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Referral in obstetrics - summary and key point

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Abstract

As per one estimate, in India, 30,000 maternal deaths take place annually. Although India has made a huge progress in reducing its Maternal mortality ratio (MMR) from 301 to 88 over the past 25 years, this reduction is not reflected equally in high focus states, such as Madhya Pradesh (MP). An inappropriate referral system has been identified as a key factor affecting MMR in high focus states in India. This review article aims to summarize the referral process and suggests key recommendations for referral of a sick pregnant woman across the health facilities. To reduce preventable maternal deaths, India must refine referral pathways with standardized triage and tracking, while MP must address transport and workforce gaps.

Keywords: MMR, Maternal death, Referral in obstetrics

1. Introduction

As per one estimate, in India 30,000 maternal deaths take place annually. Although India has made a huge progress in reducing its Maternal mortality ratio (MMR) from 301 to 88 over last 25 years,[1] this reduction is not reflected equally in high focus states like Madhya Pradesh [Table 1]. Inappropriate referral system has been identified as a key factor affecting MMR in high focus states in India. This review article aims to summarize the referral process and suggests key recommendations for referral of a sick pregnant woman across the health facilities.

2. What is referral?

Referral is a process in which a health worker at one level of the health system, having insufficient resources (drugs, equipment, skills) to manage a clinical condition, seeks the help of a better or differently resourced facility at the same or higher level to assist in or to take over management of the case.

Madhya Pradesh (MP) has a high maternal mortality ratio (MMR) (159/100,000) and an elevated lifetime risk of maternal death (0.47%).[2] Contributing factors include the leading causes of maternal death (postpartum hemorrhage, hypertensive disorders, infection, etc.) and persistent delays in recognizing and managing obstetric emergencies. Because of limited healthcare access, relatively high home delivery rates, and socioeconomic challenges, MP needs accelerated annual reductions of 6.8 % for MMR. The annual reduction rate of MMR for MP is 5.8% at present, which is lower than the national average of 7.5%. Up to 30% of maternal deaths in high-burden regions are linked to breakdowns in the referral chain.

Referral guidelines are therefore required to ensure timely, coordinated, and appropriate care, addressing systemic gaps and improving maternal and neonatal outcomes. A robust, fast, accountable, and well-connected referral system helps in optimal utilization of services and facilities at each level, ensures distribution of equitable access at all levels of health facilities, and helps optimize patient outcomes.

To reduce preventable maternal deaths, India must refine referral pathways with standardized triage and tracking, while MP must address transport and workforce gaps [Table 2]. Empowering frontline workers with simple screening tools (vitals and danger signs) and strengthening district emergency care are crucial. A multi-tiered model (the “Three Delays” framework)[3] aligning community awareness, transport, and facility readiness can guide system improvements ultimately, coordinated implementation

Table 1: Comparative declines in national and state indices

Year	India MMR (per 100,000)	Madhya Pradesh MMR (per 100,000)
2014–2016	130	221
2015–2017	122	203
2016–2018	113	199
2017–2019	103	173
2018–2020	97	173
2019–2021	93	173
2020–2022	88	159

MMR: Maternal mortality ratio

Table 2: Potential gaps in referral system

Parameter	India (2020–2022)	Madhya Pradesh (2020–2022)
Maternal mortality ratio	88/100,000	159/100,000
Lifetime risk of maternal death	0.18%	0.47% (1 in 200 women)
Adequate antenatal care (≥4 visits)	81%	60%
Ambulance delay (>2 h)	~20% (rural)	>50% (rural/tribal)
Intensive care unit bed availability (rural health)	Limited	Severe shortage at the district level
Skilled obstetric workforce	Moderate urban coverage	~40% vacancies in primary health centers
Blood storage units (district level)	Partial coverage	Limited to a few tertiary centers

of these strategies – supported by robust monitoring and community engagement – can transform maternal health outcomes in high-burden regions.

2.1. Objectives of good referral system and guidelines are as follows

1. Ensure timely identification and referral of critical cases
2. Reduce maternal morbidity and mortality
3. Standardized referral processes
4. Optimize resource utilization
5. Improve coordination between health facilities
6. Enhance pre-referral stabilization
7. Reduce financial and emotional burden on patients
8. Strengthen capacity at lower-level facilities
9. Promote Equity in access to care
10. Support monitoring and evaluation.

3. Types of referrals

A. Emergency referral is arising medically acute condition of the patient requiring immediate referral to other place due to inadequate resources, such as drugs, equipment, and skills, where patient needs medical assistance in transportation and immediate emergency care at the referral center.

B. Routine referral is a chronically ill patient or an acute condition of the patient managed by primarily, medically or surgically, requiring further management at other place due to inadequate resources, such as drugs, equipment, and skills, where patient doesn't need medical assistance in transportation and immediate emergency care at the referral center.

3.1. Few common indications of referral in obstetrics[4]

- Hypertensive disorders: Eclampsia/severe pre-eclampsia with any of the following
  - Respiratory failure (a) Rate more than 20/min (b) chest full of crepitations (c) SpO_2<94 on oxygen support

  - Antepartum hemorrhage
  - Renal Failure: Reduced urinary output<400 in 24 h
  - Platelet count below 1 lakh
  - Raised serum bilirubin or icterus
  - Deeply unconscious with no eye opening, verbal, or motor response
  - Sudden hypotension and shock.
- Anemia
  - Severe anemia below 6 g%
  - Severe anemia with circulatory failure
  - Sickle cell disease (diagnosed or suspected) with third-trimester pregnancy
  - Combination of anemia with pre-eclampsia.
- Surgical
  - Rupture uterus
  - Previous section with placenta previa (Placenta accreta syndrome)
  - Retained adherent placenta
  - Intraoperative complications needing prolonged surgery and transfusion.
- Medical disorders complicating pregnancy
  - Heart Disease: Rheumatic heart disease, cardiomyopathy, congenital
  - Viral hepatitis
  - H1N1, Covid
  - Any severe viral infections.

There may be some non-medical reasons for referral as well like

1. Unavailability of emergency operation theatres (47%)
2. Unavailability of Neonatal Intensive Care Units (45%)
3. Unavailability of Anesthetists (24%)
4. Unavailability of Pediatrician (22%)
5. Unavailability of Obstetrician (12%).

3.2. Timing of referral

A. Antenatal

Routine referral in the antenatal period may be required in suspected or confirmed medical problem in the mother or the baby, which will require an expert obstetrician or some other specialist doctors to be present at the time of normal or operative delivery. Few examples include maternal cardiac disease, maternal antiphospholipid syndrome, morbid adherent placenta, fetal congenital anomaly requiring a pediatric surgeon, etc., timely referral in the antenatal period allows a higher center team to evaluate, optimize and manage the patient in the best possible manner [Tables 3 and 4].
Emergency referral in the antenatal period is required when there is a sudden, unprecedented acute catastrophic event occurring after trauma, sudden pre-vaginal bleeding due to placenta previa, or any kind of medical emergency situation warranting further treatment at a higher or at different place.

Table 3: Summarizing a few DOs and DONTs of referrals in obstetrics

DO's	DON'Ts
Stabilise	Do not refer a very unstable or critical patient
Give primary medical/surgical management	Do not refer without primary management
Secure IV line and give symptomatic supportive management, such as IV fluids, oxygen, etc.	Do not refer without securing essential access/support
Document in detail about the health status at time of referral, reason and indication of referral, referring doctor with contact details, management given in detail at referring facility, any particular remark	Do not refer without incomplete/no documentation of reasons and details
Refer to appropriate higher unit that can provide the necessary management and to minimize time delay	Do not refer to a lesser-equipped facility
Inform and follow-up to ensure arrival at the higher unit and avoid diversion to other units	Do not refer a low-risk patient without an indication

B. During labor/During surgery (This period should be from the start of the first stage of labor, that is, start of labor pains, to at least 24 h after the 3rd stage of labor, that is, delivery of placenta).
During labor, all referrals should be considered as emergency referral and all the does and don'ts of emergency referral should be followed for whatsoever reason health professionals are referring the patient.
C. Postnatal (This period should be considered 24 h after the 3rd stage of labor to 6 weeks).
In this routine and emergency referrals can be for various medical and surgical emergencies, such as sepsis, intestinal obstruction, etc.

3.3. Specialty preference

A. Branch-specific referral, for example, Cardiac, neurologic, surgery, respiratory, urological, nephrological, etc.
B. Special infections, such as Covid, H1N1 ds and Viral Hepatitis.

3.4. Delay in ambulance arrangement/arrival

- In case of delay in arrival, please continue your management to the best of your abilities
- Inform your higher authorities regarding the delay so that they can take action
- Note the name of the ambulance driver and his mobile number on the referral slip
- Note the actual time of departure of the ambulance with the patient on the referral slip.

3.5. Retrograde referrals

- Do not refer the patient to the district hospital (DH) if you know she cannot be managed in DH and needs a tertiary center
- When the medical college is closer, refer directly to the Medical college hospital
- Inform your authorities in such situations
- Inform the medical college team.

Table 4: Proposed "Three Delay" frame

Delay 1	**Delay 2**	**Delay 3**
Decision to seek care	Reaching care	Receiving quality care
Gaps include low antenatal care uptake (60% in Madhya Pradesh) and poor danger-sign awareness	Delays (>50% >2h) and remote coverage remain challenges.	Staffing shortages (40% vacancies) and a lack of blood storage hinder care
Interventions include JSY (ASHA counselling), PMSMA (risk detection), and community awareness campaigns (Sanjivan)	Covered by JSSK transport and 102 ambulances. Needs stringent logbook records, live tracking, and audits	Addressed by LaQshya (Labor room upgrades), SUMAN (respectful care), and MDSR

Table 5: Summarising policy-implementation gaps and recommended interventions

Program/Area	**Implementation Gap (Madhya Pradesh)**	**Suggested intervention**
JSY+102 Ambulance	Poor documentation, staff shortages, and misuse of referral pathways	Standardize referral logs; strengthen monitoring; digitize referral tracking; enforce staff-norms
102 ambulance service	>50% of ambulance calls exceed 2-h response time	Geographic information systems-based ambulance deployment; increased fleet in underserved areas; real-time tracking
JSSK services	Critical services (e.g., sonography) are unavailable due to absent staff	Ensure staff rosters or on-call contracts; frequent accountability checks; backup arrangements
ASHA training and support	Inconsistent partograph use; only~33% postnatal visits completed	Periodic refresher training; supportive supervision; digital tracking of home visit compliance
MDSR (death reviews)	Underreporting of maternal deaths; delayed audit feedback	Mandate timely district-level death reviews; establish real-time dashboards; integrate feedback into policy
Sanjivan multisectoral roadmap	Early success but risk of lapses if funding/staff not secured	Formalize permanent budgets; institutionalize cross-sector coordination (nutrition, WASH, etc.)

Table 6: Showing level-wise strengthening recommendations

Level	Current gaps in MP	Recommended actions
Sub-Center	ANMs lack triage tools and supplies	Train ANMs on vitals/red flags; provide BP cuffs, oximeters, and thermometers
PHC/CHC (FRU)	Limited EmOC services; poor transport links	Train staff in emergency obstetric care (LSAS/CEmOC); equip for blood transfusion and surgeries; ensure dedicated ambulances
District/ Tertiary	Overcrowding; delayed referrals	Establish obstetric HDUs/ICUs; implement digital referral feedback loops; conduct regular death audits
Community	Low awareness of pregnancy risk signs	ASHA-led awareness drives; community health talks; 102- emergency SMS alerts

PHC: Primary Health Center, CHC: Community Health Center, FRU: First Referral Unit, ANM: Auxiliary Nurse Midwife, HDUs: High Dependency Units, ICUs: Intensive Care Units

3.6. Recommendations [Tables 5 and 6]

1. Further strengthening of first referral units
2. Adequate staffing at all facility levels to minimize staffing-related management issues, delays, and referrals
3. Standardized screening tools for healthcare staff at peripheral units
4. Quick "rule for staff": One red flag = call ambulance + refer; two abnormal vitals = start stabilization + urgent refer
5. Mandate pre-referral communication (call or messaging) from the primary health center (PHC) to referral center
6. Consistent mandatory record keeping of refer out and refer in along with ambulance logbooks
7. Audits of referrals to ensure both avoidance of unnecessary referral and prompt, timely indicated referrals
8. Geographic information systems-based planning and real-time tracking of 102 and referral ambulances
9. Create digital referral feedback systems (so lower centers know outcomes); conduct regular district-level audits
10. Mandate that DHs return completed referral feedback slips to the originating PHC or Sub Center to maintain continuity of care
11. Initiate IEC campaigns (through radio and community meetings) to inform families about maternal danger signs and access to free transportation.

4. Conclusion

In conclusion, robust referral system is backbone of safe motherhood program5.

- geographic and infrastructure gaps need to be identified and addressed
- risk based stratification should be facilitated for judicious use of manpower and resources
- continuum of care must be strengthened using technology aided effective communication
- front line health workers must be empowered and critical barriers must be overcome in order to strengthen referral in obstetrics and thus contribute to improvement in maternal health.

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