



## ANALYSIS OF MATERNAL MORTALITY AT A TERTIARY CARE CENTRE

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**ABSTRACT**

Maternal mortality has been identified as a health priority and maternal health indicators are also included in SDG ( Sustainable development goals).Epidemiological data ,decentralized studies are essential for designing interventional programmes to reduce the ratio favourably.A retrospective analysis of maternal deaths in our tertiary care centre from July 2019 to Dec 2019 (6 months ) was carried out.The maternal mortality ratio was found to be 475 per 1,00,000 live births .15 patients ( 58% )were referred from government hospitals and 11 patients (42% ) were referred from private hospitals .Out of all the patients referred from government hospitals 66.6 % were referred from primary health centre . The most common direct cause of maternal death was Haemorrhage (21%) followed by other causes ( 21%),Eclampsia (17%), Sepsis (10%),AFLP(10%),infective hepatitis (7 %).

**KEYWORDS :** Maternal health ,Mortality,Haemorrhage

**INTRODUCTION**

Though child birth gives joy to mother and family, yet this joy may transform to tragedy in the event of maternal death. Maternal mortality has been identified as a priority on health policy and research agendas for developing countries. Recently developed indicators for SDG(Sustainable Development Goals ) targets 3.1 and 3.2 include the MDG indicators of maternal and under-five mortality 2. In order to achieve the SDG target of 70 per 100 000 live births by 2030, the global annual rate of reduction will need to be at least 7.3% 2 .

Maternal mortality refers to the "Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the site and duration of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not by accidental or incidental cause".<sup>1</sup> It is used as a proxy indicator to assess the country's maternal and reproductive health status. Despite of witnessing an excellent economic growth and a boom in the health sector, India couldn't percolate down this progress to the reproductive health indicators. Post-partum haemorrhage, hypertensive disorders and sepsis are the most common causes of maternal deaths in India followed by complications of delivery and obstructed labour<sup>3,4</sup>and it is being emphasised that 80 % of these deaths can be prevented or avoided through institutional deliveries or by providing quality health care to the women.<sup>6,7,8</sup> With the advancement of medical science the average lifespan of people has increased greatly in recent years; but the rate of decrease of MMR is often not up to the mark. When a large proportion of people are living up to a very old age, in that scenario the death of a person at early age due to the consequence of a physiological process cannot be accepted.Hence ,decentralised studies should be performed for formulating strategy .Epidemiological data pertaining to maternal mortality is valuable in each set-up to design interventional programs to reduce the ratio favourably. Hence the present study was done at our tertiary care centre to evaluate the mortality ratio in our hospital, to assess the epidemiological aspects and causes of maternal mortality, and to suggest recommendations for improvement to reduce maternal Mortality.

**AIMS AND OBJECTIVES**

To calculate maternal mortality ratio in our institute  
To analyse the causes of maternal deaths in our hospital.  
To suggest ways to reduce maternal mortality .

**MATERIALS AND METHODS**

A retrospective analysis of maternal deaths in a tertiary care centre B.J.G.M.College& Sassoon hospital ,Pune from July 2019 to Dec 2019 (6 months ) was carried out. All maternal mortality of antenatal ,puerperal period , during labour and all deaths within 42 days of termination of pregnancy irrespective of site and duration of pregnancy in a tertiary care centre were included except deaths due to homicide ,suicide,accidental causes. .All the collected data tabulated and analysed.

**RESULTS**

Total 26 maternal deaths were recorded during study period .Maternal mortality ratio was 475/1,00,000 live births . The most common cause of maternal death was Haemorrhage 6 (21%) followed by other causes ( 21%),preeclampsia –eclampsia and associated complications 5 (17%), Sepsis 3(10%),AFLP 3 (10%),infective hepatitis 2 (7 %),anaemia 2 ( 7 % ) .Other causes includes 1 maternal death due to sickle cell crisis ,1 due to ARDS, two cases due to valvular heart disease,one due to bowel obstruction and one due to blood transfusion reaction.In our study all the cases were referred cases.(42% )11 patients were referred from private hospital and (58 % ) 15 patients were referred from government hospitals nearby.(66.6%) 10 patients of all the referrals from government hospital were referred from PHC due to ill-equipped to manage obstetric emergencies ,nonavailability of blood and blood products, nonavailability of ventilator support ,nonavailability of neonatal intensive care unit .(77%)20 patients were ANC (Antenatal ) and (23 %)6 were PNC(Postnatal) cases out of then 2 were home deliveries.After corresponding surgical ,medical obstetric interventions 13 patients delivered vaginally out of which one required surgical exploration .5 patients delivered by caesarian section and remaining 2 patients were undelivered .Out of 26 cases 4 patients underwent obstetric hysterectomy .Out of 18 confinements 8 delivered live babies ,9 were stillbirths and remaining one was abortion . 41% of referrals were in labour

,59% of patients were not in labour . According to WHO patient is called ANC booked under medical facility with minimum three antenatal visits .Majority of patients ( 85 % ) were unbooked, remaining (15%) patients were booked. Majority of patients were multipara (53%) while Primigravida patients constituted (47%) of the study group. All the patients received ICU care at the earliest when needed. Out of all ICU admitted patients (50%) were admitted In Intensive Care Unit within 24 hours of admission to the hospital, 50 %patients were admitted 24 hours after admission to the hospital .

Majority of the patients (48 %) were in the age group of 21-25 years followed by (32 %) in the age group of >25 years and (20 %) in the age group of 18-20 years. (50 %)13 maternal deaths occurred within 48 hours of hospital admission while (38 %)10 and (12%) 3 maternal deaths occurred within 3-7 days and >7 days of hospital admission respectively .

Majority of admissions were in third trimester 20(77%) f /b second trimester 5(19 %) f/b first trimester inl ( 4% ) .

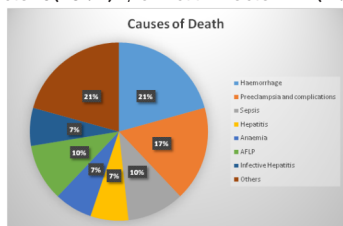


Figure 1-Causes of death

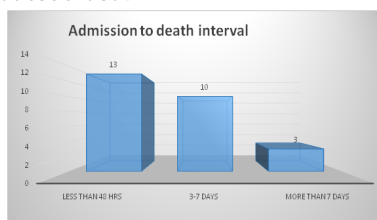


Figure 2-Admission to death interval

Place of Referral	Number of patients
Private hospitals	11
Government hospitals	15
PHC	11
Total	26

Figure 3- Referral status

**DISCUSSION**

Maternal mortality is an index of reproductive health of the society. High incidence of maternal deaths reflects poor quality of maternal services, late referral and low socioeconomic status of the community. The current maternal mortality ratio (MMR) in India is 130/100,000 live births 5. Various studies done in India in the last 15 years have shown wide variation in MMR ranging from 47/100000 to 625/100000 births6-11 .

50% maternal deaths occurred within 24 h of admission in hospital and 38 % maternal deaths occurred within 3-7 days of admission in hospital. Only 12 % deaths happened beyond 7 days of hospital admission.

It becomes apparent that many of the deaths that occurred could have been avoided if they were transferred earlier further highlighting the need for adequate and quick transport facilities.Early detection of high risk pregnancies and referring them to a tertiary center at the earliest can reduce the complications of high risk pregnancies.Most of the maternal deaths are preventable by optimum utilization of existing MCH facilities, identifying loopholes in health

delivery system, early identification of high risk pregnancies and their timely referral to higher center with proper transport system.There is marked difference in the maternal mortality rates at the state levels, with some states heading towards achieving the set targets while some are still struggling at the initial stage. It is therefore the time to look at the maternal and reproductive health not just as a medical event but rather a social phenomenon, where contextual factors play an equally important role. There is a need to adapt the strategies and policies for maternal mortality reduction specific to the state,districtsubdistrict level while simultaneously taking lessons from the well performing states.Continued medical training is required for medical officers who are working at PHC and sub district hospital for early recognition of high risk women and their referral in time to higher centers to avoid maternal death. Referral system should be developed .

**CONCLUSION**

With new Sustainable Development Goal (SDG) to reduce maternal mortality ratio to 70 per 100,000 live births by the year 2030, India needs to move beyond the hospital-based approach in addressing the reproductive health issues. Continued medical training is required for medical officers who are working at PHC and sub district hospital for early recognition of high risk women and their referral in time to higher centers to avoid maternal death.Because when the patients are referred they already have significant irreversible damage . Referral system should be developed . Importance of regular and frequent ANC checkup for healthy baby and healthy mother should be incorporated in the society targeting the below poverty line people with the help of street play ,posters and slogans .

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