

SYNOPSIS

Title- A Facility-Based Comparative Study on Full Immunization Coverage in High- and Low-Performing UPHCs of Patna Using HMIS/UWIN Data and Field Observations (FY 2024–25)

Introduction

Immunization is one of the most cost-effective public health interventions, playing a critical role in reducing childhood morbidity and mortality due to vaccine-preventable diseases. The Universal Immunization Programme (UIP) of India aims to provide equitable immunization services across all population groups, including underserved urban areas.

Despite national efforts, urban immunization in cities like Patna continues to face challenges due to population mobility, poor tracking of beneficiaries, gaps in field-level service delivery, and systemic inefficiencies. Significant disparities in Full Immunization Coverage (FIC) are seen across Urban Primary Health Centres (UPHCs), highlighting the need for a facility-based comparison to identify actionable areas for improvement.

This study focuses on six UPHCs—three with high performance and three with low performance in terms of FIC—based on HMIS and UWIN data for FY 2024–25. By integrating secondary data analysis with direct field-level observations, the study aims to assess the operational, human resource, and systemic factors contributing to the observed differences.

Research Question

How do high-performing and low-performing UPHCs in urban Patna differ in full immunization coverage, service delivery quality, and operational readiness, based on HMIS/UWIN data and facility-level observations?

Objectives

- To assess and compare full immunization coverage (FIC) across six selected UPHCs using HMIS and UWIN data (April 2024–March 2025).
- To examine antigen-specific coverage trends (e.g., BCG, Penta, OPV, MR) in both high- and low-performing facilities.
- To document and compare session site functionality, cold chain readiness, and frontline worker attendance through structured field observations.
- To identify common enablers and bottlenecks affecting service delivery, record-keeping, and beneficiary mobilization across the six UPHCs.
- To propose targeted recommendations for improving immunization coverage in low-performing urban health facilities.

Hypothesis

Variations in full immunization coverage across high-performing and low-performing UPHCs in Patna are significantly influenced by field-level operational practices such as session regularity, presence and performance of frontline workers, effectiveness of beneficiary tracking systems like UWIN, and completeness of documentation processes.

Materials and Methods

Study Design:

Cross-sectional, facility-based, observational study using secondary data and structured field visit observations.

Study Setting:

Six UPHCs in urban Patna, selected based on their FIC performance in FY 2024–25:

- **High performing:** Jaya Prabha (125%), Daudpur Bagicha (98%), Kankarbagh (93%)
- **Low performing:** Kamala Nehru Nagar (31%), Sandalpur Kumrahar (33%), Rajapur (34%)

Data Sources:

- **Secondary data:** Full Immunization and antigen-wise coverage data from HMIS and UWIN dashboards (April 2024 – March 2025)
- **Primary data:** Field observation reports using structured checklists focusing on session implementation, documentation, cold chain, and human resource presence

Study Tools:

- Data abstraction sheets for HMIS and UWIN data
- Observation checklist for UPHC visit (session site review, cold chain, due list verification, mobilization efforts)

Sampling Technique:

Convenient sampling selection of UPHCs based on documented FIC performance—top 3 and bottom 3 within the urban area.

Study Duration:

March 2025 to June 2025 (3 months)

Data Analysis Strategy

Quantitative Analysis:

- Extract and compare FIC percentages and antigen-specific coverage (BCG, OPV3, Pentavalent3, MR) across six UPHCs
- Calculate dropout rates between critical antigens (e.g., Penta1 to Penta3)
- Descriptive comparison of immunization indicators using Excel and graphs

Qualitative/Observational Analysis:

- Compare field-level factors such as cold chain availability, session planning, staff presence, and documentation practices
- Use matrix-based thematic summary to contrast high vs low performing sites
- Rate session quality on structured scales for interpretation

Integration of Findings:

Triangulate HMIS/UWIN data with field observations to identify high-impact variables contributing to immunization performance.

Ethical Issues

- No direct involvement of human participants—data used is from public domain or based on administrative observations
- Institutional permission was obtained for all site visits
- Data confidentiality and anonymity will be maintained for facility names where appropriate

Implications of Research

The research will provide a comprehensive understanding of the operational challenges and enablers in achieving high FIC in urban UPHCs. Insights can be directly used by the health department and implementing partners to strengthen routine immunization services, improve supervision, optimize FLW performance, and increase the effectiveness of beneficiary tracking systems like UWIN in low-performing urban health facilities.