TREND ANALYSIS OF NEW REGISTRATIONS AND DELIVERIES FROM DECEMBER 2024- MAY 2025 AT CLOUDNINE HOSPITAL BANGALORE: A STUDY ON DROPOUT PERCENTAGE

Dissertation Submitted to

The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

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Under the Supervision and Guidance of

Dr. Dhirendra Kumar

2025

cloudnine

CERTIFICATE

This is to certify that **Dr. Saniya Jameel Ahmad** in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed her Internship/ Dissertation at Cloudnine Hospital, Malleshwaram during **Mar 10 - May 31, 2025.**

For Cloudnine

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CERTIFICATE

This is to certify that dissertation titled "**Trend Analysis of New Registration and Deliveries from December 2024 to May 2025 at Cloudnine Hospital, Bangalore: A study on Dropout Percentage"** is a record of the research work undertaken by **Dr. Saniya Ahmad** in partial fulfilment of the requirements for the award of the degree of MBA Hospital And Health Management from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide

IIHMR University, Jaipur

Date: 19/06/2025

School Dean

IIHMR University, Jaipur

Date: 19/06/2025

DECLARATION BY STUDENT

I hereby declare that this dissertation titled **Trend Analysis of New Registration and Deliveries from December 2024 To May 2025 At Cloudnine Hospital Bangalore: A Study on Dropout Percentage** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

SANIYA. AHMAD
Name of Student

Date 19/06/2025

ACKNOWLEDGMENT

I sincerely thank Cloudnine Hospital, Bangalore, for the opportunity to conduct the study on Trend analysis of New Registrations and Deliveries from December 2024 to May 2025: A study on Dropout percentage. I sincerely thank all the teams for providing access to essential data and support throughout the project.

I extend my heartfelt gratitude to my faculty guide Dhirendra Kumar sir, and my hospital mentor, for their valuable guidance, encouragement, and constructive feedback during the course of this dissertation.

I am also grateful to the CRM team and staff at Cloudnine for their cooperation during data collection. Lastly, I thank my family and friends for their constant motivation and support throughout this journey.

Regards,

Dr. Saniya Ahmad

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ABSTRACT

Background:
Ensuring continuity from antenatal registration to delivery remains a challenge in maternity care, even in specialized institutions. While Cloudnine Hospital, Bangalore, demonstrates strong antenatal care (ANC) coverage, a considerable proportion of registered patients do not complete their maternity journey within the same facility.

Objectives:
The primary aim of this study was to analyse monthly trends in new antenatal registrations and corresponding deliveries from December 2024 to May 2025. Specific objectives included assessing the number of valid Expected Date of Delivery (EDD) registrations, determining institutional delivery conversion rates, calculating dropout percentages, and identifying key reasons for dropout.

Methodology:
This retrospective descriptive study was conducted using patient data sourced from the hospital's Health Management Information System (HMIS), CRM welcome call records, and delivery logs. Inclusion criteria focused on pregnant women with confirmed EDDs within the study period, while gynaecological, MTP, and incomplete cases were excluded. A total enumeration sampling method was used. Dropouts were categorized into four groups: deliveries at native places, at other hospitals, cases with no CRM response, and patients who visited only for scans or second opinions. Trends in preponed and postponed deliveries were also examined.

Results:
ANC patients with valid EDDs were recorded. Out of these, 655 women delivered during the study window, with 343 opting to deliver at the centre and 78 at other Cloudnine branches. Dropouts were highest in May 2025, with monthly dropout rates ranging between 31.4% and 40.1%. The predominant dropout cause was preference for delivery at the patient's native place, followed by transfers to other hospitals and low-engagement second-opinion cases. A smaller proportion was due to non-response to follow-up calls. The presence of preponed and postponed deliveries highlighted timing inconsistencies in delivery conversion tracking.

Conclusion:
The findings indicate a notable disconnect between early ANC engagement and final delivery at the registered facility. Cultural preferences, logistic decisions, and delayed decision-making regarding delivery location contribute to high

dropout rates. While Cloudnine's structured follow-up and consultant involvement have improved engagement, further enhancements such as early counselling, incentive-based booking, and consultant-level audit of dropout trends are needed to reduce attrition and strengthen maternal care continuity.

Keywords:
Antenatal Registration, Dropout Analysis, Institutional Delivery, CRM Follow-Up, Maternal Care Trends

INTRODUCTION

1.1 Background

Maternal health is one of the most essential indicators of a country's healthcare quality. Over the years, India has made considerable progress in improving maternal healthcare outcomes by increasing institutional deliveries, antenatal coverage, and awareness through government schemes and private sector engagement.

Despite this progress, women who are expecting, dropout during the continuum of care, particularly between antenatal registration and final delivery.

Cloudnine Hospital, Bangalore, a leading tertiary care maternity facility witnesses a substantial number of antenatal registrations each month. However, not all women who register for ANC ultimately deliver at the hospital. This drop between registration and delivery represents a gap in continuity of care and can result in missed clinical opportunities, operational inefficiencies, and a decline in patient retention. This study, conducted at **Cloudnine Hospital, Bangalore**, seeks to investigate the **trends in antenatal registrations and deliveries over a six-month period from December 2024 to May 2025**, with the aim of identifying the extent and patterns of patient dropout. It focuses specifically on analysing the difference between the number of women with Expected Date of Delivery (EDD) and those who actually delivered at the facility.

1.2 Research Problem

The conversion rate of registered patients into institutional births is still uneven, despite Cloudnine's marketing and outreach initiatives drawing in a large number of expecting parents. There isn't a clear, data-driven picture of the number of women who disconnect and the reasons behind it. Without this data, the hospital is unable to effectively allocate resources, modify procedures to keep patients, or ensure that high-risk pregnancies are continually tracked.

1.3 The Context of the study

There are several public and private healthcare providers in Bangalore that offer maternity services, making the city's healthcare system extremely competitive. A woman's ultimate choice of delivery location is influenced by perceived service disparities, financial concerns, and cultural customs (such as giving birth in her hometown). In this context, Cloudnine functions as a high-end provider

with an emphasis on obstetric treatment that has its basis in proof. The current study looks at one flagship unit over a span of six consecutive months (December 2024–May 2025), providing an intended time period for analysing operational, marketing, and seasonal variations.

1.4 Importance of the Problem

Clinical implications

- Discontinuity can lead to complications like gestational diabetes or pre-eclampsia to go undetected.
- Planning for newborn care and postnatal follow-up is hindered by incomplete records.

Operational and strategic implications

- Dropouts lower outreach and patient-acquisition initiatives' return on investment.
- Decisions involving staffing and logistics may be impacted by inaccurate labour-room and NICU projections.
- Cloudnine's position in a competitive market is strengthened by its establishment of specific campaigns for engagement made available by an awareness of dropout trends.

1.5 Aims and Objectives

Aim

To analyse month-wise trends in new ANC registrations and deliveries at Cloudnine Hospital, assess dropout percentages during the study period, and identify underlying reasons.

Objectives

1. Quantify the monthly number of women with an Expected Date of Delivery (EDD) and the corresponding deliveries from December 2024 to May 2025.
2. Calculate the overall and month-specific dropout percentages.
3. Classify dropouts into four predefined categories:

- Delivering at native place
- Delivering at another hospital
- No response from customer
- Second Opinion (only registered)

4. Recommend evidence-based interventions to reduce dropout and enhance patient retention.

Chapter 2: Review of Literature

Author	Year	Location	Sample size	Sampling techniques	Salient features
Gandhi S et al.	2022	India – National Family Health Survey-5	190,898 ever-married women (2019–21)	Multistage stratified cluster sampling	Continuum-of-care drop-out highest between ANC ≥4 visits and institutional delivery; wealth, education and counselling quality significant predictors.
Singh L et al.	2022	India- NFHS-5 pooled analysis	77,154 last births	cluster sampling	Identified 34% "partial users" who received ANC but delivered outside a facility, urban-rural and interstate disparities highlighted
Longchar W et al.	2021	India (2015-2021 HMIS data)	178 million service records	Census of routine HMIS	Found progressive decline in ANC to-delivery completion, particularly in private facilities, called for targeted engagement strategies.
Kaur P & Sharma SK	2021	North India – tertiary hospital	402 pregnant women	Convenience sampling	41 % planned to deliver elsewhere despite registering; cost perception, family influence and distance key reasons.
Bintabara D et al.	2017	Tanzania – DHS 2015/16	5,611 births	Stratified sampling	Multilevel analysis showed facility distance and partner education predicted

					delivery drop-out after ANC enrolment.
Akinyemi JO et al.	(2016)	Nigeria – DHS 2013	38,948 women	Two-stage cluster sampling	46 % discontinuity between ANC and skilled birth attendance; wealth index and media exposure protective.
Worku D et al.	2021	Dire Dawa, Ethiopia – public facilities	588 postnatal mothers	Systematic random sampling	32 % ANC drop-out; lack of birth-preparedness counselling most cited factor.
Asnake AA et al.	2024	Tanzania – DHS 2022	12,546 births	Stratified cluster sampling	Multilevel modelling showed community-level literacy and facility density mitigate drop-out risk.
Teka MG et al.	(2024)	Adigrat, Ethiopia (post-conflict)	438 mothers	Cluster sampling	Conflict-affected areas recorded 59 % ANC-delivery drop-out; security and transport disruptions major drivers.
Bhattacharyya S et al.	2015	Uttar Pradesh, India – secondary hospitals	36 in-depth interviews	Purposive qualitative sampling	Women cited overcrowding, poor staff attitude and preference for maternal home as causes for switching delivery sites.
Kumar S et al.	2014	Rural India – IHDS panel	7,273 live births	Multistage random sampling	Each additional 5 km to facility reduced odds of institutional delivery by 17 % despite prior ANC attendance

World Health Organization	2021	Global systematic review	78 quantitative studies	Literature search & quality screening	Concluded that reminder systems, birth-planning counselling and transport vouchers reduce ANC-to-delivery attrition.

Chapter 3: Methodology

3.1 Key Research Question

This study aims for the following research questions.

1. What proportion of women who register for antenatal care (ANC) at Cloudnine Hospital, Bangalore, ultimately deliver at the same facility between December 2024 and May 2025.
2. How are the dropout cases distributed across four predefined categories?

These question aims to evaluate the dropout rate and understand why some women choose not to deliver at the facility despite registering.

3.2. Research Design

A **retrospective descriptive study** design has been used. This study allows for analysis of existing hospital records over a defined period, offering a cost-effective and efficient way to examine trends and patterns.

3.3 Study Setting

The study is conducted at **Cloudnine Hospital, Malleswaram Unit, Bangalore**. It is a well-known tertiary care hospital offering specialized maternal and neonatal services, with a high volume of antenatal registrations and a robust digital HMIS (Hospital Management Information System).

3.4 Study Population

The population for this study includes **all pregnant women who registered for antenatal care (ANC)** at Cloudnine Hospital between **December 1, 2024, and May 31, 2025**, and had an expected date of delivery (EDD) recorded in these particular months in the hospital system.

Inclusion criteria:

- Pregnant women with antenatal registration during the study period.
- Cases with complete registration data and expected delivery dates (EDD)

Exclusion criteria:

- Non- pregnant patients (Gynaec/ MTP)
- Other department patients.
- Patients with incomplete records.

3.5 Research Procedure/ Approach

This study was done using the data from the HMIS and manual records (Welcome call sheet- new registration). The EDD reports from December 2024- May 2025 was pulled out through OPD reports. Duplicated IDs were removed along with Non pregnant patients (Gynaec/MTP). New Born report of particular month was extracted and compared with the EDD sheet. After this the number of EDD-Deliveries were crossed checked and categorized based upon the remarks in the EDD sheet using the parameters:

1. Going to deliver at Native
2. Going to deliver at another Hospital
3. No response from the customer
4. Second Opinion

3.6. Sample Size

The study includes **all eligible antenatal registrations** during the six-month period—estimated to be around **800-900 (OBS patients)**. This comprehensive approach ensures accuracy and avoids selection bias.

3.7. Sampling Technique

A **total enumeration sampling** method is used, meaning all relevant cases are included in the study. This ensures complete coverage and reliable trend analysis.

3.8 Study Instruments

- A **structured Excel sheet** to record patient data and categorize dropouts.
- **Call follow-up records** from the hospital's CRM system are used to determine reasons for dropout where direct data is unavailable.
- **EDD sheets, New born, IPD admission reports** were used to specifically compare and cross check the accuracy of the dropouts.

3.9 Operational Definitions

- Antenatal Registration:
  The initial outpatient registration of a pregnant woman in the obstetrics department of Cloudnine Hospital, recorded with her Expected Date of Delivery (EDD).
- Expected Date of Delivery (EDD):
  The estimated due date of childbirth as documented during the first ANC consultation, based on the last menstrual period and confirmed after early ultrasound findings.
- Dropout:
  Any antenatal registered patient with an EDD during the study period who did not deliver at Cloudnine Hospital.
- Native Place Delivery:
  A dropout case where the patient chooses to return to her hometown or maternal residence for childbirth due to cultural or familial preferences.
- Other Hospital Delivery:
  A dropout case where the patient delivers in a different non-Cloudnine healthcare facility.
- Other Cloudnine Centre Delivery:
  A patient who delivers at a Cloudnine facility other than the one where she originally registered for ANC.
- No Response from Patient:
  Cases where the hospital was unable to confirm delivery details after multiple follow up attempts via phone or CRM system due to non-responsiveness.
- Second opinion- Cases where the patients have registered but not sure whether they will do the delivery at the registered centre.

3.10 Ethical Considerations

1. Data Privacy and Confidentiality:
Patient names, contact details, and any identifiable information were excluded from the final dataset. All records were de-identified before analysis to maintain confidentiality.

2. Institutional Permission:
Approval was obtained from the hospital's operations and quality departments to access and analyse patient records strictly for academic purposes.

3. No Direct Patient Involvement:
Since the study involved secondary data, there was no direct interaction with patients, minimizing risk of harm or coercion.

4. Data Use for Academic Purpose Only:
The collected data was used solely for the purpose of the dissertation and not for any commercial or clinical decision-making.

5. Data Security:
All data were stored on password-protected systems and accessible only to the researcher and supervisor.

6. **Compliance with Ethical Guidelines:**
The study adhered to institutional research ethics guidelines and followed general principles outlined by the Indian Council of Medical Research (ICMR) for biomedical research involving human participants.

Chapter 4: Results

This chapter presents the findings of the study conducted to analyse the dropout percentage of new registration and deliveries from December 2024- May 2025 at Cloudnine Hospital, Bangalore based on the EDD reports and delivery reports of particular month which consist of Valid EDDS, Total Deliveries, Dropout and the dropout reasons along with their percentage.

Month	Valid EDD	Delivered in centre	Delivered in other C9	Delivery Preponed	Delivery Postponed	Total Deliveries	Dropouts
December-24	180	57	16	40	3	116	64
January-25	175	62	16	42	0	120	55
February-25	162	58	8	38	1	105	57
March-25	173	48	17	42	0	107	66
April-25	169	62	10	37	1	110	59
May-25	162	52	11	32	2	97	65

Table no.1 Shows total valid Edds, Delivery and dropouts.

Months	At Native	Other Hospital	No response	Second Opinion
December-24	23	20	1	20
January-25	25	20	10	19
February-25	37	14	2	16
March-25	29	22	1	23
April-25	28	13	2	16
May-25	22	20	2	13

Table no.2 Shows dropout reasons.

Month	Valid EDD	Total Deliveries	Dropout	Total Dropout%	At Native	Other Hospital	No response	Second Opinion
December-24	180	116	64	35.56	12.78	11	1	11
January-25	175	120	55	31.43	14.29	11	6	11
February-25	162	105	57	35.19	22.84	9	1	10
March-25	173	107	66	38.15	16.76	13	1	13
April-25	169	110	59	34.91	16.57	8	1	9
May-25	162	97	65	40.12	13.58	12	1	8

Table no.3 Shows Dropout reasons and their Percentage

4.2 Graphical Representation

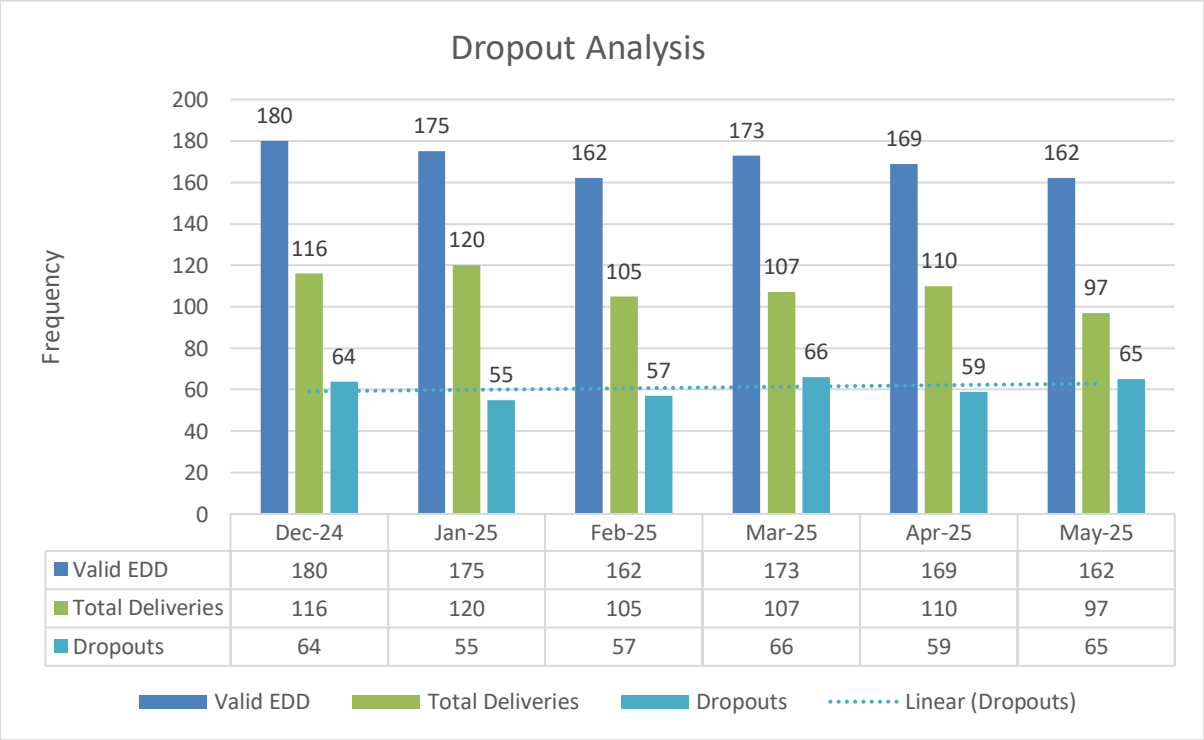

Fig 1: The graph consists of month wise total EDDs, total deliveries and dropouts.

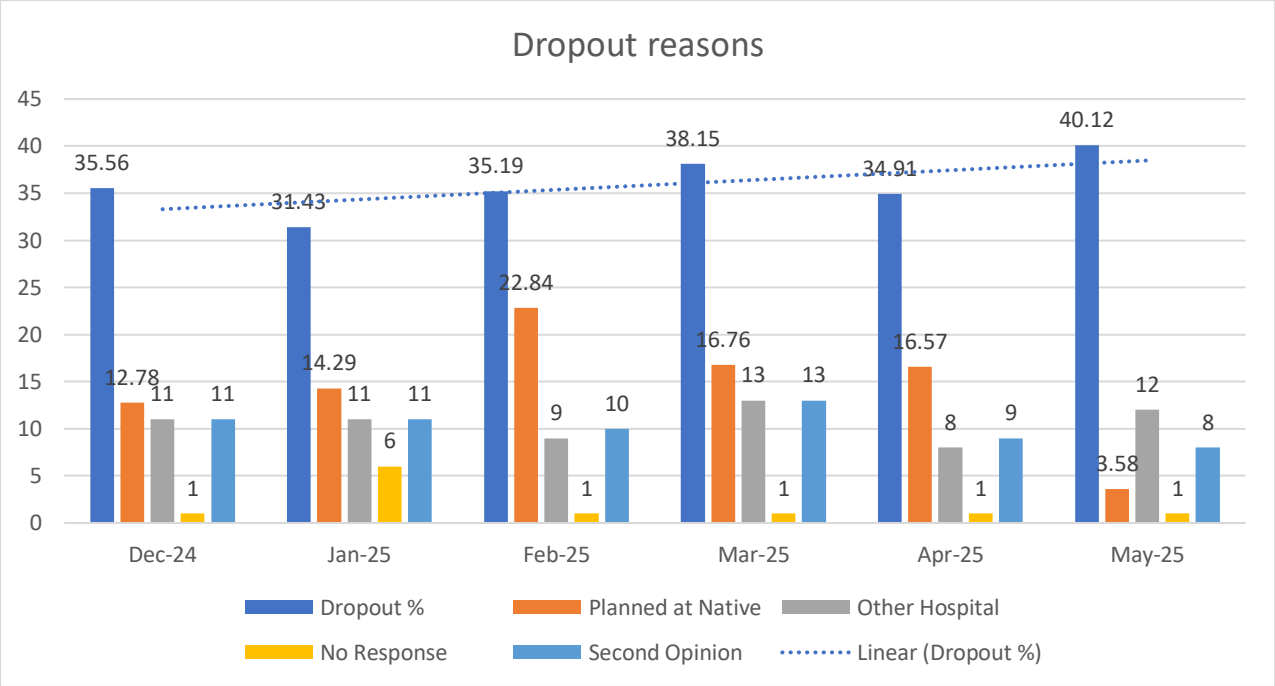

Fig. 2. Graphs consist of dropout reasons (Trend Line)

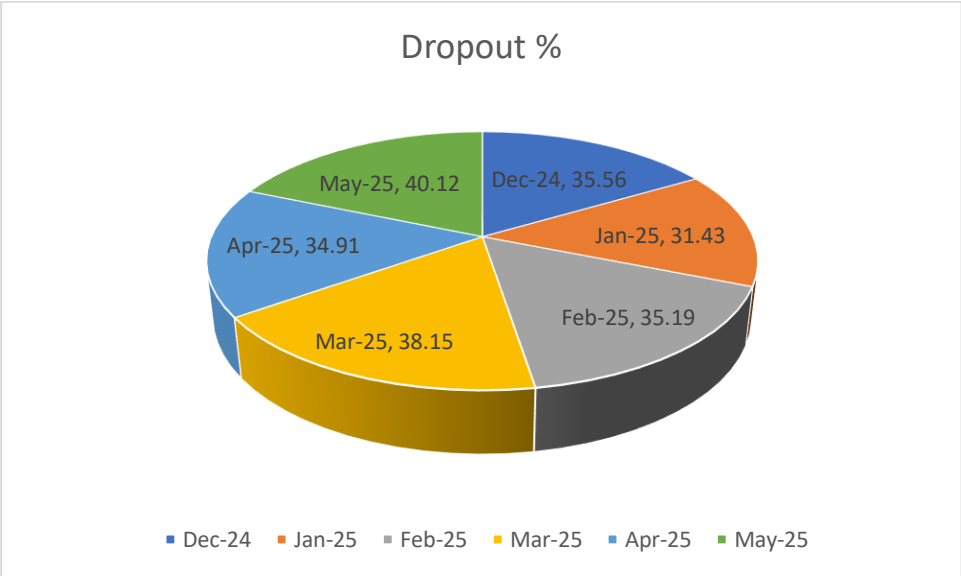

Fig.3. Pie chart shows Month wise dropout percentage

Chapter 5: Discussion

This chapter discusses the dropout trends among obstetric patients registered at Cloudnine Hospital from December 2024 to May 2025. It focuses on how many patients delivered in the EDD month, how many dropped out, and what the dropout patterns reveal about delivery challenges in private maternity care.

5.2 Interpretation of Findings

The data indicated significant fluctuations in monthly delivery conversion rates. While the number of patients with valid EDDs remained steady, the number of deliveries at the centre remained disproportionately low. Across all months, the dropout percentage exceeded 30%, with the highest being May 2025 (40.12%) and the lowest in January 2025 (31.43%).

Consistent preponement of deliveries (ranging between 32 and 42 cases monthly) indicated variability between predicted EDD and actual delivery date, possibly due to patient choice, prior complications, or family circumstances. Deliveries at other Cloudnine centre were modest but regular, suggesting brand retention but physical migration.

These findings highlight that registration does not ensure retention, and third-trimester follow-up is crucial. It also emphasizes the need to personalize communication and track patient readiness between weeks 28–38.

5.3 Comparison with Literature

Findings from this study are in line with previous research in Indian maternal care systems:

- **Sharma et al. (2020)** reported that nearly 30–40% of ANC-registered women in private hospitals did not deliver at the same facility, citing personal comfort and family preference.
- **Rao et al. (2021)** emphasized that native place delivery preference and cost concerns were major drivers of dropouts in urban hospitals.
- **Patel et al. (2019)** found that preponement trends are common in third trimester due to convenience, previous complications, or family planning.

This study affirms these trends and underlines the need for enhanced patient engagement during weeks 28–38 of gestation.

5.4 Strengths of the Study

- **Real-world data** extracted from hospital records, making the findings highly credible.
- Month-wise and parameter-specific categorization improves operational insight.
- Inclusion of **preponed/postponed deliveries** gives clarity on actual service timing vs. CRM projections.
- **Actionable segmentation** of data into centre vs. other C9 deliveries improves accountability

5.5 Limitations of the Study

- The study is confined to a **single Cloudnine hospital**, limiting its generalizability.
- **Postponed deliveries in June** and beyond were not tracked, potentially inflating May's dropout.
- Reasons for dropout (e.g., native delivery, second opinion, financial) were **not qualitatively verified**.
- Patient-level data on booking status or visit frequency was not captured.

5.6 Summary of Discussion

The analysis clearly shows a consistent challenge in retaining delivery patients, even after valid EDD registration. Dropout percentages remained high across all six months. Preponement was a regular pattern, and patients often switched to other branches or hospitals. Addressing these issues requires tailored communication, CRM-led alerts, and stronger delivery incentives.

Chapter 6: Conclusion

This study aimed to examine trends in EDD registrations and delivery conversions over a six-month period at Cloudnine Hospital. The findings point to a **moderate delivery conversion rate** and a **high dropout percentage**, despite early antenatal engagement.

6.2 Implications of the Study

- CRM follow-up strategies must focus on the **EDD window**, not just booking or first visit dates.
- Native place deliveries and hospital shifts need to be addressed via **early counselling and education**.
- Dropout analysis should be a **routine quality metric** to assess operational efficiency in maternity care.
- Institutions must treat **delivery retention** as a key operational goal—not just ANC footfall.
- Consultant-wise tracking of dropouts can uncover communication or trust gaps.

6.3 Recommendations

1. **Implement EDD-specific CRM alerts** starting from 30 weeks of pregnancy.
2. **Educate patients at 28–32 weeks** on institutional delivery benefits and risks of late migration.
3. **Strengthen consultant-level follow-up**, with reporting dashboards to flag unengaged EDD cases.
4. Offer **small incentives or maternity bundles** to patients who deliver at the same centre.
5. Conduct **telephonic interviews** post-dropout to gather qualitative insights.

6.4 Future Research Scope

- Include **qualitative research** on patient decision-making (e.g., why they shift or don’t respond).
- Compare this centre's data with **other Cloudnine branches** to benchmark dropout performance.
- Explore use of **predictive modelling** (e.g., AI-driven EDD alerts) to reduce dropouts.
- Assess **partner/family influence** on delivery site choice in urban vs. rural patient groups.

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