Strategic Interventions for Improving Newborn Vaccine Retention

Presented by: Parthvee Singh

MBA – Hospital and Health Management (2023–2025) IIHMR University, Jaipur

Under the guidance of: Dr. Susmit Jain

Introduction

- Immunization protects newborns from life-threatening diseases.
- Maternity and paediatric hospitals are often the first point of contact between the healthcare system and new-borns
- This study at Cloud nine Hospital identifies reasons for low vaccine retention and offers improvement strategies.
- The results aim to strengthen hospital-based immunization practices and contribute to better child health outcomes.

Research Aim, Objectives & Questions

Aim:

To improve newborn vaccine adherence at Cloud nine Hospital by identifying gaps and suggesting actionable solutions.

Objectives:

- Study vaccine retention trends among newborns.
- Identify reasons for dropouts (cost, communication, etc.
- Understand parents' and staff's views.
- Suggest affordable, hospital-based solutions.

Primary Research Question:

- What are the main factors affecting vaccine retention post-discharge?

Secondary Questions:

- How many newborns miss vaccines or delay them?
- What are the parental and institutional challenges?
- How effective is current discharge communication?
- Which interventions are feasible for private hospital settings?

REVIEW OF LITERATURE

- **Yadav et al. (2021)**

Yadav et al. explored urban health system challenges in delivering timely vaccinations. The research emphasized the need for improved parent-provider communication and follow-up systems in private healthcare settings, which supports the current study's findings on systemic barriers and communication gaps.

Source: Yadav, K., & Singh, B. (2021). Barriers and facilitators of immunization in urban India: A health systems perspective. BMC Public Health, 21, 954. https://doi.org/10.1186/s12889-021-10996-7

- **Bhatia et al. (2020)**

Bhatia et al. focused on strengthening India's Universal Immunization Programme (UIP) and emphasized the importance of integrating the private sector. They argued that although private hospitals handle a growing number of deliveries, their involvement in immunization remains weak, due to lack of regulation and system-based tracking.

Source: Bhatia, V., & Sethi, R. (2020). Strengthening the Universal Immunization Programme in India: Lessons from the private health sector. Indian Journal of Community Medicine, 45(Suppl 1), S7–S12. https://doi.org/10.4103/ijcm.IJCM_123_20

- **Bassey et al. (2015)**

In a study from Nigeria, Bassey et al. investigated immunization dropout rates and found that lack of maternal knowledge and poor follow-up mechanisms were major contributors. Though conducted in a different region, the findings are highly transferable to the urban private hospital context in India.

Source: Bassey, G., & Dairo, M. D. (2015). Immunization dropout rate and the associated factors among children aged 12–23 months in a rural community in Southern Nigeria. African Journal of Primary Health Care & Family Medicine, 7(1), 1–6. https://doi.org/10.4102/phcfm.v7i1.782

Methodology

Design:

- Mixed Methods (Data + Interviews)

Period:

- April 2024 – March 2025

Participants:

- 2,500 newborns (HMIS)
- 210 mothers (questionnaire + follow-up calls)
- 30–40 healthcare staff (interviews)

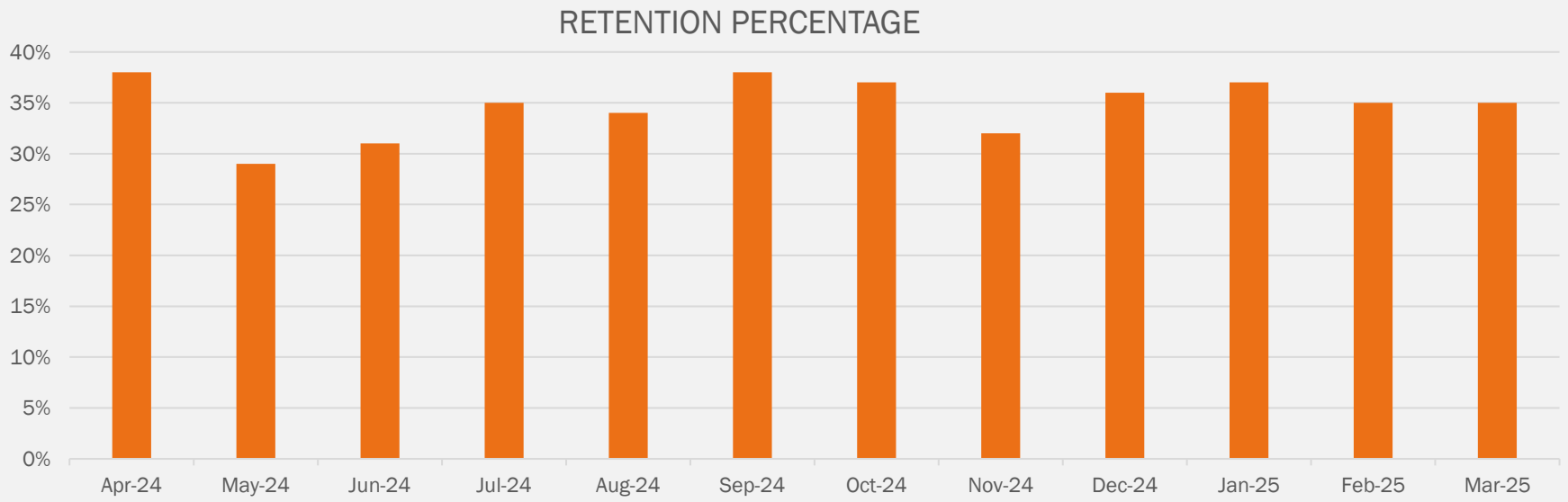
Tools Used:

- Hospital data, pharmacy sales, structured questionnaires, phone interviews

Calculations

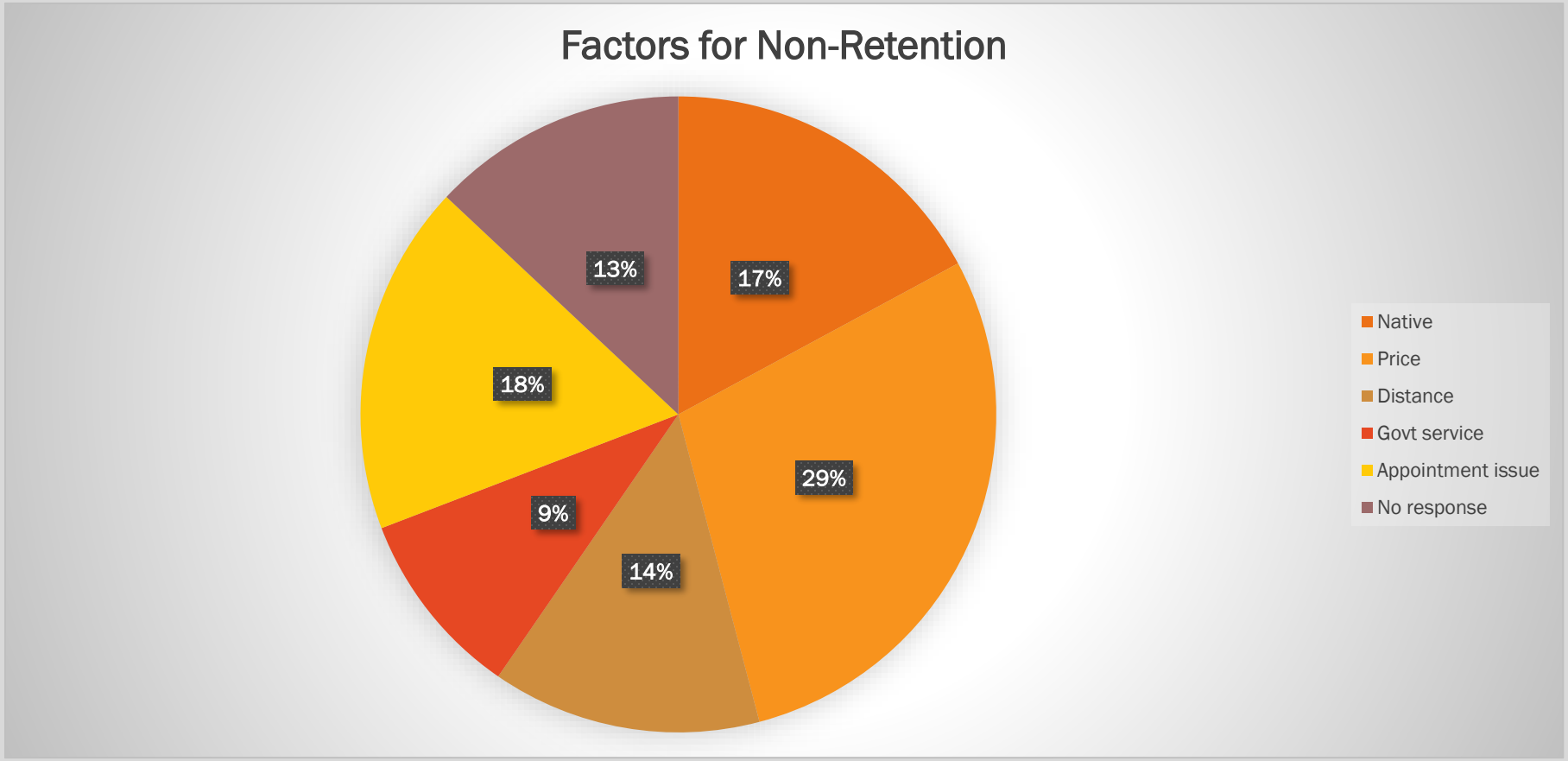
- Taking 6th week vaccination form DOB to 42 days, 10th week as DOB to 70 days, 14 week as DOB to 98 days and 6 months as DOB to 183 days.
- Taking the targeted new-borns and achieved vaccination from OP pharmacy sales of the study period time.
- Total 244 follow-up calls have been made within 2 months of duration of study for getting the reasons of missing the vaccination date, Pitching the package of vaccination and issues facing for appointment scheduling.

Results and Findings



Retention rate ranges between 30% to 37% of one financial year

MONTH	RETENTION PERCENTAGE
Apr-24	38%
May-24	29%
Jun-24	31%
Jul-24	35%
Aug-24	34%
Sep-24	38%
Oct-24	37%
Nov-24	32%
Dec-24	36%
Jan-25	37%
Feb-25	35%
Mar-25	35%



Factors of Non-retention of vaccination, Through follow-up calls

- Only 58% of mothers knew their baby's post-discharge vaccination schedule, while 42% were unaware, indicating a significant knowledge gap.
- The lack of awareness highlights the need for better communication and education regarding neonatal immunization after hospital discharge
- 81% of mothers felt that mobile reminders via SMS or WhatsApp would be helpful in remembering vaccination appointments.
- Feedback from 30–40 healthcare workers revealed key reasons for vaccine dropout, including poor appointment scheduling, inconsistent counselling, and unclear staff communication.

Barriers Identified

Parental Challenges:

1. Cost of vaccines
2. Migration post-delivery
3. Travel distance
4. Missed reminders
5. Preference for government services

Hospital System Gaps:

1. No tracking system
2. Poor inter-department communication
3. No standard reminder mechanism

Recommendations

1. Structured Discharge Counselling using visuals and immunization cards.
2. Digital Reminders: SMS/WhatsApp alerts before, on, and after due date.
3. Flexible Vaccine Packages: Cost-based options.
4. Live Tracking System: Dashboard to monitor upcoming vaccines.
5. Staff Training: Improve communication and consistency.

Strategic Framework

COMPONENT	KEY ACTIONS	STAKEHOLDER INVOLVED	TIMELINE
Assessment	Identify baseline for retention and dropout	Quality and medical record team	Monthly
Counselling	Discharge time education regarding vaccination	Nursing staff and paediatricians	Ongoing
Digital communication	Automate SMS and alerts	IT department	1-2 months rollout
Follow –up co-ordination	Live tracking and initiate follow-up calls	Front desk	Weekly for upcoming week
Affordability strategy	Introduce flexible packages	Hospital management team	Quarterly revision
Staff training	Discharge communication	Clinical training team	Biannual

Conclusion

1. Vaccine dropouts in private hospitals are due to cost, poor communication, and lack of follow-up.
2. Simple, low-cost changes—like better counselling and reminders—can greatly improve vaccination adherence.
3. A structured, hospital-led approach ensures healthier outcomes for every child.
4. By improving internal hospital processes of the vaccination Service, as well actively engaging families, can be done to improve vaccination coverage on time.

References

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THANKYOU