

Redefining Fetal Healthcare Using Digital Technology – Resolution Centre of Fetal Medicine, Hyderabad

About the Applicant

- Dr Chinmayee Ratha, MS (OBGyn), FRCOG (UK), FIMSA, FICOG, Diploma in Fetal Medicine (FMF UK)
- Director & Lead Consultant, Resolution Centre of Fetal Medicine, Hyderabad
- Type: Tertiary fetal medicine referral centre | 10+ years of continuous service

Problem Statement / Digital Challenge

- Fetal medicine is a high-complexity specialty — patients are referred from primary OBs, care spans years, and managing large volumes of high-risk pregnancies (90% caseload) demands precision documentation and reporting
- Inefficient paper-based workflows led to delays in report turnaround, data retrieval, and diagnostic decision-making
- Stakeholders affected: Referred pregnant women, primary obstetricians, fetal medicine trainees

Digital Tool / Solution Implemented

- End-to-end digital fetal medicine workflow: comprehensive structured digital reporting, digital patient records with images/graphs/Doppler data, and digital predictive risk models (e.g., pre-eclampsia, chromosomal anomaly)
- In-house + technology-assisted: Advanced ultrasound integration (2D/3D imaging, elastography), digital archiving on HDD, and AI-assisted risk calculation from large datasets
- Key features: Real-time report generation (patient leaves with complete file), digital scheduling, multimodal training tools (phantom models, simulation), teletraining for skill transfer across

Digital Implementation Highlight

- Rollout: Progressive digitization over 10 years across all scan types (NT, anomaly, growth, Doppler, fetal echo)
- Scale: 50,000+ scans; 500+ referring obstetricians/clinics; patients from 10+ geographies including Telangana, adjoining states & overseas (Middle East, Somalia)
- Champions: Dr Chinmayee Ratha (lead); dedicated fetal medicine team trained on structured digital protocols

Digital Impact

- ↑ Clinical outcomes: 85% improvement in early detection of fetal abnormalities; 95%+ diagnostic accuracy (benchmark for experienced fetal centres)
- ↓ Unnecessary interventions: 25–35% reduction in avoidable emergency deliveries/terminations through accurate diagnosis & monitoring
- ↑ Operational efficiency: 30–40% reduction in report turnaround time; 50–80% faster data retrieval; ~20% increase in daily scan capacity
- ↑ Training impact: 72 alumni trained across 12 Indian states + UAE over 10 years; 40–50% enhancement in training capacity with multimodal digital equipment
- ↑ Patient experience: 90% reduction in maternal anxiety (post-scan feedback); patients leave with complete digital report on same day

Key Enablers

Enablers:

- FMF UK-trained clinician leadership — international standard of clinical practice applied locally
- Staff sensitisation to digital tools — team buy-in critical to sustained adoption
- Integration of digital reporting with advanced imaging hardware (3D/elastography)
- Strong referral network of 500+ OBs creating volume and data scale

Challenges:

- High proportion of complex, referred high-risk cases demands consistent digital protocol discipline
- Sustaining training pipeline across geographies without physical presence

Lessons Learned / Replicability

Top Learnings:

- Digital reporting must be built into the clinical workflow from day one — retrofitting paper-based systems is far harder than designing digital-first
- 10-year longitudinal digital database is a research asset — enables predictive risk modelling, outcome tracking, and training case libraries that manual records cannot
- Training and skill transfer are force-multiplied by digital tools — 72 trained fellows across 12 states demonstrates how one centre can reshape a specialty nationally

What hospitals should consider:

- Invest in structured digital report templates for fetal medicine — consistency drives quality and auditability
- Combine teletraining with hands-on simulation to scale fetal medicine capacity in Tier 2/3 cities