
EDITORIAL**Towards Reducing Maternal Mortality in India***Aparna Shrotri**Ex-Professor of Ob & Gyn, B J Medical College, Pune-411001 (Maharashtra) India*

The death of a woman during pregnancy or child-birth is not only a health issue but also a matter of social injustice, as it violates the basic human right, the 'Right to Live' for the deceased woman.

Maternal Death (MD) is a death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of the duration and site of pregnancy from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes [1]. Maternal Mortality Ratio (MMR) is the measure of maternal mortality and is defined as the number of MDs during a given time period per 100000 live births (LBs) during the same time period usually over period of one year.

Causes of maternal deaths are the same all over the world. 80% of MDs are due to direct obstetric causes that include severe hemorrhage, infection, eclampsia, obstructed labor, unsafe abortions and 20% are due to indirect medical causes [2] that are aggravated by pregnancy such as anaemia, cardiac disease, etc.

Women need skilled care during pregnancy, delivery and postpartum period which is often impeded by three delays [3]; delay in deciding to seek care, delay in reaching the health care centre, and delay in receiving the appropriate care. Failure to realize the signs of complications, perceiving the seriousness of the condition, cost considerations, family problems account for the delay in deciding to seek the care. Distance from home to the facility, condition of roads, lack of emergency transportation are responsible for delay in reaching the health care centre. Shortages of supplies, the lack of basic equipments, vacancies and poor skills of the health care providers (HCPs) account for the delay in receiving the appropriate timely care.

Determinants of safe motherhood are sociocultural, reproductive and health service related. Sociocultural factors for maternal mortality include low social and economic status of women, lack of education, poor nutrition etc. Elimination of poverty, improving women's education and nutrition are long term measures. Reproductive factors contributing to maternal deaths are pregnancy in extremes of reproductive life span, early marriages resulting in adolescent pregnancies, high parity, pregnancies in rapid succession, unsafe abortion which need to be addressed through provision of quality family planning and safe abortion services. Health services related factors include deficient treatment of complications on account of lack of essential supplies of drugs and materials, inadequate facilities including equipments, lack of emergency obstetrical, safe abortion and blood transfusion services and lack of adequate number of trained health care personnel.

By 2015 all United Nations member states are committed to help achieve the Millennium Development Goals (MDGs) established following the Millennium Summit of the United Nations in 2000 [4]. The goal 5 expects to improve the maternal health by reducing maternal mortality ratio (MMR) by 75% between 1990 and 2015 and by ensuring that every birth is attended by skilled health personnel. In addition, universal access to reproductive health needs to be ensured by addressing the issues related to contraceptive prevalence rate, unmet need for family planning, adolescent pregnancy and antenatal care (ANC) coverage. The indicators for measuring progress towards achieving the goals are MMR and the proportion of births attended by skilled health personnel. For achieving the MDG 5, the annual expected decline in MMR

is 5.5%. Countries showing annual decline of 5.5% are considered to be progressing 'on track'. Those failing to achieve this decline are categorized as 'making progress', 'insufficient progresses' or 'no progress' depending on the annual percentage decline in MMR.

Progress made so far: The estimated number of MDs in the world for the year 2000 were 5, 29,000 with a MMR of 400/100 000 LBs. The MMR for developing regions was 440 (Contributing to 99.5% of MDs in the world) as against 20 for developed regions. Sub Saharan Africa had the highest MMR of 920 and South Eastern Asia had MMR of 210 [5]. Globally the MMR has declined from 400 to 210 from 1990 to 2010 with overall decline of 47% and an average annual decline of 3.1%. The number of MDs has declined from 5,43000 to 2,87000. India is amongst group B countries lacking in good complete civil registration data but having other sources of national data. The modelled country estimates for year 2010 using the available data have shown the MMR of India of 200/100000 LBs, (Upper & lower estimates ranging between 140 to 310). The average annual decline is 5.2% and is considered to be "making progress" towards improving maternal health. The estimated annual number of MDs is 56000 and life time risk of MD of 1 in 170 [6].

Sample Registration System (SRS), Government of India has reported an estimated MMR level of 437 per 100,000 live births in 1990 and 212 for the period from 2007-2009 with an overall decline of 51%. The target MMR for year 2015 is 109 per 100,000 live births and the progress toward reaching the estimated goal appears to be slow. At the historical pace of decrease, India is likely to reach MMR of 139 per 100,000 live births by 2015, falling short by 30 points [7]. About two-thirds of the maternal deaths occur in the Empowered Action Group (EAG) states. From their 2007-09 levels, the States of Assam (390), Haryana (153) and Orissa (258), are likely to fall short of their state level targets by huge margins. Kerala

(81), Tamilnadu (97) and Maharashtra (104) are the only three states that have reached the national goal by 2007-2009.

The proportion of safe deliveries conducted by skilled birth attendants is an important determinant of maternal health. Results of surveys conducted nationwide periodically from 1992-1993 to 2007-2008 [National Family Health Survey (NFHS) I, II, III and District Level Household Survey (DLHS) III] show the progress made in some of the maternal health indicators over the years [8]. The coverage of institutional deliveries in India has increased from 26% in 1992-1993 to 47% in 2007-2008. Deliveries by skilled personnel has increased from 33% to 53% during the same period. With the existing rate of increase in deliveries by skilled personnel, the likely achievement by 2015 is only up to 62%, which is far short of the targeted universal coverage. Although the rural coverage is increasing the urban rural gap in coverage of safe deliveries is still wide which was of the order of 32 percentage points during 2007-08 (urban coverage 75.8%, rural 43.4%). The proportion of safe deliveries in rural areas is currently increasing rapidly with the schemes under National Rural Health Mission (NRHM).

Pregnant women having three ANC visits has shown an increase from 44% in 1992- 93 to 52% in 2007-2008. NFHS III data has revealed that 23.6% pregnant women did not receive any ANC and only 23% received IFA tablets for 3 months. DLHS III carried out during 2007-2008 has shown that 25% of pregnant women had not received any ANC check up and only 19% had received full antenatal care. Only 47% pregnant women had received 100 tablets of iron folic acid tablets for prophylaxis for anaemia. During 2007-2008, 54% couples have used some method of contraception, 34% had accepted undergone female sterilization and only 1% had male sterilization. Unmet need for family planning has been 14.4%. The programme is still female sterilization centered and the use of spacing methods of contra-

ception is very low.

Emergency obstetric care: Antenatal risk screening alone cannot predict most MDs. [9]. Many women who die do not exhibit any prenatal risk factor hence care to at risk group alone cannot reduce the maternal mortality significantly. Most obstetric complications like preeclampsia, antepartum haemorrhage (APH), postpartum haemorrhage (PPH) cannot be predicted or always prevented, but they can be treated by timely instituted proven clinical interventions. Emergency Obstetric Care (EmOC) can save lives. Basic emergency obstetric services at primary health care level and comprehensive emergency obstetric care at referral centres that are accessible and functional round the clock can prevent maternal deaths.

Every delivery should be conducted by a skilled birth attendant (SBA) who can detect complications early, is capable of administering the initial life saving care and execute timely referrals to higher centres. This requires addressing the shortages in the skilled work force of doctors and nurses in rural areas. The nurses trained in skilled attendance at birth (SAB) are now authorized to practice clinical interventions such as administration of parenteral MgSO₄ for prevention and control of fits in severe preeclampsia/eclampsia, prophylactic oxytocics for active management of third stage of labour, and administration of first dose of antibiotics for suspected sepsis in mothers and neonates. In some states the medical practitioners from AYUSH stream (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy) are being deployed for providing maternal health care after suitable training and authorization for implementing the maternal health interventions from modern medicine. Instituting the interventions at the hands of paramedics and practitioners from Indian system of medicine through task shifting strategy is likely to bridge the urban rural gap in maternal health care. Although the childbirth is a natural physiological process, it can get complicated in about 15% cases. The complications such as APH,

PPH at times are unpredictable and cannot always be prevented. Birth planning and complication readiness (BP/CR) [10] is a process of planning for normal birth and anticipating the actions needed in case of an emergency. All safe motherhood stake holders including policy makers, facility managers, health care providers, communities, families and women themselves need to share the responsibility of BP/CR. A coordinated and concerted effort by all concerned is needed to reduce the delays contributing to the maternal deaths.

Strategies for safe motherhood: A package of essential obstetric care to all pregnant women during pregnancy, ensuring delivery by a skilled birth attendant, postnatal care to mothers and their babies, provision of emergency obstetric and newborn care along with provision of contraceptive and safe abortion services has been proposed to reduce the maternal and neonatal deaths.

Governmental programmes: For accelerating the progress towards achieving the MDG 5, the government has instituted several special initiatives under phase II of Reproductive and Child Health (RCH) programme under NRHM.

Provision of Essential Obstetric Care to all Pregnant Women: Early registration in first trimester and minimum four appropriately spaced antenatal checkups (First at registration, second at 14-26 weeks, third at 28-32 weeks and fourth at 36-40 weeks); prophylaxis and therapy for nutritional deficiency anaemia, immunization against tetanus; tracking of severely anaemic women for special care, detection and treatment of hypertension and preeclampsia are being provided. All the community health centres (CHCs) and the primary health centres (PHCs) are being equipped to provide round-the-clock delivery services with a commitment to provide skilled attendance at every birth at both the institutional and community level. All the first referral units (FRUs) are being equipped to provide emergency obstetric and neonatal care.

Capacity building initiatives for safe motherhood include a competency based training programme in skilled attendance at birth for midwives and training in basic emergency obstetric care (BEmOC) for the doctors in public health service. Provision of quality manual vacuum aspiration abortion facilities at PHCs are being arranged through training of eligible doctors in comprehensive abortion care. To meet the shortage of obstetricians and anaesthetists at the first referral units, selected M.B.B.S. doctors are being trained in comprehensive EmOC that includes skills to perform caesarean section and in anaesthesia skills for emergency obstetric care. Proven life saving clinical interventions is thus being implemented through trained health care providers. Janani Suraksha Yojana, (JSY); a centrally sponsored safe motherhood scheme under NRHM provides monetary incentive to both the mother and the Accredited Social Health Activist (ASHA) in order to encourage institutional deliveries. This has resulted in significant increase in the proportion of institutional deliveries. Under Janani Shishu Suraksha Karyakram (JSSK) for women delivering at public health institutes, all the services are provided free of charge including delivery/caesarean section, drugs, diagnostics, blood and free diet during hospital stay. Free hospital care is provided up to 6 weeks post delivery. Free transport is offered to women for reaching health institutions, for referrals between health institutions and for dropping back home. To improve the notification of MDs and to identify the gaps in the existing health care delivery, a process of maternal death review has been set up at community level as well as at the facility level [11] which will help in planning the interven-

tion strategy.

In spite of these efforts the estimated MMR of India is still unacceptably high. For achieving the maternal health goals the inadequacies in the maternal health care need to be addressed urgently. The coverage and quality of care need to improve substantially. At country level there is a need to establish a system for registration of births, deaths and causes of death and a well functioning health information system. For every MD, many more women with complications will survive but often suffer from lifelong disabilities. WHO has suggested maternal 'Near miss' approach wherein the cases developing life threatening obstetric morbidity are investigated and reviewed. Such review is likely to yield useful information that provides opportunities to improve the quality of service [12].

Public Private Partnership and Community Participation are important strategies. A large section of population is availing health care through private sector and remains away from the facilities at the public health institutes. Proven medical interventions need to be implemented universally. The private medical practitioners need to be sensitized to practice standard protocols for clinical care of obstetric emergencies. There is a need for involvement of professional organizations of medical practitioners and obstetricians for this purpose. The communities, families and women themselves need to be aware of the need and availability of care. Communities should voluntarily consider themselves accountable for maternal health issues and should come forward for reaching the goals in their area. On accepting the onus of the programme by all stake holders, reaching the safe motherhood goals by 2015 could become a reality.

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