



Third Delay in Essential Obstetric & Newborn Care: Fateful to life

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ABSTRACT

The high maternal & neonatal mortality, reveal the truth hidden behind the statistics in India. It is an ironic that in a society where Mother is equated to goddesses, but very little attention is paid to ensure their health in the process of becoming mothers. There is many more scientific evidence shows that the Third delay in essential obstetric and newborn care causes Maternal & Neonatal Mortality. There is a paradigm shift of delays toward the third delay rather than first & second delay, which might be related to inadequate reproductive health services, equipment, supplies, and skilled healthcare workers. There is the strong need for an understanding of the third delay & intervention to reduce maternal and neonatal mortality and improve the quality of care. The country does not lack good policies but is warranted if fewer women are to suffer the fate of the wife of the 'Shah Jahan' of India, the Empress 'Mumtaz' (Maternal Death).

Keywords- MMR, NMR, Third Delay, Essential Obstetric Newborn Care.

INTRODUCTION

The death story of the young woman in from Mumbai slum^[1], reveal the faces hidden behind the statistics, and the problem of the high maternal mortality rate in India. It is an ironic that in a society where Mother is equated to goddesses, but very little attention is paid to ensure their health in the process of becoming mothers. There is enough scientific evidence to suggest that Maternal & Neonatal Mortality Rate (MMR & NMR) can be brought down significantly by higher literacy, awareness, and access to better primary health care services.^[2]

Every five minutes, at least one Indian woman dies during Pregnancy and childbirth. According to WHO, of the 529,000 maternal deaths occurring every year, 136,000 or 25.7 % take place in India. The latest estimated MMR in India from 2011-13, show an average of 167 deaths/100,000 live births.^[3] Countries have now united behind a new target to reduce maternal mortality even further, Sustainable Development Goal (SDG) - 3 target is by 2030, reduce the MMR to less than 70 per 100 000 live births and end preventable deaths of newborns with aiming to reduce NMR to at least as low as 12 per 1000 live births. Also substantially increase health

financing and the recruitment, development, training and retention of the health workforce.^[4]

The third delay, although under-researched, is likely to be a source of considerable inequity in access to emergency obstetric care in developing countries. The most commonly cited barriers were inadequate training/skills mix (86%); drug procurement/logistics problems (65%); staff shortages (60%); lack of equipment (51%) and low staff motivation (44%). This highlights the health facilities were still chronically under-resourced.^[5]

MATERNAL & NEONATAL MORTALITY

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

The mortality rate is calculated by taking all the deaths that occurred during a particular time period and dividing that number by the total size of the population during the same time frame. The resulting decimal is then multiplied by 1,000 or 100,000 to give a whole number.

The global maternal mortality ratio has fallen from 385 maternal deaths per 100,000 live births in 1990 to 216 deaths per 100,000 live births in 2015. In many countries, maternal deaths have fallen as women have gained access to family planning and Skilled Birth attendance with backup emergency obstetric care.^[6]

Maternal mortality is unacceptably high. About 830 women die from pregnancy or childbirth-related complications around the world every day. It was estimated that in 2015, roughly 303 000 women died during and following pregnancy and childbirth, and most could have been prevented.^[7]

Maternal deaths, were reported to be 191 during the years 2000 to 2005 giving maternal mortality rate of 32 per 10,000 births. Except for 51 deaths all were attributed to hemorrhage and pregnancy-induced hypertension in apex hospitals of western Maharashtra. In a review of data over last four

decades, MMR has declined from 210 (1967) to 37 (2005). It has remained steady at 32 to 40 per 10000 births thereafter. Much needs to be done for maternal health care in rural areas.^[8]

Maternal mortality rates of 258.14 to 683.9 per 100,000 live births were observed over the 7 years. Of the women who died 92.3% were from rural areas. 70.8 percent were unbooked for delivery. 78.5 percent were in 21-30 year age group. Most maternal deaths are preventable with adequate health care and transport facilities.^[9]

The total number of deliveries has been steadily rising from 1,685 in 2001 to 3,957 in 2009. The MMR doubled from 1,500/100,000 live births in 2001 to 3,000/100,000 live births in 2006, and then declined to 2,464/ 100,000 live births in 2009. Despite Government efforts, MMR in India is unacceptably high.^[10]

Strengthening of maternal health care services is very important to ensure safe motherhood. WHO Report 2005 suggests that poor maternal conditions account for the fourth leading cause of death for women worldwide, after HIV/AIDS, malaria, and tuberculosis.^[11]

Neonatal mortality is a newborn death occurring within 28 days postpartum. Neonatal death is often attributed to inadequate access to basic medical care, during pregnancy and after delivery. This accounts for 40–60% of infant mortality in developing countries.

It was estimated that approximately 2.7 million newborn babies died in 2015, and an additional 2.6 million are stillborn. It is particularly important that all births are attended by skilled health professionals, as timely management and treatment can make the difference between life and death for both the mother and the baby.^[12]

India has the highest number of neonatal deaths (within the first 28 days 10 of birth) in the world. About one million neonatal deaths occur here annually. Data shows that 21 percent of the 26,000 children of less than five dying every day in the world are Indians.

CAUSES

Factors that increase maternal death can be direct or indirect. Generally, there is a distinction between a direct maternal death that is the result of a complication of the pregnancy, delivery, or management of the two, and an indirect maternal death. Fatalities during but unrelated to a pregnancy are termed accidental, incidental, or non-obstetrical maternal deaths.^[13]

Over the study period, there were 52413 deliveries, giving a MMR of 518.48 per 1,00,000 live births. The leading direct cause (81.64%) was Eclampsia (43.75%), while indirect (18.35%) leading cause was heart disease (6.64%). Most of the women (60.92%) died within 12 hours of admission suggesting majority patients reach the tertiary care hospital quite late. The age group of below 25 years (67.17%), primigravida (63.28%) and unbooked cases (89.84%) were mainly affected.^[14]

The risk of maternal mortality is highest for adolescent girls under 15 years old and complications in pregnancy and childbirth is a leading cause of death among adolescent girls in developing countries.^[15]

A three-year retrospective observational study by FOGSI members shows a wide variation of MMR in the five zones (West—342; South—229; East—709; North East—709 and North—814). Leading causes of maternal deaths also varied among the zones [hemorrhage in West (31 %), South (26 %), and North East (21.5 %); hypertension in East (34 %) and North (22 %)]. And as a whole, the leading causes of deaths were determined as hypertension (29.4 %), hemorrhage (21.56 %), sepsis (15.05 %), and medical disorders (12 %).^[16]

The study over a period of 4 years reviewed the MMR ranged between 926 and 377/100,000 births. The causes of deaths were sepsis 23.84%, eclampsia /pregnancy-induced hypertension 17.69%, hemorrhage 13.84%, hepatitis 13.84%, anemia 13.07%, respiratory infections 8.46%, other indirect obstetrical causes 6.15%, and unrelated causes 4.61%. Maximum deaths (71.53%) occurred in women between 21 and 30 years of age while multigravida had MMR of 51.53%. Mortality was

highest in postnatal mothers 63.06%. Unbooked cases constituted 92.31% of MDs and included 25% referred cases. Overall maternal mortality was 690/100,000. MDs due to direct obstetric causes were 55.38%, indirect obstetric deaths 40%, and unrelated deaths 4.61%. The causes of potentially preventable deaths.^[17]

A five years retrospective study shows the MMR has decreased at Eden (6.09 to 2.81/1000 live births) and risen at Bankura (2.68 to 4.18/1000 live births) over the last five years. The majority of the deaths are preventable by the proper Obstetric care and EmOC.^[18]

One hundred near-misses and 16 maternal deaths were identified. The commonest reasons for near-miss were: severe hypotension (42%), pulmonary edema (23%) and emergency hysterectomy (10%). The most common initiating obstetric conditions were hemorrhage (60%), acute severe hypertension (34%) and sepsis (4%). The primary obstetric factors amongst the maternal death were: hemorrhage (43.75%), maternal disease (25.09%) and hypertension (18.79%).^[19]

Globally in 2015, births in the richest 20 percent of households were more than twice as likely to be attended by skilled health personnel as those in the poorest 20 per cent of households (89 per cent versus 43 per cent). It means millions of births are not assisted by trained midwife, doctor or nurse.^[20]

152 mothers who died over a period of eight years, shows the frequency of maternal mortality was 1.3 per 100 deliveries. The main causes of death were hypertensive disorders in 52/152 (34.21%), hemorrhage in 40/152 (26.31%), unsafe abortion in 16/152 (10.52%), puerperal sepsis in 14/152 (9.21%) and obstructed labor in 11/152 (7.2%) cases. Substandard care factors were present in the majority (76.7%) of cases of maternal deaths.^[21]

Gold standard for gestational assessment was early obstetric ultrasound, comparison shows more at risk for need of resuscitation (p=0.013), nutritional and supportive care (p=0.000), respiratory distress (p=0.000), birth asphyxia (p=0.032), early onset sepsis (p=0.001), neonatal jaundice (p=0.001), hypothermia (p=0.000) and prolonged stay in

hospital (p=0.000). The mortality was seen more in preterm as compared to term neonates (p=0.002).^[22]

THIRD DELAY

In 1994, Sreen Thaddeus of the United States Agency for International Development (USAID) and Deborah Maine, Professor Emerita at the Columbia University Mailman School of Public Health, linked causes of maternal mortality to “three delays:” delay in seeking care, delay in arrival at a health facility, and delay in the provision of adequate care. Today, these three delays still make up a framework that helps in understanding what causes maternal deaths. (Fig.-1)

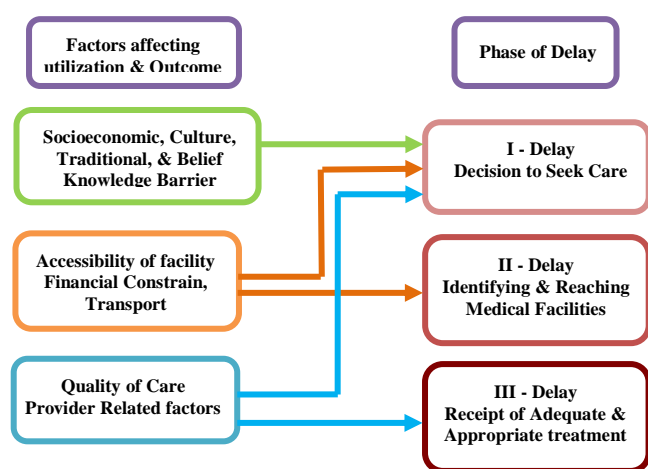


Fig. 1: Three Delay Model in Maternal Mortality

Retrospective, observational study where 8915 of deliveries during the study period were reviewed and all causes of maternal deaths were analysed. The projected maternal mortality ratio was 89.7/100,000 live births. The third delay was found to be the most frequent (79%) followed by the first delay (71%) while the least one was the second delay (40%). There is a paradigm shift of delays toward the third delay rather than the first or second delays. A better understanding of the third delay co-factors could lead to significant improvement in the quality of care.^[23]

Study evidence the third delay, where people often consider the quality of care more important than cost. The three factors distance, cost, and quality alone do not give a full understanding of decision-

making process. But also shortages of qualified staff, essential drugs and supplies, coupled with administrative delays and clinical mismanagement contributors to maternal deaths.^[24]

The newborn babies, 33% died in a hospital/health centre, 13% in a private clinic and 54% died away from a health facility. 47% of the deaths occurred on the day of birth and 78% in the first week. Major contributing delays to newborn death were a caretaker delay in problem recognition or in deciding to seek care (50%, 32 / 64); delay to receive quality care at a health facility (30%; 19 / 64); and transport delay (20%; 13 / 64). Understanding why newborn babies die can be improved by using the three delays model, originally developed for understanding maternal death.^[25]

A confidential enquiry of maternal death are inadequate facilities and equipment in neonatal units and nurseries of deaths (4.9%), Non-existent or poor antenatal care (3.5%), Poor intrapartum fetal monitoring (3.2%), Patient delay in seeking medical attention during labour (2.4%), Prolonged second stage of labour with no intervention (1.4%), Inappropriate response to rupture of membranes (1.2%), Lack of transport from home to the health facility (1.2%), Poor progress in labour and incorrect use of partograph (0.9%), Delay in medical personnel calling for expert assistance (0.8%), Inadequate neonatal management plan (0.8%). It means out of 1.16 million newborn deaths, between 220,000 and 395,000 newborn lives could be saved if over 90 percent of women and babies received skilled childbirth care.^[26]

The prevalence of the three different types of delays was estimated according to the level of care and outcome of the complication. Overall, any type of delay was observed in 53.8% of cases; delay related to user factors was observed in 10.2%, 34.6% of delays were related to health service accessibility and 25.7% were related to the quality of medical care. The occurrence of any delay was associated with increasing severity of maternal outcome: 52% in PLTC, 68.4% in MNM and 84.1% in MD.^[27]

Most women died within 24 hours of admission, between the age group of 20 to 30 years, Most deaths unregistered cases transferred from outside was crucial. The maternal mortality rate is much lower than the national MMR of 407 yet most deaths could have been avoided with the help of quick, efficient and well-equipped transport facilities and by promoting overall safe motherhood. The study observes that it is necessary the basic obstetric care for all, and early detection of complications and management of emergency obstetric care services need to be seriously looked into in the urban areas as well.^[28]

INTERVENTION

Needs assessments are critical to the development of practical implementation strategies that are based on evidence, adapted to the local context, and address supply, demand and equity issues. A number of tools and approaches exist to conduct needs assessments and identify priorities. The Averting Maternal Death and Disability (AMDD) Building Blocks Framework for EmONC helps providers, managers, and policymakers unpack larger systems issues into smaller, actionable areas (Fig. 2)^[29]. Hundreds of facilities have used this approach to double the met need for EmONC and halve case fatality rates (Freedman et al. 2007).

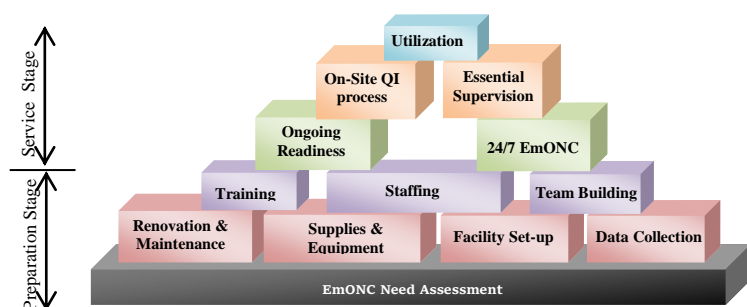


Fig. 2: AMDD Building Blocks Framework for EmONC

The third delay refers to delays in receiving appropriate care at a health facility. However, the lack of available medicine often detracted from the quality of care received. Approximately 33% of men and 65% of women cited a lack of supplies at health facilities as a concern. Attitudes have an important role in client use of services. Despite the

generally positive perception of facility staff treatment of women, a notable proportion of men and women thought women were not treated respectfully by facility staff. It is recommended that at the national level, facilitate intra-agency coordination to ensure that the six key building blocks within the health sector are realized.^[30]

Clean delivery practice is a key intervention for reducing infection-related maternal and neonatal mortality. The study revealed the traditional and unhygienic practices at home delivery are common in rural areas having a deleterious effect on maternal and neonatal health. Therefore, domiciliary midwifery services have to be carried out by trained and skilled birth attendants.^[31]

Once thought to be a radical, stop-gap measure, task-shifting for emergency obstetric care is now seen globally as a primary strategy for expanding access to emergency services. The World Health Organization's 2012 guidelines on task-shifting for maternal and newborn health ultimately, task-shifting is helping to ensure such programs are carefully implemented and based on evidence. The reality remains that human resource shortages will continue to challenge access to quality maternal care in many countries. However, with adequate attention to lessons learned as well as the specific health system context, task-shifting programs can effectively expand the roles of midlevel providers.^[32]

CONCLUSION

A review concludes that there is adequate evidence shows paradigm shift towards the third delay in Essential Obstetric & Newborn Care, which is fateful to life, and are preventable when there is access to adequate reproductive health services, equipment, supplies, and skilled healthcare workers. There is a strong need for an understanding of the third delay & intervention to reduce maternal and neonatal mortality and improve the quality of care. However, Sustainable Development Goal-3 target to reduce MMR to less than 70 per 100 000 live births, and NMR to low as 12 per 1000 live births by 2030. Therefore burden is more, so let's save the lives.

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