

Title of the Study

Enhancing Antenatal Continuity and Institutional Deliveries through EDD-Based Follow-Up: A Short-Term Observational Study in a Maternity Hospital

1. Introduction and Background

Maternal and neonatal health remain central pillars of global public health efforts. Regular antenatal care (ANC) is vital for identifying high-risk pregnancies, managing complications, and improving maternal and neonatal outcomes. Despite growing ANC coverage in India, a substantial number of women discontinue follow-up before delivery, leading to lower institutional delivery rates—particularly in newly established or resource-constrained hospitals.

A promising strategy to address this challenge involves using the Expected Date of Delivery (EDD) as a focal point for structured follow-up. EDD-linked interventions—such as SMS reminders and phone calls—can enhance adherence to ANC schedules, promote timely checkups, and improve delivery preparedness. Previous studies suggest that such targeted communication strategies can increase both patient retention and institutional deliveries.

This study explores whether a structured, low-cost, EDD-based follow-up system can improve ANC retention and institutional deliveries in a newly established maternity hospital.

2. Problem Statement

Despite initial ANC registration, a significant number of pregnant women drop out of follow-up care before delivery. This results in missed clinical evaluations, reduced institutional deliveries, and heightened risk of maternal and neonatal complications. There is a pressing need for scalable, timely, and cost-effective interventions to strengthen ANC continuity.

3. Rationale for the Study

Given the three-month project timeline, an EDD-based follow-up model offers a practical and low-cost solution for real-time application in hospital settings. Its simplicity, scalability, and feasibility make it a strong candidate for improving antenatal retention and delivery preparedness in new hospital environments.

4. Research Questions

- What is the impact of EDD-based tracking on patient retention from antenatal registration to institutional delivery?

- Does the use of structured follow-up methods (e.g., SMS reminders, phone calls, WhatsApp checklists) based on EDD improve the rate of institutional deliveries?
- Which communication channel among SMS, phone calls, WhatsApp, or ANC booklets is most effective in ensuring follow-up and delivery at the same facility?
- What operational or systemic challenges affect the implementation of EDD-based follow-up mechanisms in maternity care?

5.) Study Objectives

Primary Objective:

- To assess the impact of EDD-based follow-up on ANC retention rates.

Secondary Objectives:

- To evaluate the effectiveness of different communication modes (SMS reminders, phone calls, WhatsApp checklists, and ANC booklet updates) in improving ANC follow-up and delivery adherence.
- To determine the conversion rate of ANC registrants into institutional deliveries based on follow-up communication.
- To analyze the operational feasibility and scalability of implementing EDD tracking within existing hospital systems.
- To capture patient feedback regarding the usefulness of follow-up reminders.

6. Hypotheses

- **Null Hypothesis (H_0):** EDD-based follow-up has no significant impact on ANC retention or institutional delivery rates.
- **Alternative Hypothesis (H_1):** EDD-based follow-up positively influences ANC retention and institutional delivery outcomes.

7. Literature Review

Multiple studies support the effectiveness of mobile and EDD-based reminder interventions in improving maternal health outcomes. Lund et al. (2012) and Sharma et al. (2018) report increased ANC attendance and institutional deliveries following digital reminders. Programs like *mMitra* in India have shown improved care adherence through gestational-age-based messaging. However, challenges such as poor network coverage, digital illiteracy, and staff constraints—especially in public or rural settings—may impact intervention success. These factors must be addressed when considering broader implementation.

8. Research Methodology

- **Study Design:** Observational, hospital-based
- **Setting:** Newly established maternity hospital at Cloudnine Hospital
- **Duration:** Three months
- **Population:** All pregnant women registering for ANC during the study period

Inclusion Criteria:

- Gestational age less than 28 weeks
- Willingness to participate in follow-up
- Provided informed consent

Exclusion Criteria:

- Planned delivery at another facility
- High-risk pregnancies referred to tertiary care
- Refusal to participate

Sampling Method:

- Consecutive sampling; estimated sample size: 170 patients based on expected ANC registrations

Data Collection:

- Baseline demographics, obstetric history, and EDD
- Scheduled SMS/phone reminders prior to ANC milestones
- Tracking of ANC visit adherence and delivery outcomes
- Exit interviews capturing feedback on reminder system

9. Data Analysis Plan

- **Descriptive:** Frequencies of ANC follow-ups, institutional deliveries, and patient responses
- **Comparative:** Chi-square test to assess association between follow-ups and outcomes
- **Timeliness Analysis:** Before-after comparison of scan completion timelines
- **Qualitative:** Thematic analysis of patient feedback
- **Tool Used:** Microsoft Excel

10. Ethical Considerations

This study was observational in nature and involved no direct intervention with patients or alteration of clinical care pathways. Data were collected as part of routine hospital records and were anonymized before analysis to ensure that no personally identifiable information was used. Patient names, contact details, and hospital identifiers were excluded, and all records were coded to maintain confidentiality.

11. Expected Outcomes and Managerial Implications

The study is expected to show that a simple, EDD-based communication approach can significantly improve ANC follow-up and institutional delivery rates. These results may support hospital administrators in implementing cost-effective, scalable maternal health strategies and enhancing operational efficiency in maternity departments.

12. Timeline

Activity	Duration
Proposal & IEC Approval	Weeks 1–2
Participant Enrollment	Weeks 3–5
Intervention & Follow-Ups	Weeks 3–10
Data Collection	Weeks 3–10
Data Analysis & Interpretation	Weeks 11–12
Report Writing	Week 12

13. References

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- Lee et al. (2023). *Journal of Global Health*, 13, 05002.
- Lund et al. (2012). *Health Policy and Planning*, 27(suppl_1), i69–i78.
- Sharma et al. (2018). *BMC Public Health*, 18(1).
- Sondaal et al. (2016). *PLOS ONE*, 11(5), e0154664.