

Remote Real-Time Digital Fetal Monitoring by Cardiotocography (CTG) & Decision Making (Futuristic AI assisted)



About the Applicant

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Problem Statement / Digital Challenge

- What was the key operational or clinical challenge?
 - **Inter-observer variability** in CTG interpretation → False-positive CTG rates → **Rising Caesarean Section rates**
 - Missing true pathological → **Increase in Neonatal Morbidity & Mortality**
 - **High Patient load**, Limited specialist availability, **Uneven distribution of health care resources**
- Why was a digital solution required?
 - To address **rising Caesarean section rate**
 - To decrease **neonatal morbidity/ mortality**
 - To obtain **Specialist opinion remotely**
 - To **monitor multiple patients simultaneously**
 - To integrate **AI technology**
- Which stakeholder(s) were most affected (e.g., nursing, admin, patients)?
 - Mothers & Newborns
 - Nursing staff & junior doctors
 - Administrators & policy makers

Digital Tool / Solution Implemented

- Description of the tool/solution
 - **Wireless CTG device** with Mobile App with access to **real-time CTG data to tablets & smartphones.**
- Key features (e.g., dashboard, patient safety tracking, KPI reporting)
 - **Automated parameter calculations**
 - **Color-coded alerts: Green** (reassuring) / **Red** (non-reassuring)
 - **Remote expert interpretation** & report sharing
 - **Multi-patient monitoring** with **data storage & retrieval**
 - **Futuristic AI-assisted interpretation**

Digital Implementation Highlight

- Time taken for rollout: 6 months initially
- Staff trained / departments covered: All Consultants, PG Residents, Medical Officers, Interns, Nurse Practitioner Midwife (NPM)
- Internal champions or teams that led the initiative: Senior obstetricians led structured orientation, peer consultation and workflow integration

Digital Impact

- Operational improvements
 - **Remote Expert Access**
 - **Improvements in clinical outcome**
 - **Cost-efficiency**
 - **Better documentation**
- Quality or safety improvements
 - **Reduced false positives** → **Caesarean Section**
 - **Earlier detection** of abnormal CTG patterns → **Improved perinatal outcomes**
 - **Strengthened supervision**
 - **Standardized interpretation** aligned with FIGO & ACOG guidelines
- Any awards, recognitions: **Good, Replicable, Innovative Practices (GRIP) award** by Government of Gujarat in the GRIP summit, 2023

Key Enablers

- **Leadership & Commitment**
- **Digital technology**
- **Training with workflow integration**

Challenges

- **Adaptability**
- **Connectivity**
- **Concerns for new technology**

Lessons Learned / Replicability

- What other hospitals should consider when adopting similar practices
 - **Gradual Implementation**
 - **Integration** with existing workflows
 - **Training & guidance**
 - **Scalability:** Cost-effective, compatible with smart phones, AI assistance and EMR integration

The screenshot displays a mobile application interface for fetal monitoring. On the left, a 'Recent Tests' list shows five entries for 'NST Test' with timestamps from 23 May to 22 May. On the right, a detailed CTG plot is shown with a green background (reassuring) and a red background (non-reassuring). The plot includes a fetal heart rate line and a uterine activity line. Below the plot, there are various parameters and a navigation bar.

- Any **relevant links + documents** to the details of the solution / write-up:
 - https://drive.google.com/file/d/1M3SQkk1lnAGNbs0_Q6Tolz_kBZ0wH6LGN/view?usp=drive_link