

Maternal Death Surveillance and Response System: Dissemination of 2015 Data



Context

Review of maternal deaths have shown to be a best practice effective in further preventing such deaths and improving maternal care service delivery. Sri Lanka implements a systematic maternal death surveillance with the involvement of key partners to further reduce deaths and improve care. Sri Lanka's system has been recognized even at international level as a role model system replicable in any setting.

In Sri Lanka, maternal deaths were made notifiable in 1985, case reporting to central level started in 1986 and systematic maternal death surveillance and response started in 1995. Family Health Bureau (FHB), at national level, coordinates the surveillance process all over the country with the expertise contribution from professional colleges of obstetricians, anaesthesiologists, community physicians, administrators and forensic pathologists.

Field and hospital health staff notify, conduct post-mortems, investigate and report to the national level with regard to each and every maternal death. At FHB, a database is maintained and comprehensive case scenarios are developed to be reviewed by an expert panel. At district level, each maternal death is reviewed based on 3 delays - deficiencies in seeking healthcare, reaching and treating. A "no-name no-blame" strategy in a confidential frame-work is adopted. A team lead by FHB with an expert review group (representatives from Sri Lanka College of Obstetricians & Gynaecologists and other professional colleges) visited all 28 health regions in the country from February to August 2016. They facilitated confirming maternal deaths and local health staff to suggest strategies for change and improve service delivery.

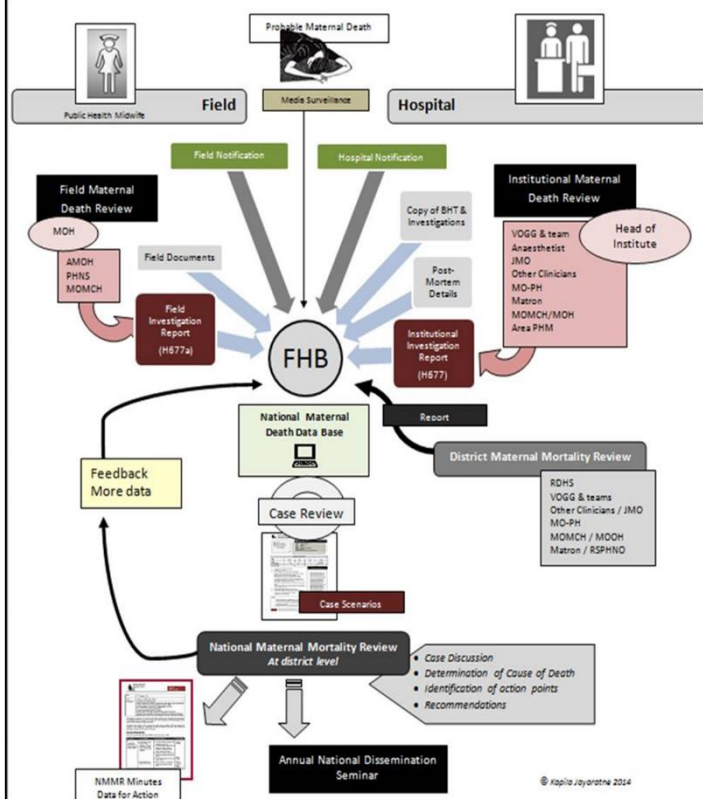
In the year 2015, timely notification of maternal deaths improved to 90%. Coverage of conducting post-mortems was 96%. Receipt of death audit reports achieved 100% prior to conducting national maternal death reviews. Review of all 200 probable maternal deaths reported during the year was 100%. Finally, 113 maternal deaths were identified to calculate the **national maternal mortality ratio** of 33.7 per 100,000 live births.



Notification Criteria:

All deaths (*irrespective of cause*) of women in reproductive age group (15 – 49 years) during the pregnancy period and until one year after termination of pregnancy.

National Maternal Mortality Surveillance Mechanism



Definition of Maternal Death

Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy -from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

National Maternal Mortality Ratio - 2015

- Maternal Deaths = **113**
 - Live Births = **334,821**
- (Registrar General's Dept)

$$\text{MMR} = \frac{113}{334,821} \times 100,000 = \mathbf{33.7 \text{ per } 100,000 \text{ live births}}$$

Detailed Analysis

Maternal Mortality Ratio (MMR) is an overall quality index of a country's socio-economic development and healthcare. Sri Lanka reported a MMR of 1694 per 100,000 live births in the year 1947 and gradually reduced the same over the last few decades to reach levels on par with developed countries. Figure 1 shows the Maternal Mortality Ratio from 1995 to 2015. The significant reduction of the denominator, live births, (14894 in 2015) also contributed to stagnating level of MMR. However, Sri Lanka is well-placed with regard to maternal mortality on par with high income countries. A multitude of interventions, both health and non-health, have contributed to this achievement. Factors such as socio-economic development, free education and related high literacy rate of population, free health services, quality of obstetric care, better transport, control of communicable diseases, well organized primary health care systems etc have been attributed to this success.

Maternal Mortality Ratio 1995 - 2015

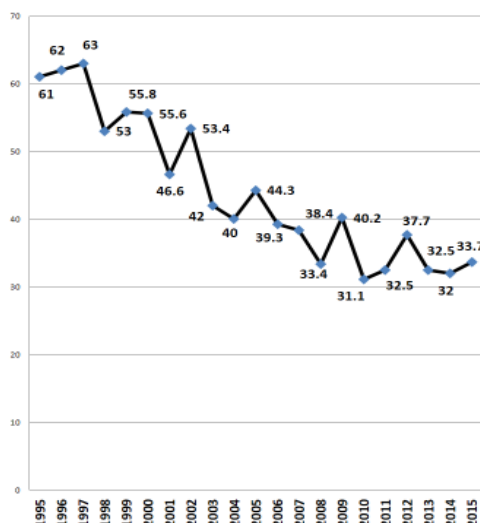


Figure - 1

In the year, 2015, a majority (n=72, 64%) were indirect maternal deaths and direct causes accounted for 41 (36%) deaths. The leading causes of maternal deaths were heart disease, respiratory diseases and obstetric haemorrhage (Figure 2). It is notable the changing causality profile from direct obstetric to indirect medical causes. Cause-specific mortality ratios for almost all direct causes came down. Kurunegala (12), Colombo (11) and Gampaha (10) districts reported higher number of deaths. However, the highest MMR was reported from Mullativu district (02 deaths and live births 1120). Kegalle, Trincomalee and Mannar are other districts with higher MMRs.

Many (72%) women died were from rural and estate sectors. There were many socially-stigmatized pregnancies ending as maternal deaths. Muslim women were at higher risk of dying due to a pregnancy-related cause. A significant proportion (26%) of deceased women were elderly (> 35 years). A majority (85%) of them were well-educated. Nearly half (48%) died in their 3rd or higher pregnancy. Sixty percent died in an advanced stage of the pregnancy. More than two thirds (67%) died after delivery. Eighty eight (78%) died in a hospital. In 96% of the cases, a post-mortem was conducted to determine the cause and to be

Cause of Death - 2015

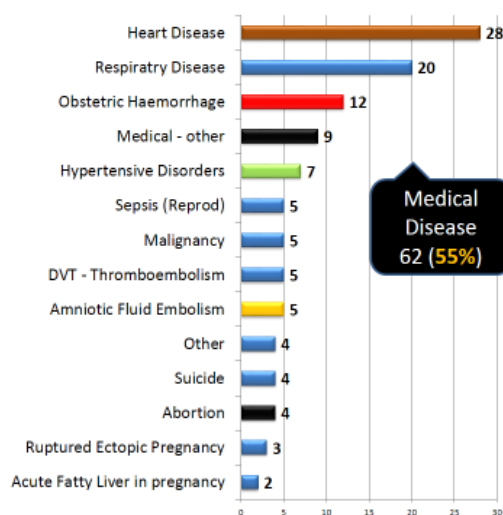


Figure - 2

knowledgeable on other features and circumstances of the death.

Unmet need of family planning was identified in 26 cases (23%). Delays were identified in 78 (69%) cases. A proportion of 54% did not seek medical care in time. Five women had reaching difficulties. In 34 cases, optimal care was not received from the health sector. Many (n=67, 59%) were identified as *preventable* deaths.

Response

Learning lessons from the deaths, several outcomes were translated in to action. Knowledge transfer workshops on heart disease in pregnancy for obstetricians, cardiologists and anaesthesiologists, preventive activities on H1N1 influenza in pregnancy, lobbying for H1N1 vaccine for pregnant mothers, addressing delay 1, reorganization of 24/7 blood transfusion facilities, rectification of human resource deficiencies, rapid communication system among field and hospital care givers, introduction of a RED book to make visible "bad" cases at field level and strengthening multidisciplinary care for critically-ill pregnant mothers were key activities.

Partners

The College of Obstetricians and Gynaecologists joined hand in hand in reviewing maternal deaths throughout the country. Colleges of Anesthesiologists and Intensivists of Sri Lanka, Forensic Pathologists of Sri Lanka and Community Physicians of Sri Lanka also collaborated in the activity. The Maternal & Child Morbidity Surveillance Unit of Family Health Bureau played the lead role.



