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Karnataka Regional Branch

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CENTER FOR GLOBAL HEALTH & DEVELOPMENT

Recommendations for Reducing Maternal Mortality in Karnataka



Based on Proceedings of Conference on Reducing Maternal Mortality in Karnataka

Presented to the Government of Karnataka
August 2026

Compiled by
Dr Ranjini C R
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School of Economics and Public Policy,
R V University, Bengaluru, India.

With inputs from
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Chairperson,
Indian Institute of Public Administration,
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2. Detailed Program of the Conference on Reducing Maternal Mortality in Karnataka

Venue – R.V. Teachers College, Jayanagar, Bengaluru. September 26, 2025

Time	Description	Speaker
10.00 am	Welcome Address	
10:15 am	Signing of MoU between R V University and Indian Institute of Public Administration, Karnataka Regional Branch	
10:30	**Inauguration and Inaugural Speech:**	**Shri Dinesh Gundu Rao,** Minister of Health and Family Welfare, Government of Karnataka
11:45	Coffee Break	
12.00 to 12:15	**Karnataka Government's Initiatives to Reduce MMR**	**Dr. Rajkumar**, Deputy Director, Maternal Health, Department of Health and Family Welfare, Government of Karnataka.
12:15 to 1:30:	**Panel 1 :*Preventing Maternal Deaths: Solutions and Strategies***	**Moderator: Dr. Latha Venkataram,** Lead Consultant, OBG Department, Rangadore Hospital, Bengaluru **Co-Moderator: Dr. Savitha C,** Medical Superintendent, Vani Vilas Hospital, Bangalore Medical College. Panellists: ▪ **Dr. Shubha Rama Rao**, Retd. HoD, St. Martha's Hospital ▪ **Dr. Susheela Rani**, Manjushree Hospital ▪ **Dr. Shoba** ▪ **Dr. Madhva Prasad**. St. John's Hospital ▪ **Dr. Srimath S**, Rangadore Hospital
1:30 to 2:30	Lunch Break	
2:30 to 3:30	**Keynote Address** (Online	**Dr. Sharana Prakash R Patil,** Minister of Medical Education and Skill Development, Government of Karnataka.
3.30 to 3.45	Coffee Break	
3:45 to 4:45	Parallel Sessions	

Panel 2: ***Translating Evidence into Policy: NGO and Research Perspectives on Maternal Mortality Reduction***		**Moderator: Dr Ranjini Raghavendra**, Executive Director, Centre for Global Health and Development, RV University. Panellists: ▪ **Smt. Veena Sriram Rao**, IAS Retd Former Secretary, Govt. of India ▪ **Dr. Jahnavi Nilekani**, Astrika Foundation ▪ **Dr. Angel Sudha**, Institute of Public Health (IPH) ▪ **Dr. Aditi Iyer**, Public Health Foundation of India (PHFI) ▪ **Dr. Prathana**, Karnataka Health Promotion Trust (KHPT)
Panel 3 (Hybrid) (Venue: Minerva Auditorium): ***Strengthening Health System Capacities for Safe Motherhood across Care Levels***		**Chair: Dr. Sheela V. Mane** Panellists: ▪ **Dr Sutapa B Neogi**, Director, International Institute of Health Management Research ▪ Health personnel from select taluks and districts
4:45 to 5:30	**Panel 4: Policy Recommendations for Safe Motherhood in Karnataka: A Roadmap for Government Action** (Venue Minerva) **Presentations on Policy Recommendations by Chairs/Moderators**	**Chair: Shri T.M. Vijay Bhaskar**, **IAS** (Retd.) Chairperson, Indian Institute of Public Administration, Karnataka Regional Branch. **Co-Chair: Shri Harsh Gupta**, Principal Secretary, Health and Family Welfare, Govt of Karnataka
5:30	Vote of Thanks	

Partners: School of Allied and Healthcare Professionals, R. V. University.

Funded by Rashtreeya Sikshana Samithi Trust

3. List of Abbreviations

ANM - Auxiliary Nurse Midwife	HMIS - Health Management Information System
BMRCI - Bangalore Medical College and Research Institute	HRH - Human Resources for Health
CHC - Community Health Centre	HRP - High-Risk Pregnancy
CSR - Corporate Social Responsibility	ICM - International Confederation of Midwives
CTG - Cardiotocography	ICU - Intensive Care Unit
Dakshata - Skilled Obstetric Care Training Program	IFA - Iron and Folic Acid
EMRI - Emergency Management and Research Institute	KMERC - Karnataka Medical Education and Research Corporation
FCM - Ferric Carboxymaltose	LaQshya - Labour Room Quality Improvement Initiative
FLW - Frontline Worker	MDSR - Maternal Death Surveillance and Response
FOGSI - Federation of Obstetric and Gynaecological Societies of India	MEOWS - Modified Early Obstetric Warning Score
FRU - First Referral Unit	NPM - Nurse Practitioner in Midwifery
GBA - Greater Bengaluru Authority	NPME - Nurse Practitioner in Midwifery Educator
GDM - Gestational Diabetes Mellitus	OBG/OBGYN - Obstetrics and Gynaecology
GPS - Global Positioning System	PIH - Pregnancy-Induced Hypertension
GIMS - Gulbarga Institute of Medical Sciences	PMSMA - Pradhan Mantri SurakshitMatritva Abhiyan
Green Corridor - Obstetric Emergency Transport Protocol	RADAR - Remote Assessment, Diagnosis and Alert in Real-time
Gestosis Scoring - Scoring system for hypertensive disorders in pregnancy	RAT - Rapid Action Team
G.O. - Government Order	RGUHS - Rajiv Gandhi University of Health Sciences
SNCU - Special Newborn Care Unit	UMHDS - Unified Maternal Health Digital Stack
SCMT - Supportive Community Monitoring Tool	USG – Ultrasonography
SIMS - Shimoga Institute of Medical Sciences	VHSNC - Village Health, Sanitation and Nutrition Committee
SNCU - Special Newborn Care Unit	VHSND - Village Health, Sanitation and Nutrition Day
SOP - Standard Operating Procedure	WASH - Water, Sanitation and Hygiene
SRS - Sample Registration System	qSOFA - quick Sequential Organ Failure Assessment (mentioned in Pillar 2)
SUMAN - SurakshitMatritvaAashwasan	Zinc Screening - Diagnostic test for zinc deficiency in high-risk pregnancies
THO - Taluk Health Officer	Zero-Refusal Policy - Policy prohibiting denial of obstetric emergency admissions

4. Executive Summary

Accelerating the Journey to Zero Preventable Maternal Deaths

Maternal health is a top priority for the Government of Karnataka, which has seen a noteworthy 24% decrease in its Maternal Mortality Ratio (MMR), now standing at 69 per 100,000 live births (SRS 2024–25). This success is attributed to robust state and national programs. Nevertheless, preventable fatalities persist—largely due to slow response times in diagnosis, referral, and clinical care. These issues are most prevalent in rural and semi-urban regions where real-time oversight and medical preparedness require further improvement. This document is based on the contributions made and discussions held in a "*Conference on Reducing Maternal Mortality in Karnataka*" jointly organisedby Indian Institute of Public Administration, Karnataka Regional Branch in collaboration with Centre for Global Health and Development, School of Economics and Public Policy, RV University, Bengaluru on Friday, 26th September 2025. It suggests actionable recommendations to the Government of Karnataka to accelerate the journey to zero preventable maternal deaths.

Summary of Key Recommendations

1. Strengthening the "Golden Hour" Referral Chain

The document identifies sub-optimal facility readiness and communication gaps as primary killers.

Policy Action:

Implementation of a "Green Corridor" Protocol for Obstetric Emergencies.

Implementation:

- Equip all referral ambulances with GPS and real-time biometric transmission so receiving Obstetric ICUs/HDUs are prepped *before* the patient arrives.
- Institutionalize a "Zero-Refusal" Policy backed by a digital bed-availability tracker across all Mother and Child Hospitals (MCHs).

2.Human Resource Optimization & Midwifery Scaling

To counter "manpower constraints" and "inconsistent adherence to guidelines."

Policy Action: Professionalization and Decentralization of theMidwifery Initiative.

Implementation:

- Create a dedicated cadre of Senior Nurse Practitioners (Midwifery) with prescribing authority for basic emergency drugs in rural clusters.
- Mandate Quarterly Skill-Drills (Dakshata 2.0) at the facility level, using simulation-based training for emergency obstetric care.

3. ***Supply Chain & Infrastructure Resilience***

Addressing the limited access to emergency kits, blood, and blood products.

- Policy Action: Decentralized Emergency Resource Hubs.

Implementation:

- Establish "Mini-Blood Storage Units" at every Taluka-level hospital to ensure blood products are available within 30 minutes of a hemorrhage event.
- Automate the Inventory Management System for Essential Obstetric Drugs to trigger auto-restock alerts, preventing "stock-out" situations in rural clinics.

4. ***Digital Integration & Real-Time Surveillance***

To address "fragmented digital tracking" and "delays in recognition," the state should mandate a Unified Maternal Health Digital Stack (UMHDS).

- Policy Action: Transition from retrospective audits to Real-Time Risk Prediction.

Implementation:

- Deploy AI-enabled point-of-care diagnostics in rural/tribal areas to automatically flag high-risk pregnancies (e.g., pre-eclampsia, anaemia) to a central command center.

5. *Establish a Digital "Live" Dashboard* for every district to track the movement of high-cases from Primary Health Centers (PHCs) to Referral Units.

6. *Community Engagement and Near -Miss Surveillance*

Moving from surveillance to proactive response.

- Policy Action: Strengthening Maternal Death Surveillance and Response (MDSR)
- volve MDSR into Maternal Near-Miss Surveillance, studying cases where mothers survived complications to identify systemic "near-failure" points.
  Implementation:
- Introduce a "Community Scorecard" system where tribal and rural populations can provide feedback on facility readiness and the SUMAN initiative's "zero-denial" promise.

7. The Fiscal Impact

While these recommendations require an upfront investment in digital infrastructure and specialized manpower, the long-term ROI is measured in thousands of lives saved and a significant reduction in the socio-economic burden of maternal morbidity.

5. Introduction

Maternal Health in Karnataka: The Road to Zero Maternal Deaths

Maternal health remains a paramount public health priority for the Government of Karnataka, which has already achieved a landmark 24% reduction in its Maternal Mortality Ratio, bringing it down to 69 per 100,000 live births according to SRS 2024–25. While this success is a testament to robust national and state initiatives, the "final mile" of this journey remains the most formidable challenge. Preventable maternal deaths continue to occur due to critical delays in risk recognition, referral, and clinical treatment, particularly in rural and semi-urban areas where facility readiness and real-time monitoring are often sub-optimal. To bridge these gaps, the state is shifting its focus toward a unified, accountable, and technology-driven maternal care ecosystem. This document provides actionable policy recommendations to transition Karnataka from a "significant decline" to a mission of ‘zero preventable deaths’, ensuring that every mother is protected through a digitally integrated, emergency-ready healthcare network.

The Current Landscape

- The Win: MMR has dropped to 69 per 100,000 live births (SRS 2024–25)—a 24% reduction driven by national initiatives and specialized midwifery.
- The Reality: Preventable tragedies still occur, primarily due to the "Three Delays": Recognition, Referral, and Treatment.

Critical Gaps & Challenges

Despite our progress, rural and semi-urban areas face systemic bottlenecks:

- Risk Prediction: Inability to identify high-risk pregnancies before they become emergencies.
- The "Silent" Transfer: Lack of real-time tracking and communication during patient referrals.
- Facility Readiness: Manpower shortages and inconsistent access to life-saving blood products and emergency drugs.
- Data Fragmentation: Incomplete digital records and a lack of continuous, point-of-care monitoring.

Our Foundation: Current Successes

We are building on a robust framework of existing programs:

- Financial & Service Safety Nets: JSY, JSSK, and the SUMAN "zero-denial" initiative.
- Quality & Training: LaQshya certification and Dakshata training for obstetric excellence.
- Specialized Infrastructure: Operationalized Mother & Child Hospitals (MCHs) and dedicated Obstetric HDUs/ICUs.

The Vision: Mission Zero

"*To transform Karnataka's maternal care into a unified, accountable, and technology-driven ecosystem where every mother is seen, tracked, and cared for in real-time*."

Mission: Zero Preventable Maternal Deaths

To bridge the gap between rural facilities and urban expertise using integrated risk-identification tools and an emergency-ready health system.

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6. Recommendations based on Conference Proceedings

6.1 Clinical Aspects

6.1.1. Improving the quality of screening for risks during the antepartum period

Deaths due to eclampsia or hypertension-induced complications and anemia can be prevented through better screening during the antepartum period. To improve healthcare seeing by women and their families, a list of symptoms of physical and mental health conditions requiring attention during the ante, intra and post-partum periods can be introduced into Taayi Cards. Frontline workers (ANMs and ASHAs) can be trained to help women and their families understand the information during home visits and village-based antenatal clinics. To improve the quality of clinical assessments by doctors and staff nurses in facility-based antenatal clinics, digital technology-based solutions can be used**.**

6.1.2.Antenatal Care as a Core Safety Strategy

Poor quality antenatal care was found to be a key driver of near-miss and mortality cases. Antenatal care must be strengthened as a preventive system rather than a formality, with early detection and close monitoring of hypertensive disorders, anemia and medical comorbidities integrated into routine care.

6.1.3. Improving the quality of intra-partum care in healthcare institutions

Post-partum hemorrhage, a common cause of death during labour and delivery, can be addressed by reorienting intrapartum care to WHO and LaQshya guidelines to make birth a positive experience. These guidelines recommend the minimization / cessation of unnecessary and potentially harmful obstetric practices (e.g., fundal pressure, routine episiotomies, and unindicated caesarean sections) and encourage use of practices such as controlled cord traction and partograph. Deaths during or immediately after c-sections need careful clinical audits. What went wrong to cause a death? Why are so many c-sections being conducted?

Excessive C-section rates is a manifestation of staff shortages and other health system weaknesses, which should be addressed. Private sector provider-induced demand can also contribute to the problem. District Health Officers and Medical Superintendents could be tasked with monitoring section rates. In LaQshya-certified hospitals, c-section rates can be emphasized in annual performance assessments. The LaQshya initiative has the potential to improve the quality of intra-partum clinical care. It is recommended that more facilities should undergo quality improvement through quality cycles, mentoring, gap analyses, and quality circles in the lead-up to LaQshya certification. However, LaQshya alone will not adequately reorient intra-partum care in keeping with WHO’s guidance on positive birth experience.

Ramalingaswami Centre for Equity and Social Determinants of Health, Public Health Foundation of India's intervention to strengthen and sustain **respectful maternity care**in LaQshya-certified hospitals – LaQshya Smriti – will go a long way to improve maternal and child health outcomes.

6.1.4. Strengthening diagnostics for HRPs and labor monitoring

Monitoring of normal labor is predominantly done by nursing cadre of staff and is prone to human error.Adding devices and technology to improve monitoring and help identify the changes in maternal and fetal conditions that require referral or intervention early during labor might improve timely referrals. These devices include Non Stress Test (NST) and Cardiotogography (CTG) which will avoid obstructed /prolonged labor and related maternal-neonatal complications

6.1.5. Standardized Risk Identification at Point of Care

All delivery points should adopt visible, color-coded maternal early warning systems to enable rapid identification of deterioration. Laminated MEOWS charts and standard escalation pathways should be displayed in labor rooms so that midwives and junior doctors can act without dependence on digital devices.

6.1.6. Early Referral and Pre-ICU Prevention

Late referrals from PHCs and peripheral centers were identified as a major contributor to maternal morbidity and mortality. Systems must be redesigned to prioritize early identification of complications such as hypertension, sepsis and anemia and trigger timely referral before women reach critical stages requiring ICU care.

6.1.7. Strengthening the "Golden Hour" Referral Chain

The document identifies sub-optimal facility readiness and communication gaps as primary killers.

- Policy Action: Implementation of a "Green Corridor" Protocol for Obstetric Emergencies.

Implementation

- Equip all referral ambulances with GPS and real-time biometric transmission so receiving Obstetric ICUs/HDUs are prepped *before* the patient arrives.
- Institutionalize a "Zero-Refusal" Policy backed by a digital bed-availability tracker across all Mother Child Hospitals (MCHs).

6.1.8. Postnatal Surveillance and Follow-up

A large proportion of maternal deaths occur in the postnatal period. Policies must ensure structured observation after delivery, with mandatory post-discharge counselling, home visits and follow-up to identify delayed complications such as postpartum hypertension, infection and bleeding.

Mandatory minimum hospital stay after delivery should be enforced, with longer observation for caesarean and high-risk cases. Discharge processes must include blood pressure monitoring plans, infection warning signs, mental health screening and clear return-to-care instructions.

6.1.9. Mandatory Emergency Readiness at All Facilities

Every delivery point, public and private, should maintain standardized obstetric emergency kits containing drugs and devices for managing hemorrhage, eclampsia and sepsis. This includes uterotonics, tranexamic acid, magnesium sulphate, antibiotics, suction cannulas and uterine tamponade devices. Emergency preparedness must be verified through periodic drills and audits.

6.1.10. Clinical Readiness During Transport

Maternal transport must be treated as an extension of clinical care. Ambulances used for maternity cases should be equipped and staffed to manage airway, blood pressure and haemorrhage during transit, and real-time communication with receiving facilities should be mandatory to reduce handover delays.

6. 1.11. Blood Product Access Beyond Whole Blood

Survival in hemorrhage depends on timely access to clotting factors, not just stored blood. Mechanisms should therefore be created to ensure the availability of fibrinogen, factor VII and other blood components at referral centers through public-private partnerships and supply-chain reforms.

6.1.12. Equipment Accuracy and Certification

Blood pressure monitors, labor room devices and ICU equipment must undergo routine calibration and certification. Unvalidated or inaccurate equipment was identified as a silent contributor to missed diagnosis of hypertensive disorders and delayed intervention.

6.1.13. Reduction of Unnecessary Interventions

Policies should discourage avoidable labor induction and unoptimized caesarean sections, which were identified as contributors to placenta accreta, hemorrhage and critical illness in subsequent pregnancies.

Diagnostics for identifying high risk pregnancies in the peripheries through innovative solutions like sample collection and transport systems; PPP models for ultrasonography; health entrepreneurship model for sample testing etc.

6.2. Strengthening Midwifery

Strengthening midwifery and ensuring sustainability of the Nurse Practitioner in Midwifery (NPM) program.

Establishing a new cadre of professional midwives in India's health system requires time, effort, resources, and a long-term commitment to ensure continued improvement in maternal health outcomes. To strengthen the existing Nurse Practitioner in Midwifery (NPM) program in Karnataka, we recommend the following:

1. ***Create a clear career pathway for NPMs***: Defining a clear career progression and their position within the health system will motivate more individuals to join and remain in the program, ensuring its sustainability.
2. ***Offer clear and increased incentives***: Providing greater incentives, including better financial compensation for both graduated NPMs and Nurse Practitioner in Midwifery Educators (NPMEs), is crucial to motivate nurses to enroll and continue in the program.
3. ***Align with international standards*****:** The NPM program should continue to meet the International Confederation of Midwives (ICM) Global Standards for Midwifery Education, which recommend that a professional midwifery course, post-nursing degree, should be at least 18 months long. Adhering to these standards ensures the new cadre of midwives receives global recognition.
4. ***Integrate midwifery into education*****:** Including midwifery in pre-service nursing and medical education will increase awareness of midwifery and the NPM program itself.
5. ***Provide facility-level support***: To prevent staffing shortages from becoming a barrier to program implementation, ensuring that district facilities are provided with replacements for nurses sent for the NPM program training is essential.
6. ***Increased private sector participation*** to enhance the spread of midwifery. Currently, only government nurses can apply to become Nurse Practitioner in Midwifery Educators (NPMEs) or Nurse Practitioners in Midwifery (NPMs). To make midwifery care accessible to women from diverse regions and backgrounds, the program must be opened to the private sector.

7. Allow private sector nurses who meet the specified criteria to apply for the government's NPM program at both National and State Midwifery Training Institutes.
8. Invite private nursing colleges and universities to offer a professional midwifery course that aligns with the government's NPM program.
9. Use Aastrika Sphere's digital platform to scale up training programs in a cost effective and efficient manner. Aastrika Sphere is available free of cost to both users and content creators. It can be an effective tool for upskilling of existing healthcare cadres.
10. Build capacities of OBGYNs and midwives on evidence-based care and obstetric emergencies through a detailed training needs analysis and a customized capacity building program.[12]

6.3. Respectful Maternity Care

Women-centric and Respectful Maternity Care (RMC) should be non-negotiable. Research has consistently shown that disrespect and abuse during childbirth can have a traumatising impact on women, negatively influencing their future health-seeking behaviours. While the quality of clinical care and facilities in government hospitals is often superior to private ones, many women and their families perceive private facilities as providing better care due to the mistreatment they have experienced in public institutions.To address this issue, we propose the following recommendations:

1. ***Implement continuous training on RMC***: All staff at healthcare facilities, including non-clinical personnel, should receive continuous training and participate in capacity-building programs focused on Respectful Maternity Care (RMC).
2. ***Collect continuous feedback on RMC****:* Regular feedback should be collected from mothers regarding their experiences with RMC.
3. ***Establish a ranking system based on RMC***: Healthcare facilities should be ranked based on their performance in RMC and woman-centered care.
4. ***Integrate RMC into education***: A detailed module on RMC should be included in all pre-service nursing and medical education courses.
5. Respectful maternity care must be formally embedded into service delivery, including compassionate management of miscarriage, stillbirth and obstetric complications. Training on dignity, communication and emotional safety should be integrated into clinical practice and discharge counselling.

[1] Recommendations by Aastrika Foundation

6.4. Maternal Death Audits

Strengthening the quality and rigor of maternal death audits or verbal autopsies of maternal deaths

Maternal deaths are tragic events and most of them can be avoided.Therefore, it is the responsibility of key stakeholders who constitute the health system to understand they occur so that measures can be instituted and responsibilities taken to prevent a recurrence in the future. Investigations into the causes of maternal deaths are tricky. Information obtained can be partial, colored by grief or guilt, distorted by fear of retribution. This has the effect of compromising the identification of the most probable medical cause(s) of death and contributing factors. If done well, however, maternal death audits or verbal autopsies can be powerful tools to address maternal mortality. The quality and rigor of maternal death audits/verbal autopsies can be strengthened. Reviews/autopsies should be conducted by an independent group comprising a mix of medical practitioners (preferably Obstetricians-Gynecologists) and public health researchers who are not connected with the deaths. That is, ***attending doctors should not be tasked with carrying out a verbalautopsy***. Such a group can be created in every district or for a group of districts within a region in the state.

Investigations should be conducted soon after the death (with health providers – doctors, staff nurses, ANMs, ASHAs) and at the end of the mourning period (with families and friends).

Challenges:

- Maternal Death Reviews (MDRs) are often incomplete, delayed, and biomedical-focused.
- No near-miss review system.
- Ambiguous reporting protocols (“others” category).
- Lack of timely transparency.

Here are some guidelines for how the autopsies should be conducted[3]:

Maternal death audits should be conducted by independent teams including obstetricians and public-health experts. It is important that it excludes attending doctors and/or treating clinicians. It should focus on “missed opportunities for prevention” rather than blame or for reprimanding in meetings.

Findings must lead to time-bound corrective actions.

- Shift to Confidential MDRs (Kerala model).

[3]Recommendation by Prof Aditi Iyer, Ramalingaswami Centre for Equity and Social Determinants of Health, Public Health Foundation of India, Bangalore.

- Expand MDRs to include near-miss cases and social determinants.
- Revise maternal death reporting forms (remove “others”).
- Publish quarterly maternal death fact sheets.
- The autopsies should consider what key eyewitnesses have to say, including health providers, relatives and friends. Their observations should be triangulated and compared with test results and other clinical information in medical records.
- The data gathered should be used to construct a timeline of events from each woman’s pregnancy until her death. From this timeline, symptoms, signs and test results can be used to carry out a differential diagnosis of the probable cause(s) of death. The timeline can also be used to identify all the missed opportunities for death prevention.
- The medical causes of deathand the missed opportunities can form the basis for identifying strategies to prevent such deaths from recurring in future.These audits should avoid being used as evidence for blaming or for reprimanding functionaries in the meetings.

Moving from surveillance to proactive response:

- Policy Action: Strengthening Maternal Death Surveillance and Response (MDSR) with Legal Accountability. The feedback and concerns of the frontline workers, family and the public should be valued. Opportunity to express their opinions and space for their feedback to be provided.

Implementation

- Evolve MDSR into Maternal Near-Miss Surveillance, studying cases where mothers survived complications to identify systemic "near-failure" points.

6.5. Capacity Building

6.5.1. Capacity Building for Mid-Level Health Providers: Particular attention should be given to improving the capacity and independence of the nursing and midwifery workforce to enable them to be more directly involved in both routine and emergency obstetric care.

6.5.2. Capacity building for improving Referral Readiness at Facility Level:
Personnel should be trained in referral protocols and referral linkage in order to facilitate timely referral of patients whenever the need arises.

6.5.3. Promotion of a Culture of Clinical Accountability and Learning: It should be encouraged to have a non-punitive, learning-oriented culture where bad events or near misses are discussed in a positive way to learn from them.

6.5.4. Institutionalization of Obstetric Emergency Drills: Regular, mandatory emergency drills for postpartum hemorrhage, eclampsia and sepsis should be embedded into hospital operations. These drills must be conducted across all levels of care, including district, taluk and medical college hospitals, to ensure that teams maintain preparedness, coordination and confidence in handling obstetric emergencies.

6.6. Digitization

6.6.1. Digital Integration & Real-Time Surveillance

To address "fragmented digital tracking" and "delays in recognition," the state should mandate a Unified Maternal Health Digital Stack (UMHDS).

- Policy Action: Transition from retrospective audits to Real-Time Risk Prediction

Implementation

- Deploy AI-enabled point-of-care diagnostics in rural/tribal areas to automatically flag high-risk pregnancies (e.g., pre-eclampsia, anemia) to a central command center.
- Establish a Digital "Live" Dashboard for every district to track the movement of high-risk cases from Primary Health Centers (PHCs) to Referral Units.

6.6.2. Maternal Morbidity / High-Risk Pregnancy (HRP) Management Challenges

- Existing Mother and Child Tracking System (MCTS) system lacks HRP focus; non-compliance and non-adherence is not systematically tracked.
- Referral feedback from OBGYNs to PHC MOs is limited; ad-hoc communication.
- Long-term hospital admissions are difficult for patients in remote areas.
- Postnatal mothers separated from babies in Special Newborn Care Unit (SNCU) settings; lack of counselling, facilities, and mental health support.

Recommendations:

- Digital Tracking of High-Risk Pregnancies (HRPs): Real-time alerts, predictive analytics, geo-enabled dashboards (Uganda model).
- Joint HRP Management: PHC MOs and specialists should collaborate; case sheets should be accessible at both levels; weekly case discussions via e-Sanjeevini/WhatsApp.
- Monthly Online Reviews: Bi-monthly/quarterly LSCS and ICU audits at CHC/TH/DH with PHC participation.

6.6.3. Improving Data Infrastructure

To drive informed health interventions, we must prioritize the development of robust data systems that are inherently reliable, timely, and exhaustive. Strengthening the integrity, scope, and timeliness of our data infrastructure is the foundation of evidence-based health decision-making.

The success of evidence-based health interventions depends on our ability to build and maintain data systems that are not only comprehensive but also consistently up-to-date and trustworthy."

6.6.4. Use of Technology for Real-Time Risk Surveillance

AI-enabled blood pressure monitoring, symptom-triggered alerts and cloud-based labor management systems should be piloted to allow continuous supervision of high-risk women, including during ambulance transfer and inter-facility handover

6.6.5. Dashboard

Develop an anemia dashboard tracking not only Hb levels and IFA uptake but also B12/zinc screening, deworming coverage, and cash transfer utilization.

Publish district scorecards quarterly.

6.6. 6. Platforms strengthening for high-risk pregnancies at Facility level

- Strengthen platforms like Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) and e-PMSMA for the early identification and follow-up of high-risk pregnancies. Ensure that frontline workers (FLWs) and specialists have a shared understanding of high-risk pregnancies (HRP) so that referred women receive timely management. Establish a back-referral mechanism and encourage proper documentation in the MCP card and track the women for adherence to the treatment prescribed through digital mechanisms.
- Integrate digital tracking of HRPs within MCTS: real-time alerts, predictive analytics, geo-enabled dashboards.

6.7. Panchayats and Community Engagement

6.7.1. Anemia Mukt Gram Panchayats

Gram Panchayats (GP) at the village level can play the role of a catalyst in addressing anemia which happens to be a prevalent risk factor duringpregnancy. They can play a crucial role in facilitating behavior change of all the relevant stakeholders in achieving the mission of an ‘Anemia Mukt Gram Panchayat’. The GP can bring awareness on anemia prevention at the village level with greater involvement and coordination among Gram Panchayat members, Self-Help Groups, and community-level organizations. Awareness drives through existing platforms and jathas on prevention of anaemia and good practices can be organised including local dietary practices, use of footwear, toilets, handwashing practices and de-worming.

Declaring Anemia Mukt Gram Panchayat: Reduction in overall prevalence of anemia among women of reproductive age (15-49 years) in the Panchayat to a minimum of 15% from current prevalence. The panchayats can be categorized as gold, silver and bronze based on the percentage of anemia prevalence. Similar approach can be extended to achieve maternal mortality, child mortality, and malnutrition Mukt Panchayat.

6.7.2. Challenges & Recommendations

Challenges:

- Tribal women are disproportionately affected
- Social determinants (dowry, poverty, migration) are excluded from reviews.
- Minimal community participation in maternal death reviews.
- Disrespect and neglect in labour rooms.

Recommendations:

- Collect disaggregated data (caste, tribe, socio-economic status) in maternal reporting.
- Conduct social autopsies (Dead Women Talking model).
- Launch Maternal Death-Free District initiatives with community/panchayat ownership.
- Adopt Respectful Maternity Care Charter and improve privacy/dignity in labour wards.
- Integrate perinatal mental health screening and counselling into ANC/PNC.
- Community awareness on PIH/eclampsia low.

6.7.3. Targeted Campaigns

"Eclampsia Mukt Karnataka" initiative aimed at raising awareness on pregnancy-induced hypertension and ensuring timely identification, referral, and management of high-risk cases.

- **SNCU/Facility Layout Revisions:** Counselling for mothers, mental health support, and better access for postnatal care.

6.7.4.Pre-conception Interventions

There is a need to leverage and strengthen existing programs to include care during thepreconception period. A range of national health programs and schemes are already being implemented in the State, targeting pregnant women. The scope of these interventions can be extended to include women prior to conception, in the following ways:

- The Poshan Abhiyaan Program, can be extended to provide awareness before pregnancy.
- Village Health Sanitation and Nutrition Committee (VHSNC) and Village Health Sanitation and Nutrition Day (VHSND) meetings can be leveraged for preconception care discussions.
- Eligible couple days can be organized on a fixed day in a month at the HWC-SCs.

- Potential new interventions targeting preconception nutrition care planning
- Health screening for newly married couples to screen for possible conditions affecting their health and nutrition status - including anaemia, thyroid levels among others
- Nutrition-related interventions such as provision of supplementary nutrition (micronutrients and take-home rations) post-screening for undernourished and/or anaemic women in the preconception period
- Counselling initiatives for newly married couples and awareness for couples and families through Primary Health Centre teams and frontline workers
- Awareness programs for other key community stakeholders such as Gram Panchayat members and religious leaders
- Awareness programs for adolescents on preconception care, which could be an effort engaging with multi-department stakeholders
- A helpline for new couples can be set up for provision of key information relevant to this period.

6.7.5. Certification of VHSNCs

Continuous capacity building and certification of VHSNC members is important to motivate the VHSNC to take accountability. Hence, capacitating and certifying the members through an e-learning platform can be considered. Supportive Community Monitoring tool (SCMT) should be used by the VHSNCs to monitor the health care service delivery, and health status of the population. This tool will help them in demanding services from health care centres. Additionally, the best-performing VHSNCs can be provided awards (such as those who mobilize funds locally to undertake mobilization and promotional activities) to sustain their commitment and motivation.

6.7.6. Activation of Village-Level Convergence Action Committee/ KavaluSamithis

As part of Sukshema-MNCH project, Karnataka Health Promotion Trust (KHPT) conceptualized and piloted the Sub centre forums/Arogya Mantapa to create the space for building stronger team relationships among these 3 sisters - ASHA, Anganwadi Worker and ANM by understanding each other's struggles, and safeguarding each other's self-respect. These forums have fostered a positive work environment, stronger team relationships and increased MNCH service uptake. On drawing the experience from this pilot, we propose to form Gram Panchayat level convergence action committee including ASHA, AWW, PHCO, CHO and Elected representatives from the panchayat.

Introduce a "Community Scorecard" system where tribal and rural populations can provide feedback on facility readiness and the SUMAN initiative's "zero-denial" promise.

6.8 Administrative Aspects

6.8.1. Decongest Highload Facilities

Utilizing the existing RCH portals/HMIS and other data, it is possible to identify those geographies where the births are being concentrated- the so-called high load facilities. The high load facilities are usually the District Hospitals/ some Taluka level CHCs / Medical college hospitals /FRUs. High workload in the absence of adequate human resources and infrastructure may lead to unintentional neglect, resulting in complications and mortality. To decongest these facilities, certain steps can be taken to reduce, if any, HR vacancies, add additional HR through linkages with the district medical colleges' staff/interns and postgraduate consultants, and improve infrastructure as per the existing guidelines based on the number of deliveries. Most maternal deaths and neonatal complications occur close to the intranasal period; these require timely referral to higher centers.

6.8.2. Service Delivery & Continuum of Care

Some of the main challenges are:

- Fragmented referral chain; women shifted across 3–4 facilities before care.
- Maternal deaths during transit; no centralized system for blood/ICU/specialist availability.
- PHCs underutilized, tertiary hospitals overcrowded.
- Early discharge and minimal postnatal care.

6.8.3. One First Referral Unit (FRU) per Taluk

Identifying one First Referral Unit (FRU) per taluka or sub-taluka level that can function as a 30-40 bedded MCH center with all necessary HR and infrastructure for both normal and high-risk pregnancies, ensuring that the travel time for the pregnant woman is less than an hour. The lesserthe travel time between peripheral communities and the public FRU, the better the chances of maternal and neonatal survival. These plans need to be made specific to the district in consultation with the neighboring districts to ensure seamless transport and referral systems for all levels of care.

6.8.4. Nurse Trainers

Nurse Trainers who are part of the skills lab team, will be responsible for supporting the PHCs and FRUs in the block that they are assigned to. The Nurse trainer will spend 2-3 days once in two months at the PHC to strengthen the knowledge and skills of staff nurses and for team building and problem solving for all PHC staff around aspects of delivering

safe, quality MNCH services. Each Nurse trainer will also spend about 3-7 days in the FRU carrying out similar activities.

6.8.5. Quality Improvement Tools and Principles

Nurse Trainers can use tools and techniques such as observations, PHC staff self-assessment checklists, clinical audits, and client interviews as aids for identifying quality gaps that need to be addressed. Nurse Trainers can upgrade PHC and FRU provider skills through case reviews, confidential reviews of maternal and child morbidity and mortality (and near-miss cases), mini-lectures, demonstrations and modelling of good practices, and bedside case discussions.

6.8.6. Developing Model Labor rooms, Operation Theatres and Formation of QIC in FRUs

The Nurse trainers will visit the FRUs to support the staff in adhering to quality-of-care standards as per Laqshya Guidelines. Since the Nurse Trainers move between the PHCs and FRUs, this will ensure better linkages and continuity of care between facilities. The Nurse trainers will work towards developing model labor rooms and Operation Theatres in the FRUs. The Nurse Trainers and the District Quality Assurance Specialists will activate the Quality Improvement Committees (QIC) in the FRUs to enable them to undertake regular audits of labor wards through self-assessment checklists and develop action plans to solve problems within the labour and postnatal wards.

6.8.7. Professionalization and Decentralization of the Midwifery Initiative

- Create a dedicated cadre of Senior Nurse Practitioners (Midwifery) with prescribing authority for basic emergency drugs in rural clusters.
- Mandate Quarterly Skill-Drills (Dakshata 2.0) at the facility level, using simulation-based training for emergency obstetric care.

Recommendations

- Operationalize Code Blue/Green Corridors integrating 108 services
- Develop centralized referral SOPs with digital tracking of patient transfers.
- Rationalize caseload: PHCs to manage low-risk deliveries; tertiary hospitals reserved for complications.
- Establish short-stay/waiting homes (Mathru Nelle, Mamatha Ghar) for high-risk pregnancies and postnatal care.
- Strengthen newborn tracking and counselling for bereaved families post maternal death.

6.8.8. Human Resources for Health (HRH)

Some of the challenges are:

- Shortage of doctors, ANMs, and nurses at PHC/CHC; frequent transfers dilute skills.
- Overburdened OBGYN specialists; weak midwifery integration.
- Inconsistent capacity to detect/manage high-risk pregnancies.

Recommendations

- Develop and integrate Nurse Professional Midwife (NPM) cadre; expand midwifery training.
- Skill-building for ANMs, ASHAs, and PHC doctors in early identification and referral of PIH, eclampsia, and PPH.
- Conduct workload assessments; redistribute tasks to reduce burnout.
- Create HRP task forces at PHC level with specialist oversight.

6.8.9. Labor Room Team Stability and Skill Retention

Frequent rotation of labour room staff, particularly obstetricians and nurses, severely undermines emergency readiness and continuity of care. Labor rooms require stable, experienced teams familiar with protocols and each other's workflows. Policies should therefore mandate minimum tenure for labor room postings and protect trained teams from routine administrative tasks.

6.8.10. Permanent Obstetric Leadership in Critical Care

Clinical decision-making in maternal ICU cases is ultimately the responsibility of obstetricians. Facilities that rely on temporary or rotating obstetrician experience delays, fragmented care and increased risk. Permanent obstetric leadership should therefore be ensured at all referral hospitals managing critical obstetric cases.

6.8.11. Supply Chain & Infrastructure Resilience

Addressing the "limited access to emergency kits, blood, and blood products. Decentralized Emergency Resource Hubs are necessary.

- Establish "Mini-Blood Storage Units" at every Taluka-level hospital to ensure blood products are available within 30 minutes of a haemorrhage event.
- Automate the Inventory Management System for Essential Obstetric Drugs to trigger auto-restock alerts, preventing "stock-out" situations in rural clinics.

6.8.12. Access to Medicines, Equipment & Supplies

Challenges:

- Frequent stock-outs of key drugs in management of high-risk pregnancies e.g., PIH/PPH drugs (labetalol, magnesium sulfate, misoprostol, oxytocin).
- Gaps in ultrasound and basic delivery equipment at some facilities.
- Antibiotic medicine shortages.

Recommendations:

- Ensure continuous supply chain for life-saving maternal drugs; track separately at district warehouses.
- Upgrade PHCs with basic obstetric equipment (USG, resuscitation kits).
- Strengthen district drug warehouses with maternal health dashboards.

6.8.13 Leadership & Governance

Challenges:

- The health departments work in silos at the three levels-primary, secondary and tertiary levels; this leads to weak convergence.
- Lack of nodal oversight, which is there is no single accountable body for maternal health.
- Complex reporting lines; duplication and poor follow-up.
- Private sector deliveries largely outside systematic review.

Recommendations:

- Appoint Nodal Maternal Health Coordinators at state and district levels.
- Convene inter-departmental task force.
- Institutionalize joint public-private reviews at district level.
- Establish clear governance protocols for referrals (Code Blue Corridor).

6.9. Finance

6.9.1. Health Financing & Welfare

Challenges:

- Families often face catastrophic expenses during obstetric emergencies.
- Referral delays are worsened by lack of assured funds for transport, blood, and emergency care.
- No dedicated financial allocation for maternal health priorities like midwifery, referral systems, and emergency drugs.

Recommendations

- Create a ring-fenced maternal health budget within NHM/state health plans to ensure uninterrupted funding for life-saving interventions.
- Introduce emergency maternal health funds at district level to cover transport, blood availability, and critical care during referrals.
- Allocate dedicated financing for midwifery-led care units, Code Blue referral corridors, and maternal drug supply chains.

6.9.2. Introduce unconditional maternal cash transfers at registration

Upon ANC registration, transfer a modest unconditional sum to below poverty line pregnant women (income-linked) to offset food, fuel (for eg for boiling water), and health-related expenses. Couple this with enhanced counselling at PHCs to encourage women to prioritize self-care.

Link financial incentives to timely referral and management of high-risk pregnancies, not just institutional deliveries.[4]

Fiscal Impact

While these recommendations require an upfront investment in digital infrastructure and specialized manpower, the long-term ROI is measured in thousands of lives saved and a significant reduction in the socio-economic burden of maternal morbidity.

6.10. Other Recommendations

6.10.1. Cross-State and Migrant Case Coordination

Border districts and facilities receiving large numbers of out-of-state or migrant women require formal coordination mechanisms so that high-risk pregnancies are not lost to follow-up and referrals are not delayed due to administrative barriers.[5]

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[4] Recommended by Institute of Public Health (IPH), Bengaluru.

1. **Systemic Reform Note on Maternal Health in Karnataka** – prepared by IPH as a policy and systems note to highlight persistent inequities, governance gaps, and the need to frame maternal health as a rights-based issue rather than a narrow programmatic concern.
2. **Rapid Assessment of Maternal Health Services in Telangana (Feb–Jul 2022)** to **reduce preventable maternal mortality** – conducted by IPH Bengaluru in collaboration with ARMMAN, as a six-month field assessment to identify service delivery bottlenecks in rural and tribal areas, with a focus on causes of maternal deaths, medicine availability, referral pathways, and postnatal care.

6.10.2.Broaden the biomedical scope beyond IFA

Mandate routine screening not only for Hb but also for Vitamin B12 and zinc in high-burden districts. Ensure referral pathways for hemoglobinopathies such as thalassemia and sickle cell.[6]

6.10.3. Dietary diversification with culturally relevant counselling

Encourage weekly red meat or non-vegetarian food consumption in households where it is culturally acceptable, combined with sour agents (tomato, tamarind) to improve absorption. This is because iron and micronutrients are absorbed best [bio availability] from ham sources [non vegetarian sources] than vegetarian sources. Promote low-cost iron- and B12-rich alternatives (eggs, lentils, green leafy vegetables) in vegetarian households. Involve family members [especially husbands and in-laws] because women seldom have the power to take decisions around their own health regardless of their religion. (Chattopadhyay and Chowdhury, 2024)

6.10.4. Strengthen deworming and safe water initiatives

Provide free, regular family-wide deworming tablets. Counsel pregnant women in water-insecure households to consume boiled water. Integrate deworming with WASH interventions to break reinfection cycles.

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[5] Recommendations have been contributed by doctors and health workers working in different parts of Karnataka. This is based on their experience from Ground Zero.

[6] Recommendation is by Dr Sreeparna Chattopadhyay, Associate Professor (Medical anthropology), Manipal University, Bengaluru

6.10.5. Ensure uninterrupted supply of therapeutic iron and blood

Maintain state buffer stocks of IFA and IV iron. Establish blood storage units in all taluk hospitals, linked to voluntary donor networks, to handle severe anemia cases urgently. (Chattopadhyay and Jacob, 2022)

6.10.6. District-level hotspot strategy

Deploy intensified packages (POC testing, mobile counselling, dietary supplementation, cash transfers) in northern Karnataka districts with highest anemia prevalence, while maintaining state-wide baseline interventions. (Rao et al, 2024).

6.11 Expanding the existing care by implementation of new parameters[7]:

- ANC cases and referrals to be supervised by senior faculty/senior obstetrician.
- Unusual deviation in the vital parameter to be flagged and discussed with the state expert team or medical college faculty.
- Every Antenatal mother has to be counselled and tracked for at least 1 monthly ANC visit from 2nd month to 7th month, twice in the 8th month period and weekly visits in 9th month.
- Birth planning is to be done to all the pregnant women with respect to the time, place and mode of delivery.
- Complication readiness of the facility.
- The Taluk level blood storage units must be equipped.
- Orientation of OBGYNs for Massive blood transfusion protocols.
- Orientation of all the private practitioners regarding the causes of maternal death and standard treatment.
- Compulsory recheck of the blood pressure 2 to 4 hours after the initial reading of more than 140/90 for further evaluation and diagnosis.

6.12 Implementation of New Tools

- Implementation of Gestosis scoring for screening of HDP. Provision of tablet Aspirin 75mg as prophylaxis against the development of hypertension may be considered.
- Heparin Prophylaxis to be considered for risk cases such as obesity.
- Injection Ferric Carboxy Maltose (FCM) is approved for usage during the Antenatal period also for the prevention and control of moderate and severe anemia during pregnancy and lactation.

Recommended by Dr. Sheela Mane, Chair-Elect, Indian College of Obstetrics and Gynaecology

- Screening of all ANCs for GDM (Gestational Diabetes Mellitus) at first point of contact and between 24 to 28 weeks of pregnancy with oral glucose challenge test.
- K-ARC Partography
- Introduction of Carbetocin injection for the prevention of post-partum hemorrhage as a prophylactic drug.
- Raising the standards of quality of care by the assessments of all the district hospitals, taluka hospitals and good performing CHCs, every 3 months so as to sustain the high quality of care. The facilities must score 5% more every year.
- ANC wheel to serve as reminder/ to-do checklist during each ANC visit.
- Mandatory post-mortem examination to find out the cause of maternal death in scenarios where there is no clarity on the cause of death based on clinical and biochemical investigations.

7. Proposal for Pilot

By Dr Latha Venkataram, Rangadore Hospital and team

Maternal health remains a key public health priority for the Government of Karnataka. The state has achieved a significant decline in the Maternal Mortality Ratio (MMR) to 69 per 100,000 live births (SRS 2024–25), representing a 24% reduction through the implementation of various national and state initiatives and the Midwifery initiative. Despite this progress, preventable maternal deaths continue to occur due to delays in recognition, referral, and treatment, particularly in rural and semi-urban areas where facility readiness and real-time monitoring are sub-optimal.

7.1. Situational Overview and Key Challenges

Several persistent gaps have been identified through state audits and expert panels (Dr. Latha Venkataram et al.):

- Delay in recognition and risk prediction, especially in high-risk pregnancies.
- Delay in timely referral and transfer due to lack of communication and real-time tracking.
- Delay in intervention due to inadequate readiness, manpower constraints, and limited access to emergency kits/drugs or blood and blood products.
- Incomplete documentation and fragmented digital tracking across facilities.
- Limited use of point-of-care diagnostics in rural and tribal areas.
- Inconsistent adherence to national guidelines and absence of continuous digital monitoring.

7.2. Current Programs and Achievements

The Government of Karnataka has implemented a robust set of maternal health programs such as Mathru Poorna Yojane for giving hot cooked nutritious meal (including milk and egg) and IFA tablets to pregnant and lactating mothers; distribution of Vatsalya kits; Ksheera Bhagya for giving milk to students in classes upto Class 10 to reduce malnutrition and anemia; Srusti schemes for infants etc. In the Budget 2025-26 Karnataka has announced a Rs 320 crore mission mode project to reduce preventable maternal mortality to zero with various initiatives. Under the National Health Mission (NHM), Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), Pradhan Mantri SurakshitMatritva Abhiyan (PMSMA), LaQshya quality assurance program, Dakshata training for skilled obstetric care, and the SUMAN initiative to ensure zero-denial of maternal health services. Functionalization of Mother and Child Hospitals(MCHs), establishment of Obstetric HDUs and ICUs, and the ongoing Midwifery initiative have strengthened facility-based care. Maternal Death Surveillance and Response (MDSR) mechanisms are now operational across all districts.

7.3. Vision and Goal

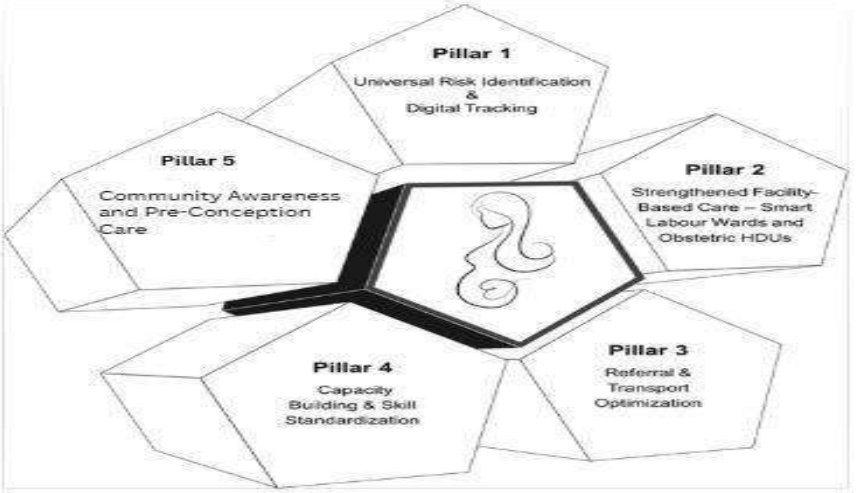
Vision: To achieve a preventable maternal mortality ratio to ZERO through integrated, equitable, and technology-driven maternal care systems.

Goal: To establish a unified, accountable maternal health ecosystem that is digitally connected, integrates risk identification, real-time monitoring, emergency readiness, and capacity building across Karnataka.

This strategic roadmap proposes a comprehensive, technology-enabled, and system-strengthening approach to reduce the MMR to zero preventable deaths by 2030. The roadmap emphasizes multi-stakeholder participation through public–private partnerships (PPP), integrates digital tracking of pregnancies, Smart Labor Ward networks, emergency response protocols, capacity building, and community-based preventive strategies. It aims to ensure that every pregnancy is monitored, every complication is detected early, and all women receive timely, quality and respectful maternity care.

7.4. Strategic Pillars

Five pillars have been proposed to bring in a holistic approach for effective management of Maternal Health across Karnataka



Pillar 1: Universal Risk Identification and Digital Tracking

Every pregnant woman in Karnataka will be digitally registered using a mobile-based tracking platform (such as Senti care), linked to the state's RCH portal and NDHM-compliant data systems. The application will provide real-time risk scoring, color-coded alerts, and integration with laboratory and sonography results. Frontline workers (ASHA, ANM) will be equipped with decision-support tools and wearable devices for vital monitoring. High-risk pregnancies will be GPS-tagged to enable rapid response in emergencies.

This initiative aligns with recommendations from the state technical committee to ensure screening for anemia, hypertension, GDM, and infections at every ANC visit, use of Gestosis scoring for hypertensive disorders, and early intervention protocols including Aspirin prophylaxis and Ferric Carboxymaltose(FCM) administration. Integration with AI dashboards will enable real-time district-level oversight.

Pillar 2: Strengthened Facility-Based Care – Smart Labour Wards and Obstetric HDUs

Under this pillar, all district and taluk hospitals will be equipped with **Smart Labor Wards** connected through cloud-based systems such as Cloud physician RADAR. The platform will allow 24x7 virtual obstetric supervision providing expert care, continuous fetal and maternal monitoring, facilitating and assisting in transfers, monitoring in the ambulances, aortogram, MEOWS and qSOFA charts. Online guidance by experts in managing with automated escalation for conditions like PPH, eclampsia, or sepsis can be provided. Facility readiness will be strengthened and checked with availability of standardized Bundles (PPH Box, Eclampsia Box, Sepsis Bundle) and fully equipped obstetric emergency trolleys.

Dedicated Obstetric HDUs and ICUs will be established with trained obstetricians, anesthetists, and intensivists. Protocols for blood and product management will be standardized across all levels, with mapping of blood banks and introduction of drone-based emergency delivery systems for emergency delivery of blood and products and fibrinogen if required. These measures will operationalize the LaQshya and Mission Zero Preventable Maternal Death frameworks.

Pillar 3: Referral and Transport Optimization

A centralized 24x7 Maternal Health Helpline can be established to coordinate all inter-facility referrals. Each referral will be tracked through a digital platform capturing stabilization status, transport details, and receiving facility confirmation. Integration with EMRI ambulances and private partners will ensure timely and monitored transfer. Drone-enabled delivery of blood components will be piloted in remote regions. Standardized referral proformas and feedback loops will strengthen accountability between sending and receiving facilities.

Pillar 4: Capacity Building and Skill Standardization

Comprehensive training programs will be institutionalized under RGUHS and NHM Karnataka, including Dakshata, LaQshya, and CEmONC modules. Skill-based simulation labs will be expanded to all district hospitals. Mandatory re-certification every two years will be introduced. Midwifery-led units will be strengthened to promote respectful maternity care, and Rapid Action Teams (RATs) will be formed for district-level emergency response. Recognition and incentive programs will motivate high-performing teams.

Pillar 5: Community Awareness and Pre-Conception

Public awareness campaigns will be intensified using digital platforms, community media, and collaboration with Panchayats and SHGs. Focus areas include early ANC registration, nutrition,

anemia prevention, and birth preparedness. Preconception clinics at HCs will offer screening for modifiable risk factors. Nutritional Care kits and incentive schemes proposed under the KMERC and KKRDB districts will be scaled up.

1. Implementation Framework

Implementation will follow a phased approach to ensure scalability, impact measurement, and institutional capacity building. Each phase will include pilot validation, mid-term evaluation, and scale-up through NHM funding and PPP models.

2. Public–Private Partnership Framework

The roadmap emphasizes a collaborative PPP model involving tertiary hospitals (e.g. Rangadore, St. John's Hospital), technology partners (e.g Samrang, Cloudphysician, SaveMom), academia (e.g. IIITB, RGUHS, R V University), and CSR and other NGO contributors (listed earlier). Such partnerships will ensure innovation, real-time monitoring, and sustainable funding for deployment.

3. Monitoring and Evaluation

Key indicators will include annual reduction in MMR, percentage of high-risk pregnancies identified, number of Smart Labour Wards functional, and reduction in referral delays. Dashboards will be reviewed monthly by the State MDSR Committee. Annual audits will assess facility readiness and training outcomes, targeting at least 5% improvement in quality scores.

4. Financial Estimate (2025–2030)

The indicative financial requirement per district is estimated at Rs. 3.5 crore, covering technology deployment, infrastructure enhancement, training, logistics, and awareness activities.

Financial Estimate

(Illustrative for one district pilot; scalable thereafter)

Estimated Cost (2025–2030)	Component Cost (Rs. Lakh)
Digital maternal platform deployment	50
Smart labor ward setup (equipment + cloud link)	120
HDU/ICU strengthening	80
Training and capacity building	40
Referral/transport strengthening	30
Awareness and community programs	20
Total (per district)	**3.4 crore**

8.Overview of the Conference

The Centre for Global Health and Development at School of Economics and Public Policy at RV University, in collaboration with the Indian Institute of Public Administration – Karnataka Regional Branch, convened a state-level conference on “Reducing Maternal Mortality in Karnataka” on 26 September 2025 in Bengaluru.

The conference brought together government leaders, clinicians, public health experts, civil society organisations and academic institutions to review maternal mortality trends in Karnataka and to identify actionable system-level solutions. The conference was inaugurated by the Honorable Minister for Health and Family Welfare Shri Dinesh Gundu Rao and the Honorable Minister for Medical Education and Skill Development, Government of Karnataka Dr. Sharana Prakash R. Patil. The objective of the conference was to generate evidence-based, implementable recommendations to strengthen maternal health services across all levels of care in the state. This document is a result of this initiative.

Thematic Framework

The conference on Reducing Maternal Mortality in Karnataka was designed as a structured policy consultation to translate clinical, public health and system-level evidence into actionable recommendations for the Government of Karnataka. Deliberations were organised into four inter-linked thematic panels covering the full continuum of maternal care from governance and coordination to frontline clinical safety.

Theme 1 addressed clinical governance within maternal health facilities, including accountability, standardised protocols, staff competencies, referral readiness and continuous quality improvement.

Theme 2 focused on contributions of NGOs towards system-level coordination across government, private providers and communities, with emphasis on data use, leadership, referral pathways and policy alignment.

Theme 3 brought together health personnel from districts and sub-district levels in an online interaction. They highlighted continuity of care across pregnancy, childbirth and the postnatal period, highlighting stable clinical teams, early risk detection, timely referral and post-discharge follow-up.

Theme 4 concentrated on presenting the summary of recommendations to the Principal Secretary Health on the following issues: frontline safety, quality and respectful maternity care, including emergency preparedness, monitoring systems, blood and transport support, technology use and independent audits.

Together, these themes provide a coherent framework for strengthening maternal health services in Karnataka and improving survival and safety for mothers and newborns.

9. Annexures



ಈ ಸಂಜೆ

ತಾಯಂದಿರ ಸಾವು ಪ್ರಕರಣ ಇಳಿಕೆಗೆ ಸರ್ಕಾರ ಸಂಕಲ್ಪ

ಬೆಂಗಳೂರು, ಸೆ.17- ತಾಯಂದಿರ ಏರಿಳಿತದ ಮರಣಗಳಲ್ಲಿ ಕರ್ನಾಟಕದಲ್ಲಿ ತಾಯಂದಿರ ಮರಣ ಪ್ರಮಾಣವನ್ನು ಈಗಿರುವ ಶೇ.69 ರಿಂದ ಶೇ.40ಕ್ಕೆ ಇಳಿಸುವುದು ನಮ್ಮ ಗುರಿಯಾಗಿದ್ದು ಮುಂದಿನ ಮೂರು ವರ್ಷಗಳಲ್ಲಿ ಈ ಪ್ರಮಾಣವನ್ನು ಶೇ.20ಕ್ಕೆ ಇಳಿಸುವ ಸಂಕಲ್ಪವನ್ನು ಕೈಗೊಳ್ಳಲಾಗಿದೆ ಎಂದು ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಸಚಿವ ದಿನೇಶ್ ಗುಂಡೂರಾವ್ ಹೇಳಿದರು.

ಬೆಂಗಳೂರಿನ ಜಯದೇವ ವಿಶ್ವವಿದ್ಯಾ ನಿಲಯದ ಸಭಾಂಗಣದಲ್ಲಿ ಭಾರತೀಯ ಸಾರ್ವಜನಿಕ ಆರೋಗ್ಯ ಸಂಸ್ಥೆ, ಆರ್‌ಸಿ ವಿಶ್ವವಿದ್ಯಾ ನಿಲಯದ ಜಾಗತಿಕ ಆರೋಗ್ಯ ಮತ್ತು ಅಭಿ ವೃದ್ಧಿ ಕೇಂದ್ರದ ಸಹಯೋಗದಲ್ಲಿ ಆಯೋಜಿಸಿದ್ದ ತಾಯಿಗೆಯಲ್ಲಿ ತಾಯಂದಿರ ಮರಣ ಪ್ರಮಾಣವನ್ನು ಕನಿಷ್ಠ ಮಾಡುವುದು ಎಂಬ ವಿಷಯದ ಕುರಿತು ಒಂದು ದಿನದ ಸಮ್ಮೇಳನದಲ್ಲಿ ಅವರು ಮಾತನಾಡಿದರು.

ಮುಂಬರುವ ದಿನಗಳಲ್ಲಿ ತಾಯಂದಿರ ಮರಣ ಪ್ರಮಾಣವನ್ನು ಕುಗ್ಗಿಸಲು ಇಲಾಖೆ ಸಂಪೂರ್ಣ ಕಾರ್ಯಪ್ರವೃತ್ತ ಹೊಂದಿದೆ. ಸಚಿವ ಸಂಪುಟ ಸಭೆಯಲ್ಲಿ ಎಲ್ಲಾ ತಾಲ್ಲೂಕು ಆಸ್ಪತ್ರೆಗಳು, ಎಲ್ಲಾ ಪ್ರಾಥಮಿಕ ಸಮುದಾಯ ಆರೋಗ್ಯ ಕೇಂದ್ರಗಳಲ್ಲಿ ಕಟ್ಟು ಬ್ಯಾಗ್ ಸ್ಥಾಪಿಸಲು ತೀರ್ಮಾನಿಸಲಾಗಿದೆ. ಇದರ ಮುಖ್ಯ ಧ್ಯೇಯ ಹಾಗೂ ಒಟ್ಟು

ಬೇಡಿಕೆಯಾಗಿದ್ದ ಇದ ಬೇಡಿಕೆಯು ಇಲ್ಲಿ ಸರ್ಕಾರ ಈಡೇರಿಸಿಕೊಟ್ಟಿದೆ ಎಂದರು.

ದಿನದ 24 ಗಂಟೆ ಆಸ್ಪತ್ರೆಗಳು ಕಾರ್ಯನಿರ್ವಹಿಸಬೇಕು. ಇದಕ್ಕಾಗಿ ಮಂತ್ರಿಮಂಡಲ ಇದ್ದಲ್ಲಿ ಆರೋಗ್ಯ ಮಂತ್ರಿ ಹಾಗೂ ಇತರರು ಒತ್ತಾಸೆಗಾಗಿ ಆರೋಗ್ಯ ಕರ ಸಮಾಲೋಚನೆಗಳನ್ನು ರೂಪಿಸುತ್ತಾರೆ ಎಂದು ಸಚಿವರು ತಿಳಿಸಿದರು. ನೈರ್ಮಲ್ಯದ ಕೊರತೆ ಮತ್ತು ಕೆಲಸಕ್ಕೆ ಅಭಿವೃದ್ಧಿಯ ಸಾಚಿವ ಡಾ. ಶರಣ ಪ್ರಕಾಶ್ ಆರ್. ಪಾಟೀಲ್ ಅವರ ಸಚಿವಾಲಯದಲ್ಲಿ ಭಾಗಿಯಾಗಿ ಮಾಹಿತಿ ನೀಡಿದರು.

ಸಂಬಂಧ ಫಾರ್ಮ್ ಗ್ರೂಪ್ ಬೆಲ್ಲ್ ಅಂಡ್ ಡಚಿಲ್ ಮಿಂಟ್, ಇದರ ವಿಷಯ ತಜ್ಞರು ಒಂದಿನ ಬರೀಕ್ಷಣೆಯ ಡಾ. ರಂಜನ್, ಸಿ. ರಾಘವೇಂದ್ರ, ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ವೈದ್ಯಕೀಯ ತಜ್ಞರ ನಿರ್ದೇಶಕ ಡಾ. ಬಿ. ಎಲ್. ಮಂಜುನಾಥ ರಾಘವೇಂದ್ರ ಈ ಸಂದರ್ಭದಲ್ಲಿ ತಮ್ಮ ಅಭಿಪ್ರಾಯ ಮಂಡಿಸಿದರು.



DECCAN HERALD
Wednesday
October 15, 2025

METRO

Govt okays new plan for reducing maternal mortality rate

To use exclusive software for monitoring in public hospitals

BENGALURU, DHNS

The state government on Tuesday approved 'Mission Zero Preventable Maternal Death', a comprehensive action plan for the reduction of Maternal Mortality Rate (MMR). Karnataka's MMR is 57 per one lakh.

In 2024-25, as many as 8,30,850 births and 530 maternal deaths were reported in the state, after which an internal investigation was conducted. Seventy percent of these deaths were preventable with better drugs and equipment, according to government data.

The investigation revealed that haemorrhage, hypertensive disorders in pregnancy, sepsis/infections, thrombosis and embolism and medical disorders complicating pregnancy are the primary reasons for the death of new mothers.

To provide better facilities, the government will be rationalising the functioning of 148 taluk hospitals and 274 CHCs, primarily focusing on Ballari, Vijayanagar, Chitradurga and Tumakuru as these districts reported 14% of the total deaths and come under the Karnataka Mining and Environment Corporation (KMERC).

Pregnant and lactating women belonging to Priority Household (PHH) for the first two births in the 10 taluks of KMERC districts will be provided with monetary and nutrition assistance. The monetary benefits will be given during pregnancy and lactation through Direct Benefit Transfer (DBT).

First-time mothers will be provided Rs14,500 while they will receive receive Rs 15,500 (Rs 6,000 from PMMVY) for the second time for the female child. Mothers with a male child will receive Rs 15,500 completely from KMERC.

The nutrition kits will be procured from Karnataka State Medical Supplies Corporation Limited (KSMCL) and distributed through the Women and Child Department.

Initially, as many as 25,851 beneficiaries will be covered at an cost of Rs 2,484 lakh.

Carbetocin and Ferric Carboxymaltose injection will be procured as they help in haemorrhage and anaemia, respectively. They will be supplied to all government health centres and hospitals.

Uterine Balloon Tamponade and SR Cannula, NAS Garments, Semi-automated Coagulation Analyzer, Ultrasonography machines and NST machines will be procured for several taluk hospitals and primary healthcare centers. Magnesium sulphate will be immediately administered for severe preeclampsia, when blood pressure is more than 160/110 or any other impending signs of eclampsia are present.

A separate taluk-level committee under the deputy commissioner will be in charge of addressing the gaps based on the technical inputs.

The changes will also be made in the existing death audit mechanism by the state-level technical audit committee taking charge of it.

The government will use an exclusive software to monitor women undergoing childbirth in public hospitals by implementing the Karnataka Advanced Realtime and Comprehensive Partograph (KARC Partograph) digital tool.

The state committee has also proposed the inclusion of Arogya Bharat- Arogya Karnataka schemes in ICU of private hospitals for critical cases despite economic status as that would ease the crucial time from travelling.

1. **Name of the Event**: *Reducing Maternal Mortality in Karnataka*
2. **Date**: 26th September 2025
3. **Location:** RSST Auditorium (Jayanthi Suryanarayana Chetty Auditorium, RV Teachers College, 2nd Block, Jayanagar, Bangalore-11
4. **Objective of the Event**: The objective of the conference was to generate actionable recommendations to reduce maternal deaths in Karnataka.
5. **Names of the Guest(s),their Designations and Institutional Affiliation**
   a. Shri Dinesh Gundu Rao, Minister of Health and Family Welfare, Govt of Karnataka
   b. Dr. Rajkumar, Deputy Director, Maternal Health, Dept. of Health and Family Welfare, Govt of Karnataka
   c. Dr. Latha Venkataram, Lead Consultant, OBG Department, Rangadore Hospital
   d. Dr. Srinivas K. Jois, HOD of OBG, Vani Vilas Hospital
   e. Dr. Sharana Prakash R. Patil, Minister of Medical Education and Skill Development, Govt of Karnataka
   f. Dr. Janhavi Nilekani, Aastrika Foundation
   g. Dr. Angel Sudha, Institute of Public Health
   h. Dr. Aditi Iyer, Public Health Foundation of India
   i. Dr. Prathana, Karnataka Health Promotion Trust
   j. Dr. Sheela V. Mane, Chair Elect, Indian College of OBG, (FOGSI) k.
   k. Prof. D. Jeevan Kumar, Hon Professor, Mahatma Gandhi Rural Development and Panchayat Raj University
   l. Dr. Sutapa B. Neogi, Director, International Institute of Health Management Research New Delhi
   m. Shri Vijay Bhaskar, Chairperson of the Indian Institute of Public Administration, Karnataka Regional Branch
   n. Shri Harsh Gupta, Principal Secretary, Health and Family Welfare, Govt of Karnataka.
6. **Organizing Team:**
   - Lead Coordinator: Dr. Ranini C R Email: ranjinicr@rvu.edu.in
   - Event Supervisor (Faculty): Dr. Narinder Kumar, Department of Economics and Public PolicyEmail: narinderk@rvu.edu.in
   - Dr. H. Dhanalakshmi, Allied and Healthcare Professions Email: hdhanalakshmi@rvu.edu.in

- Dr. Shwetha Panchal, Allied and Healthcare Professions Email: shwetap@rvu.edu.in
- Student Event Coordination Team
- Total of 32 students had volunteered from the School of Economics and Public Policy, Allied and Healthcare Professions, Liberal Arts and Sciences and Business.

7. Program Schedule and Activities

- The one-day conference commenced at 10:00 a.m. with a Welcome Address, setting the context and objectives of the event. This was followed by the signing of a Memorandum of Understanding (MoU) between RV University and the Indian Institute of Public Administration, Karnataka Regional Branch, marking a significant step towards institutional collaboration in public policy and governance.
- At 10:30 a.m**.**, the conference was formally inaugurated with an Inaugural Address delivered by the Hon'ble Minister of Health and Family Welfare, Shri Dinesh Gundu Rao, Government of Karnataka, highlighting the importance of reducing maternal mortality through policy interventions and health system strengthening. Shri Dinesh Gundu Rao's speech is as follows:

Shri Dinesh Gundu Rao, stated that the Maternal Mortality Rate (MMR) is an important subject for the health department as it provides a clear indication of the state's health system. He mentioned that Karnataka's MMR is better compared to the national average; however, when compared to other southern states, it is lagging behind in this aspect. He emphasized that this issue has caught the attention of the Ministry, and if a woman dies during childbirth when her life could have been saved, it reflects a failure of the system. He further stated that last year, the Ministry reviewed all maternal deaths from April 2024 to December–January to identify the causes. These causes ranged from lack of availability of doctors, absence of regular checkups, inadequate medical advice to mothers, unavailability of drugs, and procedural gaps.

He also added that Karnataka aims to achieve zero preventable maternal deaths. He mentioned that in yesterday's cabinet meeting, it was decided that every taluk hospital and major Community Health Centre should have at least two gynaecologists, two paediatricians, and one radiologist to ensure that hospitals remain functional 24x7. The government also plans to make it mandatory for expectant mothers to undergo one antenatal check-up every month until the 7th monthof pregnancy, twice in the 8th month, and daily communication during the 9th month. High-risk mothers will be separately monitored, and a dedicated protocol for their care will be devised.

He stressed the importance of birth planning, including choosing the right institution. High-risk mothers are expected to be in frequent contact with gynaecologists to prepare for emergencies. These measures are expected to significantly reduce MMR in Karnataka. He further stated that the government's target is to bring down the MMR to 40 within two and a half years and ultimately achieve 20, which is the global standard. He also noted that the government has

allocated ₹350 crores for this mission. He concluded by saying that this conference and its discussions would help the government understand the steps required to reduce MMR.

The post-break session began with a presentation on Karnataka Government's initiatives to reduce Maternal Mortality Ratio (MMR), offering insights into ongoing state-level programs and strategies. This was followed by Panel Session 1, focusing on Preventing Maternal Deaths: Solutions and Strategies, where experts from hospitals, public health institutions, and maternal health organizations discussed clinical, institutional, and community-based approaches.

After the lunch break, the afternoon session featured a Keynote Address by Dr. B.L. Sujatha Rathod Director, Directorate of Medical Education, Government of Karnataka, emphasizing capacity building and skill development in the healthcare sector. Her speech is as follows:

Maternal mortality is not merely a health statistic; it is a profound measure of our healthcare delivery system, a reflection of our social equity, and a test of how we uphold the basic dignity of women. Pregnancy is often celebrated as a beautiful journey. Yet, for far too many women in our state, it transforms into a path filled with uncertainty, complications, and fear—a path where every single step demands rigorous clinical precision, unyielding vigilance, and heartfelt empathy. Managing high-risk pregnancies and lowering the Maternal Mortality Ratio (MMR) tests not only our medical knowledge but our core ethical commitment to maternal and fetal well-being.

The Reality of Maternal Mortality in Karnataka

- **The Five-Year Toll:** In the past five years alone, Karnataka has recorded a tragic **3,364 maternal deaths**.
- **Annual Trends:** The yearly numbers reveal a persistent challenge. We recorded 662 deaths in 2019-20, which spiked to 714 deaths in 2020-21 during the peak of the pandemic. This was followed by 595 deaths in 2021-22, 527 deaths in 2022-23, and 518 deaths in 2023-24.
- **The Baseline:** Today, our state's MMR stands at approximately **64 per 100,000 live births**.

While this marks progress, these figures must never be viewed as mere data points on a chart. They represent mothers lost, families shattered, and the very fabric of our communities weakened.

Critical Insights from Maternal Death Audits

Our recent audit data provides deeper, actionable insights into why we are losing these mothers. Between April and December 2024, 464 maternal deaths were rigorously audited across Karnataka.
The findings are both sobering and a call to action:

Over 70% of these audited maternal deaths were found to be entirely preventable.
Furthermore, **63% of these deaths occurred in women who had undergone cesarean sections**. This starkly highlights an urgent, systemic need to strengthen both our surgical protocols and post-operative maternal care.
Geographically, this burden is not uniform. The regional disparities are clear:

- **Bengaluru Urban:** 71 deaths
- **Ballari:** 38 deaths
- **Dharwad:** 35 deaths
- **Kalaburagi:** 33 deaths

- **Belagavi:** 31 deaths

These localized spikes prove that while certain districts have successfully fortified their maternal health systems, others are still actively struggling with infrastructure gaps, severe shortages of skilled staff, and fragile referral linkages.

Understanding the Causes

To effectively intervene, we must aggressively target both the direct and indirect drivers of mortality:

- Direct Clinical Causes: Severe hemorrhage, pre-eclampsia and eclampsia, puerperal sepsis, delivery-related complications, and unsafe abortions.
- Indirect Systemic Causes: Pre-existing chronic medical conditions and widespread malnutrition that compromises a mother's physiological resilience long before labor begins.

The Strategic Blueprint of the Directorate of Medical Education (DME)

At the Directorate of Medical Education, we stand at the crucial crossroads of healthcare policy, academic training, advanced clinical care, and research. Our contribution to driving down the MMR is anchored in a multi-layered institutional approach:

1. **Advanced Training and Skill Development**

We are directly entrusted with shaping the next generation of doctors, nurses, and allied health professionals. It is our institutional mandate to ensure that every graduate emerges fully confident in handling acute obstetric emergencies—from sudden postpartum hemorrhage to severe eclampsia. To achieve this, our simulation and skill labs are being heavily optimized for hands-on, high-fidelity maternal care training.

2. **Medical Colleges as Hubs of Excellence**

Our government medical colleges cannot operate in isolation. Each must serve as a premier regional maternal health hub, fully equipped with operational High Dependency Units (HDUs), round-the-clock emergency C-section capabilities, robust blood banks, and comprehensive emergency obstetric care. Crucially, these hubs must actively mentor and support surrounding district and taluk hospitals.

3. **Research and Data-Driven Policy**

Our academic institutions must serve as the primary knowledge engines studying the root causes of maternal mortality. If 70% of these deaths are preventable, it is our academic responsibility to dissect the data, identify the precise breakdowns in care, and deliver data-driven solutions to policy-makers.

4. **Community-Oriented Medical Education**

We are breaking down the walls of the ivory tower. Our students and residents are being systematically exposed to rural realities. By working hand-in-hand with Primary Health Centers (PHCs), Community Health Centers (CHCs), and frontline ASHA workers, they learn to navigate the grassroots challenges of maternal care. This ensures that medical education in Karnataka is defined by social accountability, not just degrees.

Accelerating the Road Ahead: Policy & Technology

To accelerate Karnataka's progress toward the Sustainable Development Goal (SDG) target of reducing our MMR below 70 per 100,000 live births by 2030, we are executing bold, structural interventions:

- Establishing dedicated Maternal Health Skill Labs in all government medical colleges.
- Introducing mandatory, standardized obstetric emergency modules across both MBBS and Postgraduate curricula.
- Implementing a digital maternal health tracking framework and AI-based risk alerts to secure our referral systems.
- Expanding strategic public-private partnerships, particularly in our most underserved districts.
- Creating a centralized State Maternal Mortality Observatory—a live, interactive dashboard anchored within our teaching institutions to provide real-time data for swift, corrective policy action.

Leveraging National and State Health Initiatives

Our efforts are reinforced by the robust pillars of the National Health Mission (NHM) and customized state-level programs:

- **Janani Suraksha Yojana (JSY):** Driving institutional delivery for vulnerable, low socio-economic families through strategic cash incentives.
- **Janani Shishu Suraksha Karyakaram (JSSK):** Removing out-of-pocket financial barriers by guaranteeing completely free deliveries, C-sections, drugs, diagnostics, blood, and transport.
- **Pradhan Mantri SurakshitMatritva Abhiyan (PMSMA):** Ensuring assured, free, and high-quality antenatal care on a fixed-day monthly schedule.
- **SurakshitMatritvaAashwasan (SUMAN):** Providing a zero-tolerance mandate against service denial, ensuring dignified, respectful, and high-quality maternity care at no cost.
- **LaQshya:** Systematically upgrading the quality of care within our labor rooms and maternity operation theaters.
- **Optimizing Postnatal Care**: Incentivizing frontline ASHA workers for structured home visits to detect critical early danger signs during the vulnerable postpartum window.
- **Karuna Abhiyana**: Our dedicated state-level initiative utilizing real-time dashboards to rigorously track and monitor high-risk pregnancies.
- **Maternal Death Surveillance and Response (MDSR):** Reactivating localized, district-level audit committees to rigorously break down maternal deaths and deploy immediate local corrective action plans.
- **CeMOC Training**: Successfully training over 350 medical professionals in advanced comprehensive obstetric emergency care across more than 30 districts.
- **Telemedicine Integration:** Tapping into remote risk monitoring via successful tele-consultation hubs in Bidar and adjacent districts, allowing frontline clinicians to instantly triage high-risk cases with expert specialist input.

The Next Horizon

Despite these commendable strides, we acknowledge that significant gaps remain. Moving forward, we must focus our resources on establishing early screening protocols at rural sub-centers, building midwife-led birthing centers for enhanced continuity of care, expanding dedicated high-dependency obstetric units (HDUs) across every single district hospital, and maintaining aggressive community awareness campaigns tailored specifically for adolescent and tribal populations.

Conclusion: An Urgent Call to Action

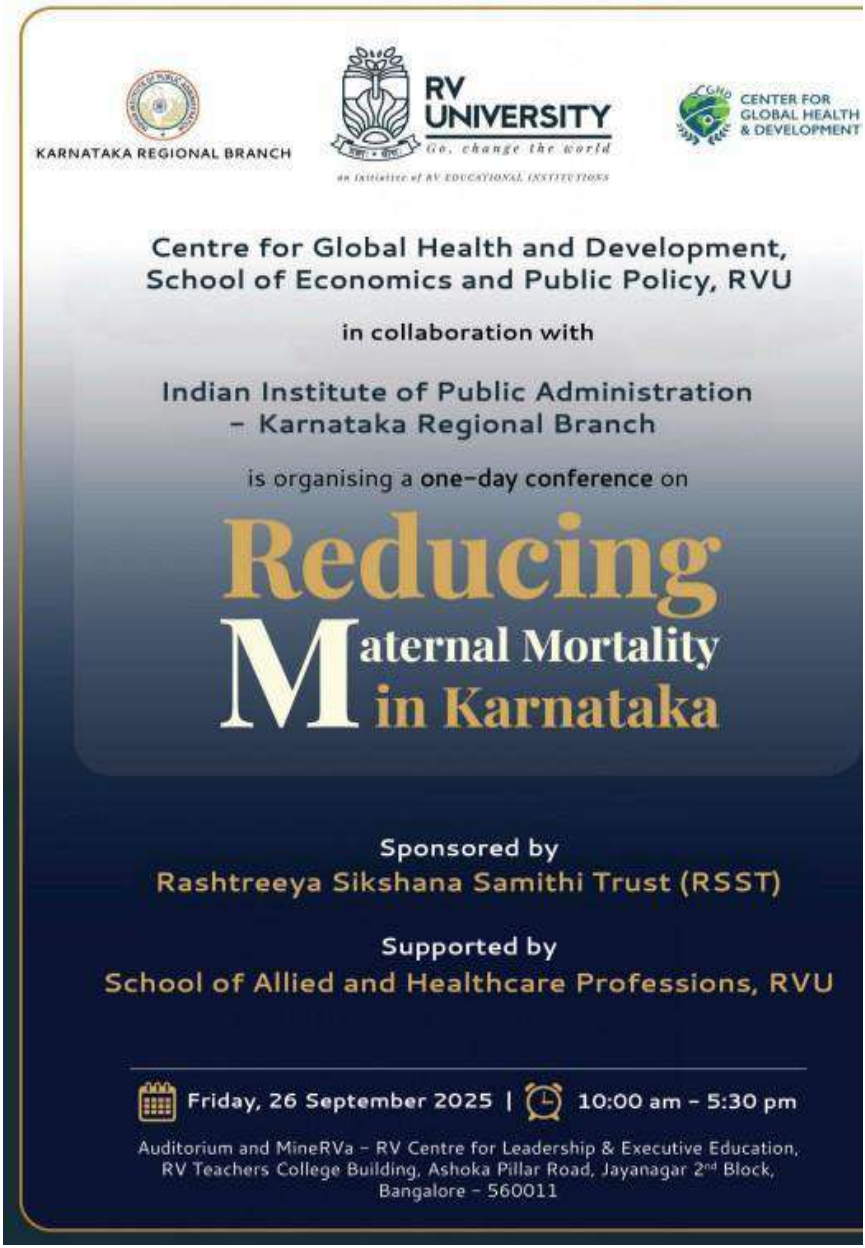
Distinguished colleagues, the statistics before us are a profound call to action. More than 3,000 maternal deaths over five years—the vast majority preventable—demands that we move past discussions and enter a state of decisive, unyielding action.
As the Directorate of Medical Education, we formally pledge that our medical colleges, our students, our residents, and our faculty stand firmly behind this mission. Together, in absolute lockstep with the Department of Health and Family Welfare, we will work to guarantee that:

- No mother dies due to a lack of timely, skilled care.
- No family is forced to lose a loved one to preventable clinical causes.
- Every single childbirth in Karnataka is safe, dignified, and celebrated.

Let us remember: when we save a mother, we save a family; and when we save families, we strengthen the very foundation of our society and our country. This academic gathering serves as a powerful reminder that to eliminate maternal and fetal mortality, we must relentlessly upgrade our skills and expand our perspectives. Every high-risk pregnancy is a battle we must fight—and win—with knowledge, compassion, and seamless teamwork.

- Subsequently, the conference hosted parallel sessions. One panel focused on Translating Evidence into Policy, where representatives from NGOs and research institutions shared evidence-based perspectives on maternal mortality reduction. The second parallel session, conducted in hybrid mode, examined *Strengthening Health System Capacities for Safe Motherhood*, with participation from health experts and field-level health personnel.
    - The concluding session comprised Panel 4, which centred on *Policy* Recommendations for Safe Motherhood in Karnataka. Chairs and moderators from previous sessions presented consolidated recommendations, outlining a roadmap for government action. The conference concluded at 5:30 p.m. with a Vote of Thanks, formally bringing the proceedings to a close.
- **Event Outcome:** There has been a Major Policy Impact by the government! The impact of the 'Reducing Maternal Mortality Rate in Karnataka' conference that was organized recently has culminated in a landmark Government Order! The Government of Karnataka has officially granted administrative approval to the "Mission Zero Preventable Maternal Deaths"—a comprehensive, multi-pronged action plan aimed at reducing the state's Maternal Mortality Ratio (MMR) from its

current level of 57. This decisive action follows the evidence-based discussions held at our recent conference, which was organised by the Centre for Global Health and Development, School of Economics and Public Policy at RV University, and the Indian Institute of Public Administration (IIPA), Karnataka Regional Branch.. The government order outlines major systemic reforms with an initial estimated budget of ₹139.53 crore, which directly align with the conference's goal of generating actionable recommendations.


KARNATAKA REGIONAL BRANCH
RV UNIVERSITY
Go, change the world
an initiative of RV EDUCATIONAL INSTITUTIONS
CENTER FOR GLOBAL HEALTH & DEVELOPMENT
Centre for Global Health and Development, School of Economics and Public Policy, RVU
in collaboration with
Indian Institute of Public Administration – Karnataka Regional Branch
is organising a one-day conference on
Reducing Maternal Mortality in Karnataka
Sponsored by
Rashtreeya Sikshana Samithi Trust (RSST)
Supported by
School of Allied and Healthcare Professions, RVU
Friday, 26 September 2025 | 10:00 am – 5:30 pm
Auditorium and MineRVa – RV Centre for Leadership & Executive Education, RV Teachers College Building, Ashoka Pillar Road, Jayanagar 2nd Block, Bangalore – 560011

Conference Agenda

Time	Description
10:00 am	Welcome Address
10:15 am	Signing of MoU between RV University and Indian Institute of Public Administration, Karnataka Regional Branch
10:30 am	Inauguration & Inaugural Speech by **Shri Dinesh Gundu Rao**, *Minister of Health and Family Welfare, Government of Karnataka*
11:45 am	**Coffee Break**
12:00 pm – 12:15 pm	**Presentation: Karnataka Government's Initiatives to Reduce MMR** **Speaker: Dr. Rajkumar**, *Deputy Director, Maternal Health, Dept. of Health and Family Welfare Government of Karnataka* **Chair: Dr. Arindam Mitra**, *Dean, School of Allied and Healthcare Professions, RV University*
12:15 pm – 1:30 pm	**Panel 1: Preventing Maternal Deaths: Solutions and Strategies** **Moderator: Dr. Latha Venkataram**, *Lead Consultant, OBG Department, Rangadore Hospital* **Co-Moderator: Dr. Srinivas K. Jois**, *HoD of OBG, Vani Vilas Hospital, BMCRI, Bangalore* **Panellists:** **Dr. Shubha Rama Rao**, *Retd HoD, St Martha's Hospital* **Dr. Susheela Rani**, *Manjushree Hospital* **Dr. Shobha Sudharshan**, *Maternal Health and Family Welfare Officer, GBA, Bangalore* **Dr. Madhva Prasad**, *St. John's Hospital* **Dr. Srimathy**, *Rangadore Hospital*
1:30 pm – 2:30 pm	**Lunch Break**
2:30 pm – 3:30 pm	Keynote Address by **Dr. Sharana Prakash R. Patil**, *Minister of Medical Education and Skill Development, Government of Karnataka*
3:30 pm – 3:45 pm	**Coffee Break**
3:45 pm – 4:45 pm	**Parallel Sessions:** **Panel 2: Translating evidence into Policy: NGO and research perspectives on Maternal Mortality Reduction** **Moderator: Dr. Ranjini C. Raghavendra**, *Executive Director, Centre for Global Health and Development, RV University* **Panellists:** **Dr. Janhavi Nilekani**, *Aastrika Foundation* **Dr. Angel Sudha**, *Institute of Public Health (IPH)* **Dr. Aditi Iyer**, *Public Health Foundation of India (PHFI)* **Dr. Prathana**, *Karnataka Health Promotion Trust (KHPT)* **Panel 3 (Hybrid):** (Venue: Minerva Auditorium): **Strengthening Health System Capacities for Safe Motherhood across care levels** **Chair: Dr. Sheela V. Mane**, *Chair Elect, Indian College of OBG, Federation of Obstetric and Gynaecological Societies of India (FOGSI)* **Moderator: Prof. D. Jeevan Kumar**, *Hon Professor, Mahatma Gandhi Rural Development and Panchayat Raj University* **Panellists:** **Dr. Sutapa B. Neogi**, *Director, International Institute of Health Management Research New Delhi* **Health personnel from select taluks and districts**
4:45 pm – 5:30 pm	**Panel 4: Policy Recommendations for Safe Motherhood in Karnataka: A Roadmap for Government Action** (Venue: MineRVa Auditorium) **Chair: Shri Vijay Bhaskar**, *Chairperson of the Indian Institute of Public Administration, Karnataka Regional Branch* **Co-Chair: Shri Harsh Gupta**, *Principal Secretary, Health and Family Welfare, Government of Karnataka* **Presentations by:** Chairs and Moderators
5:30 pm	Vote of Thanks





Shri Dinesh Gundu Rao, Minister for Health and Family Welfare, Government of Karnataka, addressing the conference



Left to Right: Dr Ranjini C R, Executive Director, Centre for Global Health and Development, Shri T M Vijaya Bhaskar, (IAS, Retd), Chairperson, Indian Institute of Public Administration, Karnataka Regional Branch, Shri Dinesh Gundu Rao, Shri Ramanathan, Former Secretary to the Government of India, Dr M P Shyam, President, RSST, Prof (Dr) Dwarika Prasad Uniyal, Pro Vice--Chancellor, R V University.



Conference participants with Harsh Gupta (IAS), Principal Secretary, Health and Family Welfare, Government of Karnataka. (He is third from left)

10. Recommendations to the Kerala Government

Excerpt from Paily, V. P., Ambujam, K., Thomas, B., Nair, V. R., Menon, P., Jayaprakash, M., Deepthy, M., &Sidhik, A. (Eds.). (2021). *Third report of confidential review of maternal deaths, Kerala 2010–2020: Why mothers die, Kerala 2010–2020: Observations, recommendations*. Kerala Fede(

To the Government

1. The government has to take the lead in conducting and supporting the activities related to maternity care. It has declared its determination to strive for an MMR of 30 by year 2020 and 20 by the year 2030. But there are different segments of the government who have to work in cohesion to achieve this. Department of Health, government of Kerala has to take the lead in bringing together the different departments under the State and Central governments. This includes the National Health Mission, Health department of government of India, the department of Medical education (DME) and the department coming under the Director of health services(DHS). The target should be made clear and periodic interaction between the different departments should be arranged.

2. **Ambulance service:** Those outside Kerala cannot believe that we do not have a centrally controlled, well organised ambulance service. There is need for co-ordinating the ambulance service which is now fragmented under different administrators. It should change. The ambulance service should become like the fire and rescue services. It should be made the right of the citizens to get transport arranged especially for maternity services.

(Federation of Obstetrics & Gynecology)

3. **Insurance services:** Most of the insurance companies do not cover maternity care. This should change. The government has to take the lead.

4. **Data collection and retrieval** of anonymised case records has always been a problem for CRMD. Even though different forms have been prepared, many people do not follow it. The reporting does not happen in some cases. We would urge the government to make sure that the data are sent to KFOG electronically and without delay. The forms need some modifications as well.

5. **Blood bank**: A lot of improvement has occurred in the availability of blood and blood products. But a lot more need to be done. The government has to take the lead and ensure that availability of blood and components is ensured even for the peripheral hospitals – private and public.

6. **Make essential drugs and equipments available**: Availability and pricing of drugs and equipments needed for maternity care should be monitored by the government. Whenever companies change policies based only on their profit, and not taking into account the need of the patient community, the government has to intervene. For example alpha methyl dopa is not available as the concerned company has stopped production. The practitioners were left with more expensive alternatives; government should exert pressure on the concerned companies against such policies.

7. **Manpower:** The delivery centres under the government, especially the ones in the periphery suffer from manpower shortage. A formula of having three obstetricians is essential for such centres. Only then a 24 hour service can be provided allowing for "leaves" of the employees. The obstetricians in such centres have to liaise closely with the field staff like ASHA workers and Junior Public Health Nurse. Health education has to be a major responsibility of the peripheral obstetrician and time has to be found for that. To provide 24 hour delivery service, at least three obstetricians are essential in such centres.

8. **Training:** Training and updating is essential to provide appropriate obstetric care especially in the periphery. This applies to small private hospitals as well. As 70% of deliveries take place in the private sector, training of the private obstetricians has to be taken as the responsibility of the government. As in the past, the practical solution will be to use the services of the organisations like KFOG and local O&G societies. Government can support these organisations by providing training materials like mannequins and newer instruments like TVUAC and suction cannula.

There is an urgent need to focus on training of all staff in the delivery centres on the ways to arrest PPH at the first recognition by using TVUAC or suction cannula. A dedicated series of workshops is the only possible way to train all heath care workers. Government has to take the lead as private and government healthcare workers are to be trained. It may be possible to get funds from NHM or outside agencies like UNICEF. But the initiative has to come from the government.

Local Self Government

Now that the administrative control of peripheral hospitals has been transferred to the local self-government agencies, they have to ensure that needs of the maternity services are looked after well. Specifically, to arrange for transportation, and to make blood and blood products available, the support of the local self-government is essential.

Hospital Management

This has more relevance to the smaller private hospitals. A sort of healthy competitive spirit between such hospitals will be helpful. If the government comes forward with accreditation of hospitals, the private hospital management should ensure that they get accredited. It will help in attracting more patients as well.

Professional organisations

KFOG has taken keen interest so far and should continue to support all activities that will help to reduce maternal mortality. All the activities initiated by KFOG like EMOCALS, Quality Standards, ORRT and MDNMSR have helped in achieving the goal and have to be continued. All the member societies of KFOG have to be encouraged to get involved in this mission.

Training sessions have been the forte of KFOG. For this, support of other specialties like anesthesiology, critical care & neonatology is essential. Already there is a very healthy trend in this. It has to be nurtured more.

KFOG has to join hands with the government and the National Health Mission to bring about the culture of accreditation of delivery points. It should encourage its members to persuade their hospital management to go for accreditation.

Obstetricians

The obstetricians themselves have great responsibility in working towards saving mothers. They have to be regularly updated about new developments that will help to avoid maternal deaths. A culture of safety and preparedness for safe management of obstetric complications should be nurtured. This may involve participation in academic programmes and MDNMSR of the district. Emergency preparedness of the labour room should be maintained. This needs a team building. The nurses and nursing assistants have to be updated on recent developments. Assignment of specific duties to different categories of staff will ensure that the emergency preparedness is maintained.

A line of referral communication has to be developed so that complicated cases can be referred on time.

Obstetricians have to ensure that in case of maternal deaths the forms are duly filled and sent to the concerned authorities.

V P Paily,
Prameela Menon
Deepthy M.
(On behalf of Editorial Board)

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Recommendations for

Reducing Maternal Mortality in Karnataka

Based on Proceedings of Conference on Reducing Maternal Mortality in Karnataka



Presented to the Government of Karnataka

August 2026

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