COMMENTARY

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Confidential review of maternal deaths in a South Indian state: current status and the way forward

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Background

Globally, the maternal mortality ratio (MMR) fell from 385 in 1990 to 216 per 100,000 live births in 2015, with huge variation across countries.[1] The Sustainable Development Goal (SDG) target 3.1 aims to reduce the global MMR to less than 70 per 100,000 live births by 2030. In India, the MMR declined by 69.3% from 398 per 100,000 live births in 1997–1998 to 122 per 100,000 live births in 2015–2017.[2–4] There is a huge variation in maternal deaths across different states of India.[4]

In 2005, the National Rural Health Mission was initiated. It adopted key strategies such as skilled attendance at all births, essential obstetric and newborn care for all, emergency obstetric care when complications occur, and referral services to reduce maternal deaths.[5] Analysis of data from four rounds of District Level Household and Facility Surveys (DLHS) concluded that strengthening of public health infrastructure and demand-side interventions like *Janani Suraksha Yojana* increased the uptake of institutional delivery among women from disadvantaged socio-economic groups.[6]

India has made tremendous progress by achieving a 77% decline in MMR between 1990 and 2016.[7] Institutional births in India doubled from 38.7% of all births in 2005 to 78.9% in 2015.[8] Improvements in institutional births, integrated with community-based interventions, reduced maternal deaths due to direct causes. In future, most maternal deaths are likely to be due to indirect causes and to occur in hospital settings.[9] However, while the country is said to be on track to achieve the SDG target 3.1, India will face challenges such as older age at first birth and an increasing burden of non-communicable diseases.[10] Due to gaps in the civil vital registration system, India relies heavily on Sample Registration System data to monitor the trend of MMR. Establishing a system to accurately document, report, and respond to all maternal deaths is considered a critical starting point to track progress towards achieving SDG targets.[11]

Tracking maternal deaths

Maternal death review in India

Maternal death review (MDR) was considered one of the key components of planning and monitoring to understand the burden of maternal deaths in a community, monitor the trends over time, and evaluate the impact of interventions. In 2011, WHO conducted a study on the implementation of maternal death review in India which found that out of 28 states/Union Territories reviewed, only six had fulfilled the criteria fixed for MDR. The study recommended that the Tamil Nadu model of facility-based reviews, combined with a community-based verbal autopsy, be used for further scale-up across India. The study also observed that the confidential feature of the MDR in Kerala was functioning well.[12] Subsequently, MDR was scaled up to cover all Indian states. Analysis of the progress of implementation of MDR identified gaps like poor reporting, lack of quality, and that the review findings were not translated into action.

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Transition to maternal death surveillance and response

Confidential enquiries into maternal deaths have been successfully implemented in countries such as the United Kingdom (UK) for more than 50 years.[13] A similar strategy implemented in Malaysia suggests that enquiries should be confidential and non-punitive to ensure success in improving systems.[14] The state of Kerala adopted the UK model of confidential enquiries in 2004. Confidential review was carried out by the Kerala Federation of Obstetrics and Gynaecology (KFOG) with support from the Government of Kerala. Based on the findings of the confidential review, the following areas were prioritised for further improvement: (1) training healthcare staff on the safe conduct of labour with practical hands-on training; (2) developing simplified standard guidelines and protocols; (3) streamlining of referral transport; and (4) improving availability of essential drugs in primary health centres. Review findings identified haemorrhage and hypertension as key areas and proposed five intervention steps to manage these conditions. These interventions were also pilot tested in eight hospitals. After six months, drops were observed in referrals to tertiary care centres for severe postpartum haemorrhage and in admissions due to hypertensive disorders.[15]

WHO launched the Maternal Death Surveillance and Response (MDSR) in 2012. The main aim of the MDSR is to reduce future preventable maternal mortality via "continuous action and surveillance cycle of identification, quantification, notification and review of maternal deaths followed by actions to improve quality of care and prevent future deaths".[16] In 2017, the Government of India switched from MDR to MDSR. MDSR also incorporated the confidential review and adopted "no name, no blame" as a key principle.[17,18] Confidential review is based on the premise that the actual cause and circumstances of death can be ascertained better if there are anonymity and immunity from punishment for the clinic team.[18]

According to MDSR guidelines, the confidential review is designed as a multidisciplinary investigation of randomly selected maternal deaths to identify preventable causes and initiate action to prevent future deaths. The guidelines recommend that state governments set up a Committee for Confidential Reviews of Maternal Deaths comprising experts in relevant domains. The committee is expected to meet quarterly and review the anonymised case sheets and other relevant documents and records.

Even though the confidential review mechanism is recommended for all states, the guidelines state that this method will be particularly beneficial for states with a low MMR since most deaths are likely to be due to indirect causes. While confidential review is mainly used for examining medical issues, MDSR guidelines also mention the role of social and cultural factors contributing to the first and second delay leading to maternal deaths. The guidelines recommend that the district collector/magistrate review action on social determinants of health *"where the mandate is not limited to the health department and where interdepartmental coordination is required"*.[17]

Current practice of confidential review of maternal deaths in a South Indian state

We searched the internet using Google for English and local language newspapers reporting on maternal death reviews. Newspaper reports from, a South Indian state with high institutional delivery and low MMR, were reviewed for implementation of confidential review as part of maternal death surveillance and response. Where multiple news reports are available for a specific case, we went through all of them to ensure consistency and accuracy of information. We describe five case scenarios below to illustrate the current status of the confidential maternal death review.

Case scenario 1: In 2018, a pregnant woman was admitted to a Primary Health Centre (PHC). The report states that the doctor left the health centre while the woman was in labour, and the nurse subsequently conducted the delivery. While conducting the delivery, the infant's head emerged partially but the delivery could not be completed, resulting in complications. Soon the woman was rushed to the block (sub-district) PHC and later referred to the district hospital. Doctors at the district hospital attempted delivery but later declared the death of the woman and infant. The husband filed a case with the State Human Rights Commission, which recommended compensation for the husband. It also initiated disciplinary proceedings against the doctor for not being available during delivery and against

the maternal death audit committee members for absolving the doctor of responsibility. The commission also ordered the state government to strictly monitor doctors' presence to provide 24-hour delivery care in all PHCs.

Case scenario 2: In 2017, a government doctors' association announced a boycott of all the maternal death audit committee meetings as they had *"virtually become a teasing, ragging and fault-finding meeting by administrators leading to a lot of stress among obstetricians and anaesthetists"*.[19] Gynaecologists said they were insulted even when deaths are not preventable. The association's press release further states that the government fails to post (appoint) an adequate number of specialists to maternity care centres. "*Such discussions were never a part of the audit. Some centres with the post of seven doctors have just two. Doctors are made to do a 24-hour duty every alternative day. It is highly stressful mentally and physically to work like that*".

Case scenario 3: In 2019, media reports suggested that at least seven, and up to 15, pregnant women died in three government hospitals in one district in a four-month period. The preliminary enquiry found that blood stored at an inappropriate temperature was given to them, leading to reactions and death. The state health department ordered criminal action and disciplinary proceedings against concerned health staff. However, a month later, a three-member committee probed these deaths and concluded that they were not linked to blood transfusion.

Case scenario 4: A local language weekly magazine reported the admission of a 24-year-old pregnant woman from a village to a government medical college hospital on 8 March 2017. Her routine antenatal check-ups and ultrasound scan reports were normal and labour pains began the following afternoon. According to family members, the senior doctor was not available in the ward and four or five junior doctors conducted the delivery. The report stated that the woman had a prolonged labour and subsequently bleeding from the mouth from biting her tongue. The junior doctors called the senior doctor who came, delivered the baby, and took it to the resuscitation room. While providing postnatal care, one junior doctor identified continuing bleeding from the vagina and another diagnosed bleeding from the uterus. The doctors informed the family that the woman's uterus should be removed to save her life; meanwhile, the baby died due to asphyxia. Despite transfusion with several units of blood, the mother died. The media report did not mention whether the uterus was removed. The medical college dean told the media that the baby died due to asphyxia, and the mother died due to excessive bleeding. The dean also denied the allegations by relatives of deceased women of any negligence by doctors.

Case scenario 5: A senior gynaecologist from a medical college hospital attended the regular maternal death audit video conference chaired by the state health secretary in January 2020. The death of a pregnant woman with chronic hypertension who underwent caesarean section came up for discussion, during which the doctor thought she would be served a notice to provide an explanation. This suggestion caused an outburst amongst the doctors present, and the gynaecologist announced she would resign preemptively. This incident was widely discussed on several WhatsApp groups of healthcare workers across the state. It seems that senior government officials intervened and convinced the doctor not to resign. The senior health official clarified that the doctor has a very good record. She has not resigned.

These case scenarios highlight that maternal death review in the current form tends to lean towards being both fault-finding and punitive. The review findings are not immediately translated into action on improving the health and medical system to prevent future deaths. Healthcare workers involved in maternal health care fear harassment during death audit meetings chaired by state-level health officials. The current practice of "audit" is less likely to identify the actual cause and circumstances leading to maternal death.

The media reports also underscore the non-availability of doctors at the time of delivery. However, the first point of contact in the public health care system is PHCs, where doctors are not available round the clock. In India, and likely many low- and middle-income countries, a doctor-centred approach is not feasible. In such settings, well-trained nurse-midwives can conduct deliveries and refer women with complications to higher centres.[20] The MDSR process could also review how well deliveries and emergency

referrals by trained midwives are handled, to improve future performance. Media reporting of maternal death as seen in these case scenarios was often patchy and incoherent, eliciting a defensive response from healthcare professionals and administrators. Poor quality reporting by a leading local language magazine highlights the need for systematic investigation of maternal deaths, together with clear and transparent communication with the media to clarify findings and to avoid apportioning arbitrary blame on clinical staff. In such scenarios, confidential review of maternal deaths will be helpful in identifying the actual cause of death.

All the case scenarios mentioned above were from the public health sector, where 52% of deliveries are conducted. In contrast, the private sector accounts for one-fourth of deliveries in India,[21] with the remainder of births taking place at home. MDSR guidelines recommend representation from private medical institutions on the state-level committee for a confidential review of maternal deaths. The guidelines also suggest using India's Clinical Establishment Act to improve reporting from the private sector.[17] Recently, the state of Tamil Nadu made it compulsory to register all pregnancies on their online web portal and provide the unique Reproduction and Child Health ID at the time of registration of births. In addition to health facilities, the public was also given access to register voluntarily. Linking pregnancy registration with obtaining birth certificates can support universal registration of pregnancy.[22]

The case scenarios with claims of medical negligence from affected families highlight the legal implications of the MDSR. MDSR guidelines did not include a legal perspective on how to deal with such situations while implementing confidential reviews. There are no institutional mechanisms to deal with cases claiming medical negligence and individual health workers are left to respond to litigation. The implementation of a confidential review mechanism requires establishing a legal aid cell, creating a corpus fund or group insurance to deal with claims of medical negligence, and to adequately compensate families.

Currently, about 50% of maternal deaths occurring in the country are being reported.[17] States with low institutional deliveries and high MMRs are likely to under-report maternal deaths. Hence establishing a system to capture all the maternal deaths for review by the district maternal death surveillance and response committee should be prioritised. States with high MMRs should consider the confidential review of maternal deaths if they meet the basic requirements for MDSR. The Kerala experience suggests that successful implementation of confidential review requires establishing an independent secretariat to coordinate surveillance, intensive training and secure support from hospital administrators.[15]

Our research for this commentary has some limitations. While we aimed to be exhaustive, we may have missed some media coverage. Further, media reports do not generally conduct follow-up reporting on the recommendations and improvements made after the maternal death review meetings. There is a paucity of research on follow-up of actions taken following review of maternal deaths. We recommend that future monitoring and research covers the process of introduction of MDSR in a state, from implementation to follow-up of the recommendations.

Conclusions

Confidential review embedded into the maternal death surveillance and response system can bring systemic changes and prevent maternal deaths without damaging the morale of health professionals. The current Maternal Death Review often remains as a clinical audit, while Maternal Death Surveillance and Response provides an opportunity to address the health system and social factors contributing to maternal deaths. States with low institutional deliveries and high MMRs should establish systems to capture all maternal deaths. States with high institutional deliveries and low MMRs should implement confidential review into maternal deaths to further reduce the MMR. Effective implementation of maternal death review can improve accountability for health outcomes and critically, the health system reforms required to achieve SDG 3.1

Disclosure statement

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