



Research Article

# Causes of Maternal Mortality Rate: Postpartum Haemorrhage - A Major Cause in Madhya Pradesh

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## I N F O

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## A B S T R A C T

Maternal mortality is an indicator of the state of maternal health services, status of women, women's health, and above all development of the nation. 15% of global maternal deaths can be attributed to India alone. The lifetime risk of maternal death in India is 1 in 220 as compared to 1 in 5800 in the UK. The major burden of maternal mortality is in the Empowered Action Group (EAG) states. As per recent SRS data, 2014–2016, the Maternal mortality rate (MMR) observed in Madhya Pradesh (MP) was 173. Postpartum haemorrhage (PPH) is the leading cause of maternal mortality worldwide with a prevalence rate of approximately 6%; 50% of these are due to atonic PPH. According to WHO 2014- in India

**Keywords:** PPH (Postpartum haemorrhage), SDG (Sustainable development goal), EAG (Empowered Action Group), IMR (Infant Mortality Rate), MMR (Maternal Mortality Rate), WHO (Maternal Mortality Rate).

## Introduction

India is among those countries which have a very high infant and maternal mortality rate. In Madhya Pradesh, IMR and MMR are much higher. About 303,000 women die each year due to pregnancy-related causes.<sup>2</sup> WHO reports that obstetric haemorrhage causes 127,000 deaths annually worldwide and is the leading cause of maternal mortality. PPH is a frequent complication of delivery and its incidence is commonly reported as 2-4% after vaginal delivery and 6% after caesarean section with uterine atony being the cause in about 50% of the cases.<sup>3</sup>

### Incidence of Maternal Mortality in Madhya Pradesh

WHO estimates that of the 5,29,000 global maternal deaths occurring every year, 1,36,000 or 25.7% take place in India and two-thirds of these maternal deaths occur after delivery; PPH being the most commonly reported

complication. The unacceptably high maternal death of 540 per 100,000 live births in India in the last few decades remains a major challenge.<sup>4</sup>

According to The Times 2019, the latest maternal mortality data for 2015-17 showed that Madhya Pradesh has MMR of 188 per lakh live births - the third highest in the country. In 2014-16, the MMR for Madhya Pradesh, combined with Chhattisgarh, was 173.<sup>5</sup>

The Times of India 2019 reported that Madhya Pradesh has MMR of 188 per lakh live births, which is the third highest in the country. In 2014-16, the MMR for Madhya Pradesh, combined with Chhattisgarh was 173.<sup>6</sup>

### What is PPH (Postpartum Haemorrhage)?

PPH is commonly defined as blood loss of 500 ml or more within 24 hours of delivery. It affects about 5% of all women giving birth around the world.



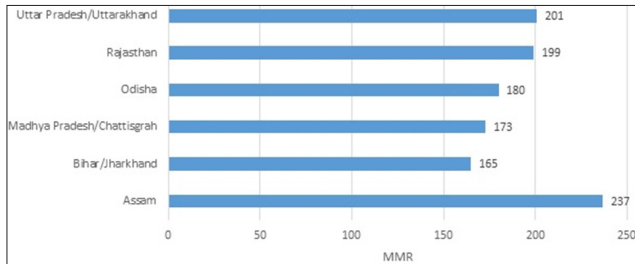


Figure 1. MMR in EAG States

Source: SRS 2014-16 estimates

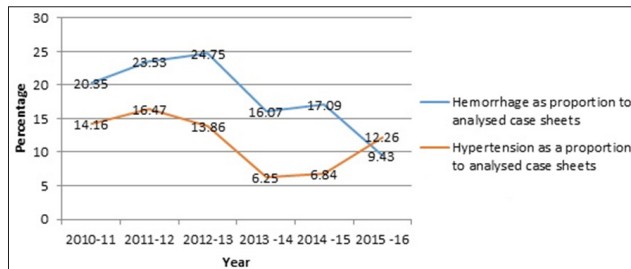


Figure 2. Haemorrhage and Hypertension Deaths

Source: SRS 2014-16 estimates

## Definition

According to WHO,<sup>8</sup> PPH is generally defined as blood loss greater than or equal to 500 ml within 24 hours of childbirth, while severe PPH is blood loss greater than or equal to 1000 ml within 24 hours of childbirth.

## Classification of PPH

PPH is often classified as primary/immediate/early, occurring within 24 hours of birth, or secondary/delayed/late, occurring more than 24 hours post-birth to up to 12 weeks postpartum.<sup>9</sup>

## Causes of PPH<sup>10</sup>

- Tone
  - Over distended Uterus
  - Uterine Muscles Exhaustion/Uterine Atony(90%)
  - Intra amniotic Infection
  - Functional/ Anatomic Distortion of Uterus
- Trauma
  - Cervix, Vagina and Perineum Laceration
  - Caesarean Section
  - Uterine Rupture
  - Uterine Inversion
- Tissue
  - Tissue (Retained Product of Conception)
  - Abnormal Placenta
  - Placenta Praevia/Abruptio Placenta
  - Blood Clots Cotyledons
- Thrombin
  - Thrombin (Abnormality of Coagulation)

- Coagulopathy
- Therapeutic

## Sign & Symptoms

- Uncontrolled bleeding
- Decreased Blood Pressure
- Increased Heart Rate
- Decrease in the Red Blood Cells
- Swelling and pain in vagina
- Enlarged Uterus

## Other Signs

- Pallor
- Tachycardia
- Hypotension
- Altered Level of Consciousness
- Restlessness
- Drowsiness
- Maternal Collapse

## Primary Management of PPH in Rural Centres by Health Professionals<sup>10-12</sup>

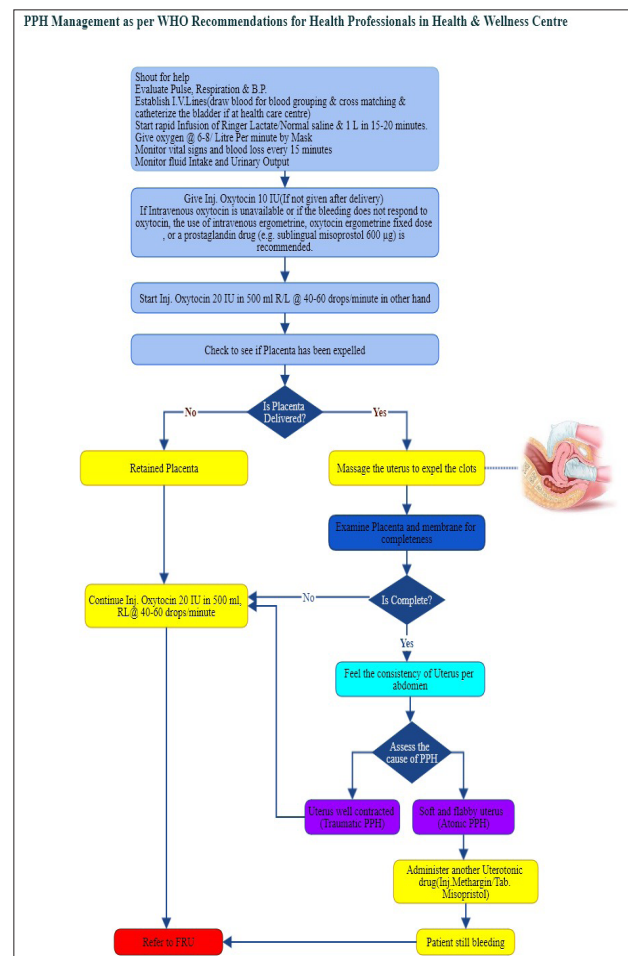


Figure 3. PPH Management as per WHO Recommendations for Health Professionals in Health & Wellness Centre

## Role of Health Professionals in Early Referral/ Chain of Referral<sup>9</sup>

### Important Guidelines to remember at the Time of Referral

- Call for emergency Obstetric Team
- Stabilize the Patient
- Arrange the quickest method of Transport
- Arrange for husband or close relative to accompany the Patient
- Never Leave the patient alone
- Closely monitor the vitals
- Maintain hydration level of Patient
- Inform to health team of CHC/DH to avoid delay in patient's management

### Chain of Referral

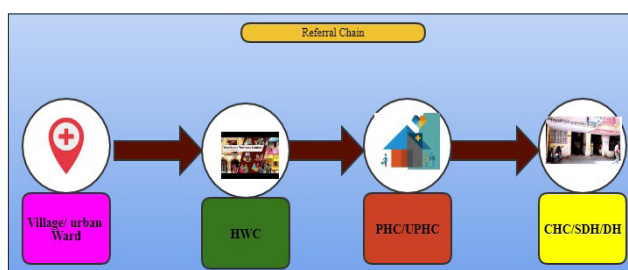


Figure 4

### Strategies and Intervention to Reduce the Maternal Mortality Rate

In 2016, Ramdurga U et al. reported in their study that in India, PPH is responsible for nearly 40% of all maternal deaths.<sup>13</sup> Most of these deaths occur in primary health settings which frequently lack the essential equipment and medication, are understaffed, and have limited or no access to specialist care. Community healthcare workers are regarded as essential providers of basic maternity care, and the quality of care they provide is dependent on the level of knowledge and skills they possess.<sup>9</sup>

Lawrence S described in her paper that health professionals working in rural health settings where the incidence of maternal deaths is more due to pregnancy-induced hypertension progressing towards eclampsia and postpartum haemorrhage. It was observed that health professionals working at the grass-root-level lacked skills in making clinical judgments, imparting the right primary treatment, and deciding the right health settings for a referral. Further, she mentioned the use of readily available information technology and opined that providing the needed technology to each of these workers can help prevent deaths.<sup>14</sup>

Noordam AC et al.<sup>15</sup> described the Millennium Development Goal and addressed the need to avail the benefits of new technologies, especially those related to communication, i.e.

mobile phones. The use of mobile phones in the health system is called mHealth. It is widely used in Africa as the fastest communication aid to prevent maternal deaths by taking guidance for the primary management of pregnancy-induced hypertension and postpartum haemorrhage.

### Conclusion

In spite of these high mortality rates, WHO commended India for its groundbreaking progress in recent years in reducing the maternal mortality ratio (MMR) by 77%, from 556 per 100000 live births in 1990 to 130 per 100000 live births in 2016. India's present MMR is below the Millennium Development Goal (MDG) target and puts the country on track to achieve the Sustainable Development Goal (SDG) target of MMR below 70 by 2030.<sup>16</sup>

The health app on management and referral guidelines on postpartum haemorrhage, provided by the government of Madhya Pradesh, if installed on the devices of health professionals, may contribute to reducing the maternal mortality rate by timely management and referral of cases at appropriate centres.

**Conflict of Interest:** None

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