deaths in quarter 1 of FY2021.

Quality Improvement Collaborative Objectives

1. To improve the rate of perinatal and maternal deaths reviewed from 7% and 62% in January 2021 to 50% and 100% in December 2021, respectively.
2. To generate and share learnings on how to conduct quality maternal and perinatal death review processes.

MPDSR Support Processes

25 October 2021

The healthcare facilities participating in the MPDSR QI collaborative include 6 public, 5 private not-for-profit (PNFP) and 4 private for-profit (PFP) facilities[1].

First QI collaborative learning session: In January 2021, we conducted the first collaborative learning session for one day to orient work improvement teams (WITs) from participating facilities on the MPDSR QI collaborative objectives and approach. This was followed by weekly facility level visits by MCHN Activity QI coaches to assist WITs in problem identification and analysis, developing and implementing changes ideas, capacity building, documentation, and monitoring improvements on run charts.

Problem identification and analysis: After the first learning session, the QI coaches supported WITs to conduct a root cause analysis to identify the factors hindering maternal and perinatal deaths notification and reviews at participating facilities.

The key problems identified included:

- Lack of death notification and review forms
- Inadequate knowledge of midwives on MPDSR processes
- Lack of interest and poor attitude towards reviews by team members
- Review meetings not held due to lack of quorum of the committee members
- In some health facilities like Kawempe NRH, the many perinatal deaths and high workload made it difficult for service providers to secure adequate time to review all deaths

Develop change ideas and implementation plans: The facility WITs held regular meetings facilitated by QI coaches to discuss the identified problems and develop appropriate change ideas and plans for implementation.

Capacity building: QI coaches with support from MoH consultant obstetrician provided on-the-job orientations to midwives on filling in notification forms and conducting the reviews, to address knowledge gaps in MPDSR processes.

Documenting and monitoring progress: WITs used documentation journals to monitor progress of process indicators on cases reviewed against change ideas implemented. The MCHN Activity M&E department shared weekly data from HMIS 033B, and monthly data from HMIS 105 and the DHIS2 event tracker data with the QI coaches to track progress in maternal and perinatal notification and reviews. These data are reviewed by facility teams, especially top management, who assign responsible persons to review the maternal and perinatal backlogs if any.

Second QI collaborative learning session: The MCHN Activity organized a second learning session for two days in September 2021 for teams from the 15 health facilities to learn from each other on what works or does not work in conducting MPDSR notification and reviews, to support replication of the effective changes in the various facilities. The six public health facilities and one PNFP facility shared their storyboards, including their improvement objectives, change ideas implemented, and current progress.

Change Ideas Implemented

Health facilities tested several change ideas to improve the MPDSR process. Annex 1 highlights the tested changes per health facility that could potentially be replicable in other facilities with similar settings and challenges. The following are highlights of some of the most effective change ideas implemented in the health facilities:

[1] These are Kawempe National Referral Hospital (NRH), Naguru Regional Referral Hospital (RRH), Kisenyi Health Center (HC) IV, Kawala HC IV, Kisugu HC III, Komamboga HC III, Nsambya Hospital, Mengo Hospital, Rubaga Hospital, Mukwaya General Hospital, St. Stephens Hospital, Kiganda Maternity Centre II, Bwaise HC II, Prime Medical Centre, and Benedict HC IV.

Kawempe NRH has the highest number of deaths. To better manage the workload, the MPDSR committee and senior management agreed to conduct daily review meetings led by midwives, with the involvement of intern doctors and senior house officers. In addition, senior management also started weekly MPDSR meetings held every Monday to share and review what transpired during the previous week and to give guidance and commitments on a number of issues that arise from the reviews of the week. In these meetings, recommendations are made and then hospital units, WITs, and consultants follow them up.

KNRH daily review meetings led by midwives, with involvement of intern doctors and senior house officers.

1. Placing notification and review forms at the nurses station and work tables to increase accessibility and trigger use.
2. Shifting responsibility for completing notification forms and leading perinatal death review meetings to midwives and building their capacity to perform these roles.
3. Forming smaller, and therefore more manageable, review groups led by midwives and supervised by specialists where available.
4. Holding more regular MPDSR review meetings: most facilities started holding weekly, bi-weekly or daily review meetings of one hour.
5. Train records personnel to navigate events tracker in the DHIS2 system
6. Hospitals with high cases of perinatal deaths prioritized FSBs and early neonatal deaths (ENDs) for review
7. Assigning focal persons to mobilize for and spearhead the reviews
8. Direct online entry of notifications and reviews during the review meetings in Naguru Hospital to reduce delays of entering this data into the DHIS2 system. The focal person was given access to the events tracker.
9. Data clerks display/pin up weekly lists of pending death reviews (Figure 1) to remind the WIT/MPDSR committee to do the audits. This has tremendously improved the MPDSR reviews in Kawala HC IV, from 0% to 80% in January and August 2021 respectively.

Figure 1: Display of pending perinatal deaths reviews

Process Results

Overall, maternal death reviews in the participating facilities increased from 62% in quarter one (Q1) FY2021 to 93% in quarter three (Q3) FY2021, while perinatal death reviews rose from 7% to 81% during the same period (Figure 2).

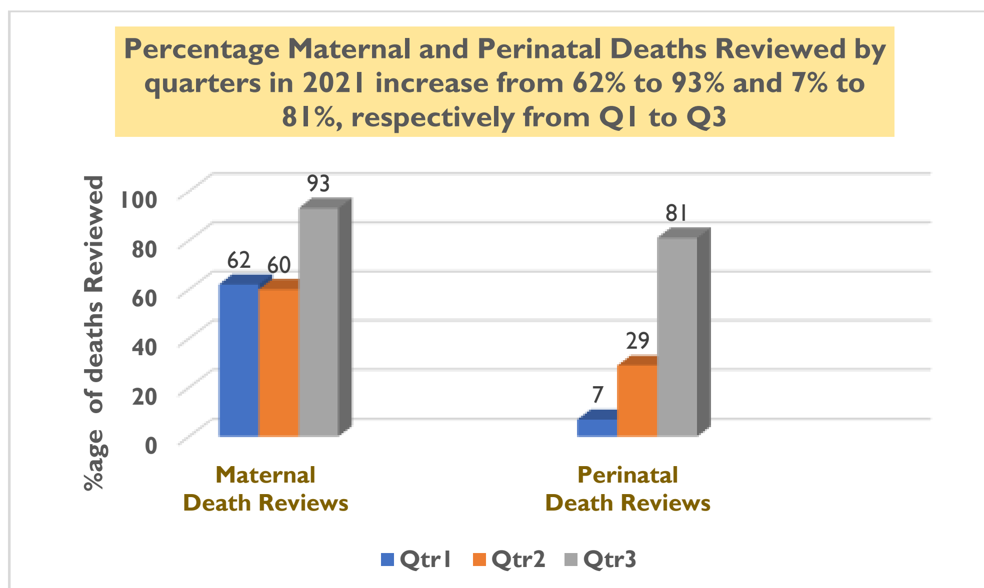

Figure 2: Percentage maternal and perinatal death reviews

Perinatal death reviews improved markedly at lower-level health facilities such as Kisenyi, Kawaala, and Kitebi health centres, from 0% in Q1 to 100%, 80%, and 70% in Q3 respectively (Table 1). At Kawempe NRH, the perinatal deaths notifications increased from 64% to 100%, while reviews improved from 5% to 58.3%, above the national target of 50%, from January to July 2021 respectively.

Persistent challenges in MPDSR notification and reviews

Although the deaths notifications and reviews have increased, there are still persistent challenges affecting the effectiveness of the processes, and these include:

1. The perinatal death notification and reviews often do not happen on time (within 24 hours and 7 days respectively) and they are entered late in the DHIS2 system causing a backlog.
2. The lower-level facilities are limited in the technical capacity to conduct quality MPDSR. These facilities rarely get maternal deaths since complicated cases are normally referred to hospitals for better management. However, the perinatal death reviews are usually conducted by a few (2-4) midwives who document circumstances surrounding the deaths without in-depth interrogation and analysis of the possible causes of deaths.
3. Inadequate documentation in the patient files and maternity register, which are the primary sources of data that support death reviews.
4. Stable internet connectivity is required for entry into the DHIS2 system, and this remains a challenge in many facilities.
5. The implementation of recommendations following the reviews is still not optimal due to lack of resources.

Implementation of the MPDSR recommendations

Translating recommendations into actions was a challenge in most health facilities, both public and PNFP, especially for the recommendations that require funding and an increase in human resources

(Table 1). However, some facilities like Naguru Hospital and Kisugu HC III utilized Results-Based Financing (RBF) funds to procure required equipment and supplies.[2]

Table 1: Implementation of recommendations from MPDSR

Identified avoidable factors leading to deaths	Recommendations	Implementation of recommendations
Delay of pregnant women to seek care due to various reasons including poor knowledge of danger signs during labor, especially by adolescent mothers	Community level sensitization through outreaches, VHTs, and ANC	Outreaches are not done due to inadequate facilitation Some facilities have engaged VHTs ANC sensitizations carried out in all facilities
Delayed referral from lower level health facilities and clinics	Feedback to lower level facilities and clinics	Challenges in implementation due to limited human resource and transport facilitation. Kawempe NRH invited the main referring facilities to participate in virtual weekly deaths reviews
Limited knowledge and skills of health workers in management of obstetric and perinatal complications	Continuous medical education (CME)	CMEs are done in health facilities. Lower level facilities require more support from higher level
In adequate numbers and mix of human resources in maternity, neonatal units, and operation theatres.	Management to increase numbers and mix of human resource	No new staff recruited during the QI collaborative period
Limited medical supplies (including blood products) and equipment for monitoring of vital signs	Management to provide medical supplies, and equipment such as Ultra sound scan and laboratory equipment	A few facilities like Naguru hospital and Kisugu HC III have used RBF funding to procure some equipment.

Translating action through community visits to improve timely health-seeking behaviors was also not easy. Sensitization of mothers happens in ANC clinics and before discharge in all health facilities. In most facilities, there are separate ANC clinics for adolescents. A few lower-level facilities have VHTs attached to the facilities whom they engage in conducting community sensitization. However, it was difficult to ascertain whether VHTs were able to do the sensitizations. Outreach activities by health facility staff are limited to immunization and family planning, but these activities are affected by lack of transport and funds for staff allowances

Key Lessons

The following are the key lessons noted so far in the implementation of the MPDSR CQI:

- Teamwork and leadership are required for better performance and sustainability
- Capacity building of midwives to lead/conduct MPDSR reviews greatly improved the performance
- Direct entry of reviews in the DHIS2 system improves timely reporting of the notifications and reviews

[2] Naguru Hospital used RBF funds to procure patient monitors, an autoclave, buffer stock for emergency drugs, surgical operation lights, and curtains to improve patient privacy. One operation theatre was tiled to improve infection control in the unit. The funds were also used to carry out trainings for obstetric emergencies and for staff allowances. Kisugu HC III used RBF funding to procure an ultrasound scan (USS) and Haematocrit machines to improve on maternal and perinatal monitoring during pregnancy, childbirth and the immediate postnatal period. However, the facility lacks a sonographer and given the late and unpredictable receipt of RBF funds, the facility has not been able to recruit one.

- Implementation of the recommendations from the reviews (the response) requires resources and RBF funds can address some of the resource needs

Recommendations for sustainability

1. All midwives should be oriented on MPDSR processes. However, in order to improve the quality of reviews there should be a mechanism of support supervision from more technical personnel, e.g., from district level to lower-level facilities that do not have specialists
2. All health facilities should be given access to the DHIS2 system to enter their reviews directly in order to improve on timely reporting of death notifications and reviews. However, health facilities should be encouraged to also document on hard copy and keep a record on file at the facility for reference in view of internet connectivity challenges in many of the facilities.
3. Facilities should be encouraged to use RBF funding to support implementation of the recommendations following the MPDSR reviews. However, there should be improvement in timely disbursement of funds to health facilities to enable them to plan accordingly.

Author contact information:
MakSPH
Gertrude Namazzi gnamazzi@musph.ac.ug
Kajjo Darious kjjdarius@gmail.com
Doris Kwesiga dknnkwesiga@gmail.com
Joseph Akuze jakuze@musph.ac.ug
Peter Waiswa pwaiswa@musph.ac.ug
FHI360
Richard Kagimu rkagimu@fhi360.org
Hassan Kato hkato@fhi360.org
Sharon Tsui stsui@fhi360.org
David Wendt dwendt@fhi360.org
Patrick Walugembe pwalugembe@fhi360.org
Nathan Tumwesigye ntumwesigye@fhi360.org

MCHN Project Contact Information:
FHI 360 Uganda
Plot 15 Kitante Close, PO Box 5768
Kampala, Uganda
Telephone: +256.312.266.406
Fax: +256.312.266.407
MCHNinfo@fhi360.org

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Annex 1: MPDSR change ideas implemented, and process results in the six public health facilities and one PNFP hospital in Kampala

Change ideas implemented per health facility	Process results
Kawempe NRH:	
• Availed notification booklet/forms to each notifying staff and also placed some booklets on maternity & SCU front desk/ station for easy access • Task shifting- midwives can fill notifications forms after a doctor certifies death. - All notified files are labeled to avoid repetition - All quality improvement members are part of the review team as supported by the in-charge and FHI QI personnel. - The WIT also works closely with records personnel • Capacity building on MPDSR guidelines and tools. • Smaller perinatal deaths (PDs) review groups meeting for 1hour-daily, midwife led and supervised by specialists • Prioritized intrapartum deaths (FSBs &END) deaths for review. • Sorting files for reviews and assigning focal persons for PDSR at wards weekly • Specific records personnel assigned for entry • Involvement of intern doctors (filling in the first 2 pages) and senior house officers for reviews • Immediate handing over of completed review forms to records assistant to enter in DHIS2	Perinatal deaths notifications improved from 60% in February to 100% in July 2021. PD reviews improved from 5% to 58.3% in the same period Maternal deaths (MDs) notification improved from 14% in February to 118% (exceeded 100% due to backlog) in July 2021. While the MD reviews improved from 80% to 100% in the same period
Naguru RRH	
• Focal persons identified and assigned responsibilities on a rotational basis • MPDSR standard operating procedures designed and displayed • Obtained access rights to DHIS 2 • Computer placed in maternity offices to enable direct entry in DHIS2 • Orientation of staff/midwives on MPDSR processes • Trained intern nurses to support filling in of notification forms	Perinatal death notifications and reviews improved from 11% & 7% in January 2021 to 90% and 93% by August 2021 respectively Maternal deaths notification and reviews are 100%
Kisenyi HC IV	
• Having a timetable for the monthly PDSR chair/focal person (midwife- rotational) • The focal person following up entry of review details by the records person. • Notification forms kept at the various service points (SCU, PNC and labor suite) • Holding weekly PDSR reviews every Thursday	Perinatal death reviews improved from 11% in January 2021 to 100% by August 2021
Kawaala HC IV	
• Photocopied notification and audit forms to address stock-outs • Obtained HMIS perinatal review forms from FHI and placed them at maternity/labour suite • Orientation on MPDSR forms and processes • Data clerk pinning up list of pending unaudited deaths and reminding the team to audit • Perinatal deaths discussed in every WIT meeting, including near misses • Conducting audit meetings with a few available staff	Perinatal death reviews improved from 0% in January to 80% in August 2021
Kitebi HC IV	

Change ideas implemented per health facility	Process results
• Conducted orientation on importance of audits and perinatal forms (notification and review forms) through a departmental meeting. • Formed WIT to have weekly reviews and also discuss other QI work progress. • Nominated focal person to monitor MPDSR Processes and mobilize WIT for MPDSR meetings. • Peer-to-peer support to ensure instant notifications.	Perinatal deaths reviewed improved from 0% in January 2021 to 70% by August 2021
Komamboga HCIII	
• Requisition for death notification and audit books (to ensure availability) • Placed the notification and audit book on the work staff table (for accessibility) • Conducted CME about death notification and audit /review • Selected a focal person for MPDSR who follows up with the team to ensure reviews are done • At least three midwives with a focal person conduct death reviews • The midwife on duty reports any death to the in-charge immediately (phone call or physical) • The midwife takes the review form to records person who enters data into DHIS 2 immediately • Maternity in-charge compiles MPDSR report and keeps a copy in the file	Perinatal notification and reviews improved from 0% in January 2021 to 90% by August 2021.
St. Stephen's hospital	
• Identified a focal person for MPDSR to follow up on maternal and perinatal deaths reviews weekly • A midwife who delivers an MSB/FSB above 28 weeks of gestation notifies immediately and takes the notification form to records person (within 24hrs). • The Midwife on duty reports any death to the in-charge and QI focal person immediately (phone call or physical) • The maternity in-charge schedules for the death review within the week of death • At least 2 midwives conduct the Audit for FSB/ MSB • The Doctor leads the maternal death audit within 3 days • The Records person enters data into DHIS 2 immediately after the review • The QI focal person compiles MPDSR report and keeps a copy in the file	Perinatal death reviews improved from 20% in January 2021 to 100% by August 2021