

Title:

**" Assessing the Impact of Digital Health Interventions on Child Immunization
in India: Insights from NFHS-5 Data "**

1. Introduction

Child immunization is a cornerstone of preventive healthcare, playing a crucial role in reducing child morbidity and mortality. The Universal Immunization Programme (UIP) has significantly contributed to increasing vaccination coverage in India. However, disparities persist due to socio-economic barriers, geographical challenges, and systemic inefficiencies.

With the advent of digital health interventions, such as Electronic Health Records (EHR), CoWIN, U-WIN, and the Ayushman Bharat Digital Mission (ABDM), there is growing potential to enhance immunization tracking, ensure better vaccine adherence, and reduce dropouts. Despite these advancements, the impact of digital interventions on immunization coverage remains inadequately studied.

This research seeks to analyze NFHS-5 (National Family Health Survey - Round 5) data to understand the role, effectiveness, and challenges of digital health interventions in improving immunization coverage across different socio-economic groups in India.

2. Objectives

2.1 General Objective

To critically analyze the role of digital health interventions, particularly Electronic Health Records (EHR), in enhancing child immunization coverage in India using NFHS-5 data.

2.2 Specific Objectives

1. To review existing literature on child immunization programs in India, with a focus on the role of digital health solutions and EHR in improving vaccine coverage.
2. To assess the trends and disparities in immunization coverage using NFHS-5 data, identifying key demographic and socio-economic determinants influencing vaccine uptake.
3. To evaluate the impact of EHR and digital tracking systems on immunization rates, analyzing policy frameworks, implementation challenges, and future opportunities for technology-driven immunization programs.

3. Methodology

This study employs a secondary research methodology, integrating literature review, document analysis, and data mining to derive insights on immunization coverage trends and the role of EHR in India.

3.1 Literature Review

- Conduct a systematic review of research articles, reports, and policy documents on digital health interventions in immunization programs.
- Retrieve data from sources such as PubMed, Scopus, Web of Science, and Google Scholar.
- Analyze best practices and global case studies on EHR-based immunization tracking.

3.2 Document Analysis

- Review government policies, WHO reports, and Indian immunization program documents (e.g., UIP, National Digital Health Mission (NDHM), and CoWIN reports).
- Extract key information on the adoption, challenges, and impact of digital health interventions in immunization.
- Identify gaps in existing policies and their alignment with SDG 3 (Good Health and Well-being).

3.3 Data Mining

- Utilize NFHS-5 datasets to extract immunization coverage statistics, focusing on BCG, Polio, DPT, Measles, Rotavirus, and Hepatitis B vaccination rates.
- Analyze data trends using statistical methods to identify correlations between digital health adoption and immunization rates.
- Compare immunization trends before and after the implementation of key EHR-based tracking systems.

4. Expected Outcomes

1. A comprehensive analysis of digital health interventions and their role in improving immunization coverage in India.

2. Identification of key demographic and socio-economic disparities influencing immunization rates.
3. Policy recommendations on strengthening EHR adoption, addressing implementation challenges, and leveraging digital health solutions for improving immunization tracking and adherence.

5. Conclusion

Digital health interventions have the potential to revolutionize immunization programs by improving data accuracy, reducing vaccine dropouts, and ensuring equitable access. This study aims to bridge the knowledge gap by evaluating NFHS-5 data to understand the real-world impact of EHR in immunization programs, providing policy insights for future healthcare digitalization efforts in India.

6. Timeline:

Synopsis development & Literature search and screening: 20 days

Data extraction and quality assessment: 30 days

Data synthesis and analysis: 20 days

Report writing and submitting final report: 20 days

Note: This proposal serves as a framework based on which the research activities will be carried out.