maniQC
Quality of Care

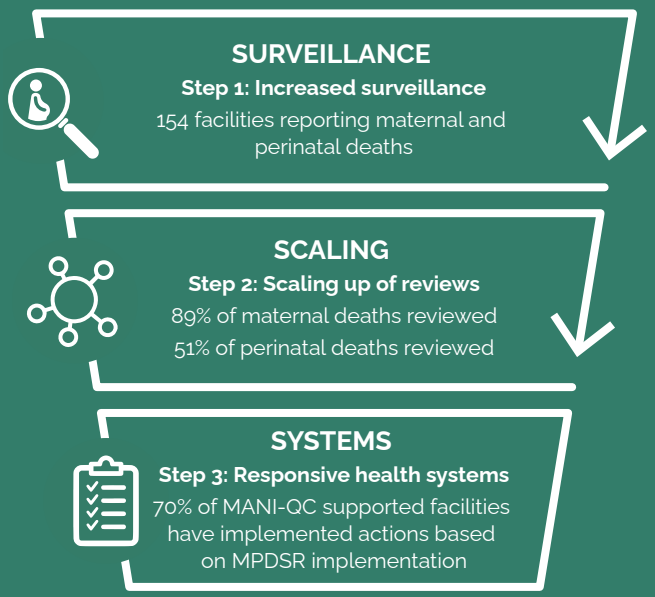
Learning brief

Making every death count: Strengthening maternal and perinatal death surveillance and response (MPDSR) to improve the quality of maternal and newborn care

Key Results

Over the 3-year project period and through MPDSR committees, there has been an increase in:

- surveillance and reporting of deaths;
- production of quality reviews; and
- evidence-based prioritisation and implementation of identified gaps and actions.



Introduction

Kenya is among the sub-Saharan countries with a high maternal mortality ratio (MMR) with an estimated 362 deaths per 100,000 live births every year. The perinatal[1] and neonatal mortality rates are also unacceptably high at 29 and 22 deaths, respectively, per 1,000 live births a year.[2] The Maternal and Perinatal Death Surveillance and Response (MPDSR) system collects valuable information on these mortalities to inform policy action to be taken to prevent future deaths from the same circumstances.

The 2016 Kenya National MPDSR guidelines outline a multi-level review and feedback loops that should be implemented so that information about these deaths flows from the community to the national level. Our Maternal and Newborn Health – Quality Improvement (MANI-QC) project has been funded by UK Aid to strengthen this system from the facility, sub-county, county, and national levels. This brief explains our approach, key achievements, and lessons.

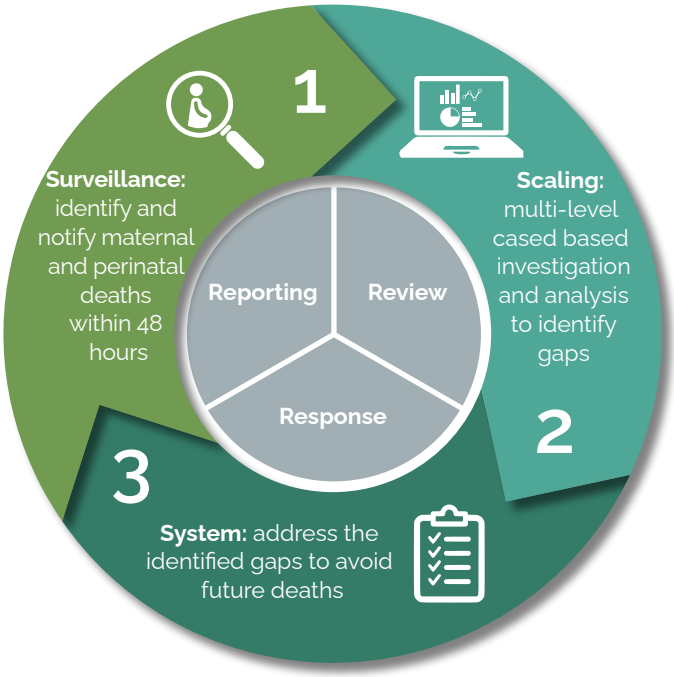
Approach

The MANI-QC team have supported county health management teams (CHMTs) to establish MPDSR systems in Kericho, Kwale, Mombasa, and Nandi counties. In September 2019, 145 trainers of trainers (TOT) completed a 3-day MPDSR training module that they cascaded to frontline health care workers from 154 health facilities (70 project targeted facilities and 84 non-projects supported facilities). The training reached a total of 341 healthcare workers across the 4 counties. MPDSR committees were then formed at facility, sub-county, and county levels, and review meetings started in October 2019.

A 3R's reporting, reviewing, and response approach for implementing the MPDSR in the four counties was adopted. This involved providing technical assistance for improving reporting surveillance through notification of maternal and perinatal deaths, a multi-level case-based investigation and analysis and response plans are agreed upon by the committees depending on the level of review and actions needed.

See figure 1 illustrating this framework used to roll out the MPDSR reviews.

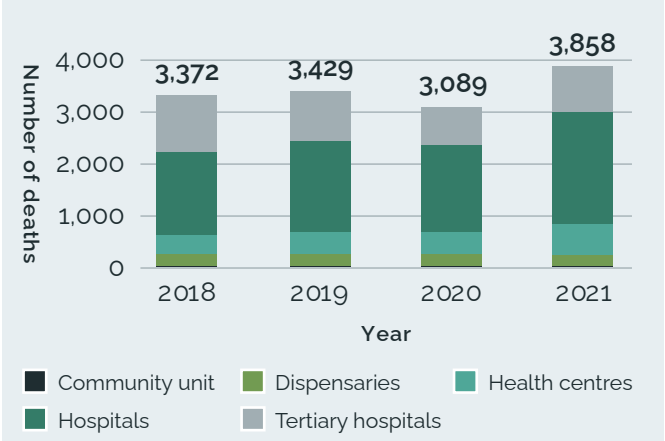
Figure 1: Framework for rolling out MPDSR



Reporting

Most reported deaths occur in hospitals. Through the MANI-QC project, we have supported increased surveillance and timely reporting of both maternal and perinatal deaths. This was achieved by working with MPDSR committees to improve reporting of all mortalities in tertiary facilities by mapping which departments were most likely to have reported deaths and integrating representatives from those departments to the MPDSR committees. The majority of facility deaths were identified from the patient registers used in the labour ward, theatre notes as well as the delivery, postnatal and neonatal registers. One result as an example, is that overall, there has been an increase in reporting of perinatal deaths between 2018 and 2021, as shown in graph 1.

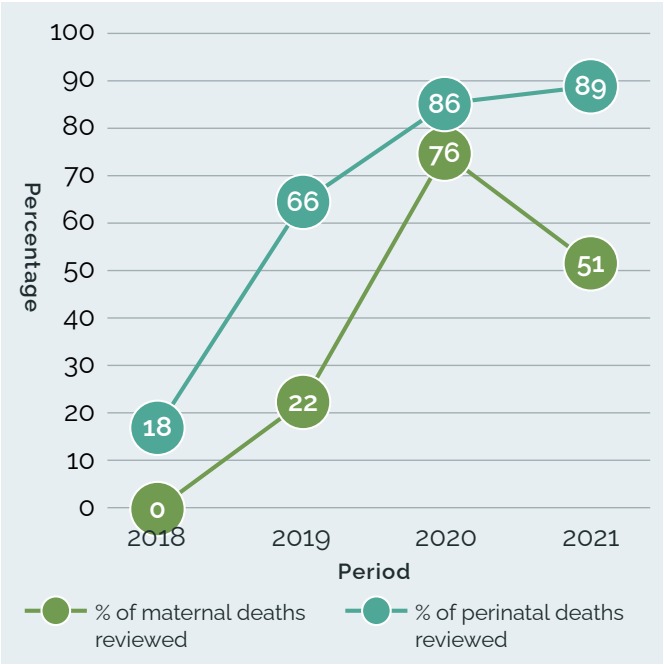
Graph 1: Perinatal mortality coverage by facility level in 4 counties



Review

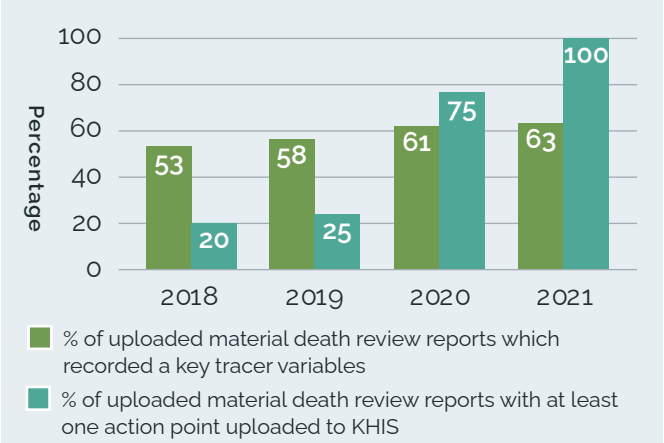
The project provided technical support to the County Health & Records Information Officers to ensure each death was reviewed and the forms uploaded in Kenya Health Information System (KHIS). This led to an increase in the proportion of death reviews uploaded between 2018 to the end of 2021 by 71% percentage points and for maternal deaths and by 51% percentage points for perinatal deaths, as shown in figure 3 below.

Graph 2: Maternal and perinatal deaths reviewed and uploaded from 4 counties 2018 - 2021



The quality of reviews has also improved, allowing for a more in-depth analysis to inform resource allocation and prioritisation decisions. In Nandi county, for example, the proportion of maternal death review reports uploaded to the KHIS increased from 20% in 2018 to 100% in 2021, and there was a 19% increase in the proportion of reviews uploaded that recorded eight key tracer indicators over the same period.

Graph 3: % of maternal death review reports uploaded to the Kenya health information system in Nandi county



Additionally, the county and sub-county MPDSR committees invited representatives from facilities that reported deaths in their review meetings every quarter, which make it possible to hold discussions among the facilities' leadership on key actions the facilities cannot undertake.

Response

Among all 70 facilities where training on MPDSRs was provided, 70% (49) had implemented action points from MPDSR reviews during the 3 years of project implementation. The nature and type of actions varied in time and level of resource investment required - see box 1 for examples of different types of actions implemented.

Box 1: Examples of actions implemented as a result of the MPDSR process

- Procurement of 5 patient monitors for high-volume facilities providing comprehensive emergency obstetric and newborn care in Kwale county.
- Procurement of 6 ambulances in Kericho and 10 in Nandi county, which increased referrals, coordination and zoning of ambulance operations in Nandi, Kericho and Kwale counties.
- Operationalisation of 6 sub-county hospital theatres in Kericho and Kwale counties (3 per county).
- Establishment of quarterly targeted dialogue days, which are caried out by Mombasa sub-counties community focal persons, to sensitise mothers on the importance of antenatal care.
- Improved availability and utilisation of blood components in maternity departments in all counties.
- Establishment of a newborn unit in Kericho county Sigowet sub-county hospital.

Intense technical support was provided to high-mortality facilities to increase surveillance in key departments such as the newborn unit, maternity and antenatal clinic, and postnatal ward. The project team also engaged high volume faith-based and private hospitals in sub-county review meetings to present actions that required the attention of the sub-county and county health management teams.

MPDSR reviews revealed that haemorrhage remains the highest cause of mortality in the 4 counties (see case 1). In response, our project has provided support to counties to improve the availability of blood services. This includes conducting haemovigilance trainings, intensive blood collection services, and integrating MPDSR reviews with haemovigilance-related audit meetings at all levels. Counties like Kericho and Kwale have prioritised in their workplans to strengthen all sub-county facilities' capabilities to provide comprehensive theatre and blood transfusion services. To enable operationalisation of the theatres, they decentralised senior staff and deployed professionals such as obstetricians at the sub-county hospitals.

Case report 1

A 30-year-old, mother of 2 presented at term. The mother delivered on the way to the hospital and developed a postpartum haemorrhage due to a retained placenta. She was admitted to hospital in shock without having access to a safe blood transfusion. Resuscitation was attempted but was not successful.

However, due to a lack of funding, several actions cannot be implemented and thus reoccur in the reviews. For instance, the construction and equipment of maternity theatres in major referral hospitals in Kericho and Nandi counties has not been possible due a resource constrains. See case 2.

Case report 2

A 23-year-old mother of two, was referred from a dispensary to a sub-county hospital with obstructed labour with an intra-uterine foetal death. The mother required an emergency Caesarean section, but the sub-county theatre was not operational. The woman was later referred to a county hospital but died due to a ruptured uterus because of the delayed operation.

Kericho recorded a 3 to 4-fold increase in maternal deaths from 3 or-4 per quarter to 11 between July to September 2020. The review of these deaths unearthed that most delivery-related emergencies occurred at the main referral hospital when the main referral theatre was already engaged with other surgical emergencies, which led to significant delays that resulted in maternal deaths. In its long-term strategy, the county MPDSR review committee unanimously agreed to establish a specialized and dedicated maternity theatre. But this is a resource-intense action and could not be achieved immediately.

There continues to be a significant gap in the provision of quality antenatal care that identifies at risk mothers. An internal project analysis of maternal deaths between 2019 and 2020 in the four counties revealed that 43% of maternal deaths occurred among mothers who had more than 4 ANC visits.[3] Case 3 below provides a further overview of undiagnosed cases that can be prevented through good quality antenatal care.

Case report 3

A 26-year-old mother of two was found upon admission to hospital with an undiagnosed twin pregnancy despite having attended 3 ANC appointments. She delivered her first twin in a remote area at night assisted by Traditional Birth Attendant. The first twin was delivered as a normal vaginal delivery but there was a delay in delivering the second twin. Both twins were born alive. The mother haemorrhaged after the delivery of the second twin. No transport was available to her at night and she arrived in poor condition in a mission hospital and died withing 15 minutes.

Lessons learnt

- Strengthening and embedding MPDSR reviews as a routine practice at all levels of the health system increases teamwork and collaboration between the county and the sub-county leadership in decision making and improves the quality of care for women and babies.
- Providing quality of care requires strengthening processes for early identification of at risk mothers.
- Increased surveillance for maternal mortalities within key facility departments led to increased facility reporting of maternal and perinatal deaths.
- The MPDSR process generates evidence from frequent reviews and led to a quicker response to take action in the health system to overcome identified gaps.
- Resource-intensive actions requiring heavier investment take longer to implement and require strong engagement between county and national health leadership teams.

Recommendations

- Kenya's national MPDSR guidelines need to be updated to incorporate technology to simplify mortality reporting and to link the MPDSR tracker to the Ministry of Health Integrated Summary Report (MOH 711).
- There is a need to embed MPDSR as a routine quality improvement initiative at health facilities as a bottom-up approach of MPDSR generates rich information for improving the quality of care.
- Integrating haemovigilance activities within maternal and neonatal health activities will enhance haemorrhage management, which remains the top cause of maternal deaths, including involving haemovigilance committees in MPDSR processes.

References

1 Perinatal deaths include stillbirths and early neonatal deaths within the first 7 days after delivery.

2 Kenya Demographic Health Survey 2014.

3 Maternal Death Analysis 2019-2020.

The Maternal and Newborn Improvement Quality of Care (MANI-QC) project is a 3-year funded project by UK Aid focusing on improving the quality of health services for mothers and babies in four counties in Kenya: Nandi, Kericho, Mombasa and Kwale with the aim improving maternal and neonatal survival through a health system strengthening approach.

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January 2022

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Funded by: UKaid from the British people

Contact us

options.co.uk
info@options.co.uk

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