

# Mission Indradhanush and Intensified Mission Indradhanush—Success Story of India's Universal Immunization Program and the Role of Mann Ki Baat in Bridging the Immunization Gap

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## Abstract

Child immunization is crucial for reducing the morbidity and mortality associated with vaccine-preventable diseases (VPDs). The program grew over the years, however, progress towards full immunization coverage (FIC) remained slow, with only 44% of children fully immunized in 1992-1993, and 62% in 2015-2016, as reported in the National Family Health Survey. To address this challenge, Government of India launched Routine Immunization intensification drive- Mission Indradhanush (MI) in 2014, with the aim of achieving 90% FIC. The success of MI led to the launch of Intensified Mission Indradhanush (IMI) in 2017, with more intensive planning, monitoring, review, and inter-sectoral partnerships.

**Keywords:** Full immunization coverage, Intensified Mission Indradhanush (IMI), Mission Indradhanush (MI), routine immunization, vaccine-preventable disease

## INTRODUCTION

Immunization protects children from vaccine-preventable diseases (VPDs), which are responsible for a significant proportion of child deaths globally. Vaccination not only leads to improved health outcomes and increased life expectancy but also has a significant positive impact on both the community and national economy.<sup>[1,2]</sup>

Government of India formally introduced Expanded Programme on Immunization (EPI) in 1978, which was later expanded to Universal Immunization Programme (UIP) in 1985.<sup>[3]</sup> India's UIP is one of the largest public health programs in the world,<sup>[4]</sup> which annually targets around 26.6 million infants and 30 million pregnant women. Approximately twelve million sessions are held every year to deliver free-of-cost vaccines to the target population.<sup>[5]</sup>

Government of India, through various initiatives, has been making continuous efforts to achieve the target of 90% full immunization coverage (FIC). Since 2014, India's immunization

program has received a significant boost with the introduction of new vaccines, viz. Tetanus and adult Diphtheria (Td), Inactivated Poliovirus Vaccine (IPV), Measles–Rubella vaccine (MR), Rotavirus vaccine, and Pneumococcal conjugate vaccine (PCV) at the national level; and Japanese Encephalitis vaccine (JE) for adults at the subnational level.

Presently, UIP provides protection against twelve VPDs, including severe forms of Childhood Tuberculosis, Polio, Diphtheria, Pertussis, Tetanus, Hepatitis B, Meningitis and Pneumonia caused by Hemophilus Influenza type B, Rotavirus

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diarrhea, JE (in endemic districts), Measles, Rubella, and Pneumococcal Pneumonia.<sup>[6]</sup> India, having committed to the Sustainable Development Goals (SDGs), is dedicated to ensuring universal immunization coverage by 2030 and eliminating VPDs from the country by 2030.<sup>[1]</sup>

### Rationale for MI/IMI

Despite the availability of effective vaccines, many children in developing countries, including India, remain unvaccinated or partially vaccinated, leading to preventable deaths and disabilities.<sup>[2]</sup> Although the UIP had been in operation for over 40 years, the program had only been able to fully immunize 62% of children in their first year of life till 2015–16. In 2015–16, approximately 38% of infants did not receive all of the essential vaccines during their first year of life.<sup>[7]</sup> Several factors contributed to low vaccination coverage, including challenges in reaching large, mobile, and isolated populations, inadequate demand from populations lacking information or with misinformation, and concerns over potential side effects following vaccination. To address low childhood immunization coverage, Mission Indradhanush (MI) was launched in December 2014.<sup>[8]</sup> The mission focused on unvaccinated and partially vaccinated children missed from routine immunization, particularly those in remote and underserved areas.<sup>[9–11]</sup> Under each phase of MI, three to four special vaccination rounds of around 7 working days each are conducted.

Hon'ble Prime Minister Shri Narendra Modi captured the essence of MI in his Mann ki Baat on October 30<sup>th</sup>, 2016, highlighting the significance of vaccination of every child and lauded that MI program is striving to vaccinate every left-out child with vaccine doses missed during routine immunization.<sup>[12]</sup> Never before a Prime Minister had given a clarion call to ensure that no child suffers from VPDs. The visibility of the program garnered by the advocacy by the topmost leadership during Mann ki Baat, not only created awareness among the population about the vaccination program and its health benefits but also stamped the credibility of UIP.

Hon'ble Prime Minister, Shri Narendra Modi acknowledged the impact of MI in vastly enhancing the immunization coverage over the PRAGATI platform and emphasized on the necessity for intensified and sustained efforts. In October 2017, the PM launched Intensified Mission Indradhanush (IMI), an ambitious campaign to expedite the progress of RI. Speaking on the occasion, The Prime Minister emphasized that immunization is not just a government-led initiative, but a social movement that requires the participation and ownership of all citizens. He urged everyone to own the program and work towards reducing maternal and child mortality rates. This visionary political commitment at the highest level greatly boosted the immunization program.

Under the Gram Swaraj Abhiyan (GSA), a comprehensive multisectoral outreach program to deliver social welfare schemes in select villages, MI was launched as one of the seven flagship

initiatives of the Government of India. The GSA campaign was later extended to villages in aspirational districts through the extended Gram Swaraj Abhiyan (eGSA).

The rationale behind studying the impact of MI/IMI is to review the effectiveness of these immunization intensification drives in increasing immunization coverage in India. By studying their impact, we can identify areas for improvement and help inform future policies and strategies for improving immunization coverage in India.

### METHODOLOGY

A mixed-method approach was used, subsuming review of the literature and secondary data analysis. The systematic desk review of core policy and research documents on MI and IMI campaigns was followed by the secondary data analysis of existing research articles and MI coverage reports. A Technical Advisory Group (TAG) was formed, which had representatives from the Immunization Technical Support Unit, immunization partners (WHO, UNICEF, UNDP), a health economics expert, and two senior researchers. Data reports from the National Family Health Survey (NFHS), WHO, and UNICEF National Immunization Coverage (WUENIC) estimates were used for assessing the immunization coverage. To get a holistic perspective, the analysis was conducted across three thematic areas:

- A. Immunization coverage improvement
- B. Impact on the burden of infectious diseases
- C. Impact on systems strengthening.

### DATA AND METHODS

#### Data sources and data analysis

Data for this study were obtained from multiple sources, including NFHS-4 and NFHS-5 reports,<sup>[7,13]</sup> coverage reports of the different rounds of MI and IMI from IMI portal, WUENIC, and concurrent monitoring. We used descriptive statistics to analyze the data from different sources.

### RESULT

#### Immunization coverage improvement

Achievements of MI/IMI Till date, a total of 701 districts have been covered under 11 phases of MI/IMI, wherein 4.46 crore children and 1.12 crore pregnant women have been vaccinated.

Figure 1 shows cumulative numbers of children and pregnant women vaccinated over the various phases of MI/IMI. It shows in every round on average 6 million children 0.5 million pregnant women have been vaccinated.

#### Improvement in immunization coverage

The Figure 2 shows that MI provided the much-needed impetus to UIP. As a result of regular catch-up campaigns to cover the left-out and drop-out eligible beneficiaries, the FIC as per NFHS, the finding shows an increase of 14.4% points from 62% in NFHS-4 (2015-16) to 76.4% NFHS-5 (2019-21).

Table 1 displays the percentage increase in FIC from NFHS-4 to NFHS-5, indicating a correlation between the number of MI and IMI rounds and an increase in FIC in districts. Districts that conducted 5 or more IMI rounds experienced a maximum increase of 20.6% in FIC. The coverage evaluation surveys also showed remarkable improvement in FIC post-MI and IMI campaigns. The first two phases of MI resulted in a 6.7% increase in FIC in a year, while the coverage evaluation survey in 190 districts covered in IMI shows an 18.5% points increase in FIC compared to NFHS-4. Concurrent monitoring data also shows significant declines in unimmunized and

partially immunized children from 6% to 1% and 27% to 13%, respectively, from 2014 to 2021.

**Impact on burden of infectious diseases**

The improvement in immunization coverage is also reflected by the decreasing trend of VPD burden (Data source: WUENIC). The same is reflected in the Table 2:

WHO's VPD Surveillance data indicated that around 321,847 cases and 4002 deaths due to VPDs have been prevented from 2014 to 2021 [Table 3]. It is to be noted that WHO's VPD Surveillance data is available only for five diseases—Diphtheria, Measles, Pertussis, Rubella, and Neonatal Tetanus.

**Immunization system strengthening through MI**

MI and IMI paved the way for immunization system-strengthening interventions to boost routine immunization and sustain it thereafter. Efforts and innovations implemented during MI—evidence-based microplanning, cross-sectoral convergence, generating awareness and vaccine confidence through strategic communication, intensifying immunization campaigns in low-performing areas, intensive monitoring, and strong political commitment—are integrated into routine immunization to strengthen the UIP.

**Reaching the unreached**

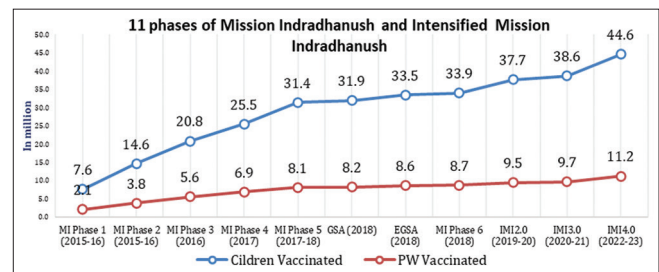
One of the distinctive approaches of this initiative was its emphasis on achieving equity by prioritizing high-risk populations residing in traditionally underserved areas with low immunization coverage. To reach children in these areas during MI campaigns and routine immunization, a customized, evidence-based, and community-centric service delivery strategy was developed.

**Table 1: District-wise analysis of average increase in FIC and number of IMI rounds**

Number of IMI rounds	Number of districts	Average increase in FIC NFHS-4 to NFHS-5 (% points)
0	104	5.1
1-2	192	13.4
3-4	200	19.7
5+	161	20.6

**Table 2: Trend of vaccine-preventable diseases**

VPD	2014	2017	2021	Trend	% Decrease in VPD cases
Diphtheria	6094	5293	1768		71.0
Japanese encephalitis	1657	2043	489		70.5
Measles	26530	12032	5700		78.5
Neonatal tetanus	492	295	81		83.5
Pertussis	46706	23766	593		98.7
Rubella	4870	2748	1675		65.6
Total tetanus	5017	4946	1240		75.3

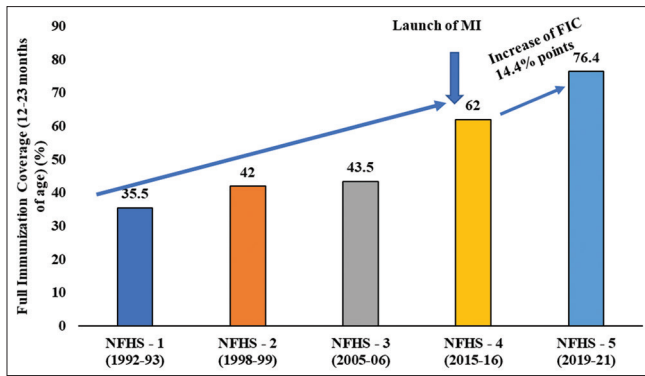


**Figure 1: Cumulative coverage of MI/IMI**

**Table 3: According to WUENIC VPD morbidity and mortality prevented**

VPD	2014	2015	2016	2017	2018	2019	2020	2021	Cumulative disease reduction from 2014 to 2021	Disease mortality Rate/CFR	Number of deaths prevented
Diphtheria	6094	2365	3380	5293	8788	9622	3485	1768	14179	(5-10%) 7.50%	1063
Measles	26530	30168	17250	12032	19474	10430	5604	5700	88690	2.20%	1951
Neonatal tetanus	492	491	227	295	129	35	162	81	2024	40%	854
Pertussis	46706	25206	37274	23766	13208	11875	12566	593	202454	0.01%	20
Rubella	4870	3252	8274	2748	2328	3404	1313	1675	14500	0.78%	113
Total									3,21,847		4,002

(Data source: WUENIC)



**Figure 2:** Trend of immunization coverage according to different rounds of NFHS

More than 420,000 such high-risk and underserved areas were included in these campaigns as well as in RI microplans to sustain the gains. Around 70,000 brick kilns and 38,000 construction sites were included to focus on migratory population and around 30,000 nomadic population are also tracked through informers and reached for providing immunization services. (Source: WHO Polio and Immunization High Risk area data).

MI/IMI also helped in reaching the urban slum and peri-urban population. As a result of the intensified efforts in urban areas, between the fourth and fifth rounds of the National Family Health Survey (NFHS), there was an 11.6 percentage point increase in fully immunized children (FIC) in urban areas, whereas between NFHS-3 and NFHS-4, the gain in FIC was only 6.3 percentage points.

RI microplanning has also been strengthened by the addition of immunization sessions microplans to cover underserved and hard to reach areas identified during MI and IMI. Quality of RI microplans also improved due to system-strengthening initiatives under MI/IMI.

### Improving routine immunization demand

To overcome demand-side challenges, MI implemented measures to promote equity and combat misinformation, such as social mobilization, accurate information dissemination, and debunking vaccination-related myths. Local stakeholders, community and religious leaders, and social media platforms were leveraged to enhance engagement. Moreover, the program integrated the concept of vaccination on demand, empowering community leaders to request vaccination sessions at their preferred time and location and ensuring that all eligible children and pregnant women are vaccinated.

These communication interventions resulted in remarkable improvement in demand-side indicators for MI and for RI in the country. Concurrent monitoring data shows that as an outcome of these efforts, around 62% (127/202) of districts have a complete communication plan in place in 2021 as compared to 48% districts in 2017. Visibility of IEC materials at the session site has also increased from 26% in 2016 to 77% in 2021.

## Synergizing intersectoral coordination

Advocacy of MI/IMI by the Prime Minister himself was pivotal in effective intersectoral partnerships and coordinated activities. Various departments of the Health Ministry as well as the other 12 Ministries were engaged with defined roles and responsibilities. They provided support for expanding service delivery points, transporting supplies, community awareness, and social mobilization.

Clarity on the role of every department percolated to the last service delivery point. Since the intersectoral partnerships were successful, this effective collaborative way of functioning has been institutionalized through regular governance mechanisms of the UIP, i.e., State Steering Committee, State Task Force for Immunization (STFI), and District Task Forces for Immunization (DTFI). This institutionalization of the intersectoral collaboration is bound to have a sustainable impact.

## Other immunization system-strengthening initiatives under MI/IMI

### Cold chain and vaccine logistics management

In addition to a remarkable improvement in overall immunization coverage, MI/IMI led to an improvement in cold chain and vaccine supply management systems. As per the Concurrent Monitoring Data, there has been a significant rise from 67% to 81% between 2014 and 2018, in number of session sites where all vaccines and diluents are available.

### Improving data quality

Regular reviews of coverage data resulted in the improvement of data quality and data usage. The data captured in real-time through IMI Portal further supported the stakeholders to take evidence-based timely corrective measures. The regular feedback mechanism established with external partner engagement for monitoring also enhanced the technical capacities of the program.

### Reporting of AEFI cases and management

The national AEFI surveillance improved by intensive capacity building of the health workers and professionals (including medical officers and district immunization officers) on AEFI reporting and undertaking investigations of serious and severe AEFIs.

## DISCUSSION

Analysis undertaken in this study shows that India's Periodic Intensification of Routine Immunization rounds—MI and IMI have successfully achieved their objective of reaching every child with vaccines under UIP. The findings of this manuscript are similar to the findings of others research suggesting the success of the MI/IMI drives have been shown.<sup>[14-16]</sup>

The initiative uses a multi-pronged approach and one of the major factors responsible for the success of the program was ownership by the topmost leadership of the country. This helped in ensuring effective intersectoral coordination and partnerships. The active engagement and oversight of the



Prime Minister of India played a crucial role in creating and maintaining the necessary political momentum for the MI/IMI initiative, which in turn secured the buy-in and support of government and non-government stakeholders across different sectors and levels.<sup>[8]</sup>

MI/IMI being the flagship program of PM was under regular review of the Office of PM. This had a cascading impact and resulted in regular and robust reviews at the state, district, and block levels. The constructive feedback led to relevant action points, which resulted in the immediate and effective redressal of issues and bottlenecks. According to the guidelines and findings, regular supervisor meetings were conducted during vaccination rounds to review data and address issues. External monitoring was also conducted by national, state, and partner monitors who provided feedback and reviewed progress.<sup>[8]</sup>

According to our research, MI/IMI has succeeded in enhancing the planning of immunization communication. It is evident that the program has achieved its goal, as explained by Gurnani *et al.*,<sup>[8]</sup> to transform routine immunization into a Jan Andolan, or a “people’s movement” in Hindi. The improved vaccination uptake and its evolution to incorporate people-empowering initiatives like vaccination on demand is proof that the program is indeed a people’s movement. Limitation: Improvement in FIC and decrease in VPD occurrence is a result of routine immunization strengthening as well as MI and IMI. Assessing the exclusive impact of MI/IMI on immunization coverage and VPDs needs more detailed modeling and data analysis.

## CONCLUSION

India has made significant progress in improving immunization coverage in the last decade through the implantation of periodic immunization intensification drives of MI and IMI. Overall, the success of India’s immunization program demonstrates the importance of sustained government efforts, technical advancements, involvement of multiple sectors, and increased community awareness. Continuous monitoring of the program by the leader of the country ensured sincere supervision of the activities for effective implementation. India’s achievements from MI/IMI set a global example of strong political will and robust operational and demand generation strategies to be replicated or adapted to eliminate life-threatening VPDs, even in the world’s most challenging areas. Continued investment and innovation in this area will be critical in ensuring future generations’ sustained progress and protection.

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## Conflicts of interest

There are no conflicts of interest.

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