

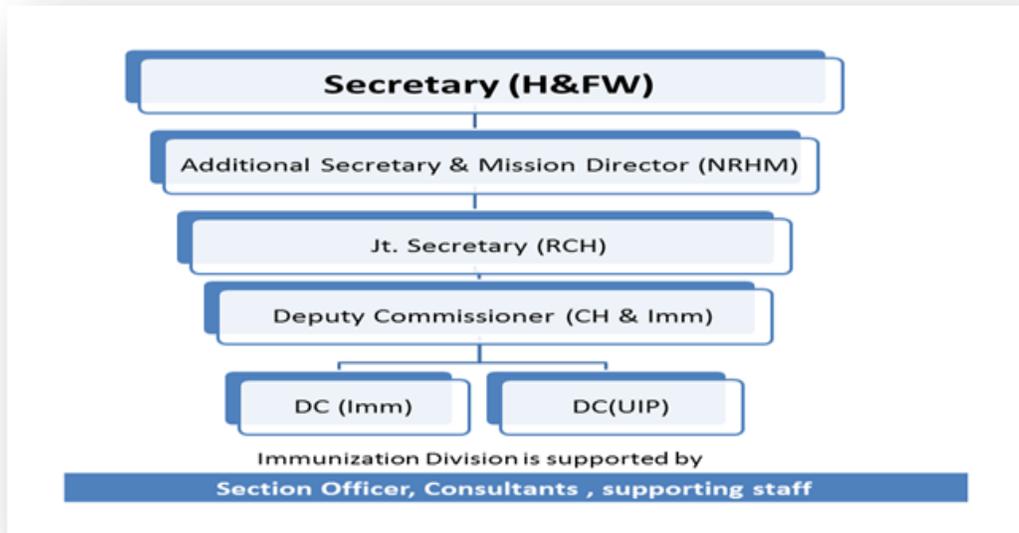
Universal Immunization Program

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Immunization Division at MoHFW

Immunization division is a part of the RCH program under National Rural Health Mission

(NRHM) and is placed in the Ministry Of Health and Family Welfare, Nirman Bhawan New Delhi. This division provides all the technical assistance required to undertake the activities under UIP. The division reviews the state Program implementation plans and facilitates in its approval process as per norms and guidelines. The key roles of this division include activities related to Routine Immunization, Campaigns (SIAs) such as Polio, Measles, and Japanese Encephalitis, Monitoring Adverse Events Following Immunization (AEFI), Vaccine and Cold Chain Logistics, Strategic communication related to immunization program and trainings related to Immunization Program. It facilitates the National Technical Advisory Group on Immunization (NTAGI) to review and recommend its views on various technical and programmatic issues related to immunization such as new vaccine introduction etc. The division is engaged in reviewing and sharing the learnings of the program with state and district program officers. The division also works closely with all development partners and other stake holders.



Organogram of Immunization Division:

Evolution of the programme:

1978: Expanded Programme of immunization (EPI).

- Limited reach - mostly urban

1985: Universal Immunization Programme (UIP).

- For reduction of mortality and morbidity due to 6 VPD's.
- Indigenous vaccine production capacity enhanced
- Cold chain established
- Phased implementation - all districts covered by 1989-90.
- Monitoring and evaluation system implemented

1986: Technology Mission On Immunization

- Monitoring under PMO's 20 point programme
- Coverage in infants (0 – 12 months) monitored

1992: Child Survival and Safe Motherhood (CSSM)

- Included both UIP and Safe motherhood program

1997: Reproductive Child Health (RCH 1)

2005: National Rural Health Mission (NRHM)

Vaccines under UIP

- Under UIP, following vaccines are provided:
 1. BCG (Bacillus Calmette Guerin)
 2. DPT (Diphtheria, Pertussis and Tetanus Toxoid)
 3. OPV (Oral Polio Vaccine)
 4. Measles
 5. Hepatitis B
 6. TT (Tetanus Toxoid)
 7. JE vaccination (in selected high disease burden districts)
 8. Hib containing Pentavalent vaccine (DPT+HepB+Hib) (In selected States)

Diseases Protected by Vaccination under UIP

1. Diphtheria
2. Pertussis.
3. Tetanus
4. Polio
5. Tuberculosis
6. Measles
7. Hepatitis B
8. Japanese Encephalitis (commonly known as brain fever)
9. Meningitis and Pneumonia caused by Haemophilus Influenzae type b

VPD surveillance

- Vaccine Preventable Diseases (VPD) surveillance system is needed to create evidence base to enable planning and deployment of effective interventions.
- India has different surveillance models. Integrated Disease Surveillance Project (IDSP) is one of those surveillance systems.
- IDSP is a case-based surveillance system for detection of early warning signals of outbreaks. There are other sentinel surveillance systems which falls under different vertical national health programs for diseases targeted for control, elimination or eradication.
- Another source is the National Polio Surveillance Project (NPSP), which has done extremely well in acute flaccid paralysis (AFP) and measles surveillance in India.
- WHO/NPSP provides needed technical and training support for AFP and measles surveillance.

National Immunization Schedule (NIS)

- Under UIP, Govt is providing vaccination to prevent **seven** vaccine preventable diseases,
- Diphtheria, Pertussis, Tetanus, Polio, Measles, Hepatitis B & Tuberculosis.

S No	Vaccine& its presentation	Protection	Route	Number of doses	Vaccination Schedule
1	BCG (Bacillus Calmette Guerin)- Lyophilized vaccine	Tuberculosis	Intra- dermal	1	at birth (upto 1 year if not given earlier)
2	OPV (Oral Polio Vaccine)- Liquid vaccine	Poliomyelitis	Oral	5	Birth dose for institutional deliveries, Primary three doses at 6, 10 & 14 week and one booster dose at 16-24 month of age. Given orally
3	Hepatitis B – Liquid Vaccine	Hepatitis B	Intra- muscular	4	Birth dose (within 24 hours) for institutional deliveries, Primary three doses at 6, 10 & 14 week.
4	DPT (Diphtheria, Pertussis and Tetanus Toxoid) – Liquid vaccine	Diphtheria, Pertussis and Tetanus	Intra- muscular	5	Three doses at 6, 10 & 14 week and two booster dose at 16-24 month and 5-6 years of age
5	Measles - Lyophilized vaccine	Measles	Sub- cutaneous	2	9-12 months of age and 2 nd dose at 16-24 months.
6	TT (Tetanus Toxoid) – Liquid vaccine	Tetanus	Intra- muscular	2 2	10 years and 16 years of age For pregnant woman, two doses given(one dose if previously vaccinated within 3 Year)
7	JE vaccination (in selected high disease burden districts) Lyophilized vaccine	Japanese Encephalitis (Brain fever)	Sub- cutaneous	2	9-12 months of age and 2 nd dose at 16-24 months (6 month after vaccination drive)
8	Hib (given as pentavalent containing	Hib Pneumonia and Hib	Intra- muscular	3	6, 10 & 14 week of age

Hib+DPT+Hep B) (in 8 states) – Liquid vaccine	meningitis			
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In addition,

- JE vaccination is provided in 113 districts and additional 62 new JE endemic districts have been identified.
- JE second dose has been introduced under UIP in these endemic districts from April,13
- Pentavalent vaccine introduced in 8 states i.e. Tamil Nadu, Kerala, Haryana, J&K, Gujarat, Karnataka, Goa and Puducherry.

Implementation of Routine Immunization

- RI targets to vaccinate **26 million new born** each year with all primary doses and **~100 million** children of 1-5 year age with booster doses of UIP vaccines. In addition, 30 million pregnant mothers are targeted for TT vaccination each year.
- To vaccinate this cohort of **156 million beneficiaries**, **~9 million** immunization sessions are conducted, majority of these are at village level.
- As per Coverage Evaluation Survey (2009), **89.8%** of vaccination in India is provided through **Public sector** (53% from outreach session held at Anganwadi centre (25.6%), sub centre (18.9%) etc.) while private sector contributed to only 8.7%.
- ASHA and AWW support ANM by mobilizing eligible children to session site thus try to ensure that no child is missed. ASHA is also provided an incentive of Rs. 150/session for this activity
- To ensure potent and safe vaccines are delivered to children, a network of **~27,000 cold chain points** have been created across the country where vaccines are stored at recommended temperatures.

Components:

I. Strategy and policy:

National Health Policy (2002) is directed towards achieving an acceptable, affordable and sustainable standard of health through an appropriate health system. Provision of universal immunization of children against vaccine preventable diseases is one of the major goals under this policy. Country's five year plan also puts emphasis on reduction in maternal and infant mortality rates as major maternal and child health indicators. Country developed a **comprehensive Multi Year Strategic Plan for Immunization** in 2005 with an addendum in 2010 to achieve these targets of improving access and utilization of immunization in the country. This document is a national strategy document to guide development of UIP plans at national and state levels. Currently development of next multi year plan is under process. Ministry of Health and Family Welfare also revised the **National Vaccine Policy in 2011**. The goal of this vaccine policy is to guide decision making in order to develop a long term plan to strengthen the UIP. This policy addresses issues of vaccine security, management, regulation guidelines, vaccine research and development and product development. To ensure informed decision making for any modification in UIP schedule or inclusion of new vaccines, there is a National Technical Advisory Group on Immunization (NTAGI) which comprises of a number of technical experts, national program leaders and managers, representatives from development partners and professional bodies. All issues related to the program and vaccines are presented to this group for review and discussions and final recommendations.

II. Cold Chain System, Vaccines and Logistics:

Cold Chain is a system of storing and transporting vaccine at the recommended temperature range from the point of manufacture to point of use. India has built a vast cold chain infrastructure to ensure that only potent and effective vaccines reach millions of beneficiaries across the country. The vaccines are supplied by manufacturers directly to four Government Medical Store Depots (at Karnal, Mumbai, Chennai and Kolkata) and state and regional vaccine stores. The GMSDs supply to the states and regional vaccine stores; state and regional vaccine stores supply vaccines to Divisional vaccine stores and district. The vaccines are further supplied to last cold chain points which are usually situated in Primary Health Centers (PHCs) and Community Health Centers. Transportation of vaccines from States/Regional stores to divisions and districts is done in cold boxes using insulated vaccine

vans. Vaccines carriers with icepacks are used to transport vaccines from PHCs to the outreach sessions in the village.

In addition to the equipment, there are different personnel deployed for cold chain and vaccine handling. In the states, there are State Cold Chain Officers who are in charge to ensure smooth functioning of all cold chain equipment in the state. At regional, divisional and district levels, there are cold chain technicians whose responsibility is to maintain and repair cold chain equipment for maintaining the recommended temperatures for storage of vaccines. At the PHCs and CHCs, cold chain handlers, who are health personnel (pharmacists, male and female multi-purpose health workers, etc) have been tasked with proper storage and handling of vaccines and daily upkeep of Ice Lined Refrigerators (ILRs) and Deep Freezers (DFs) including temperature charting. Cold chain technicians have been provided with trainings and tool kits for performing installation, maintenance and repair activities. For maintenance of cold chain equipment, Govt. of India provides funds to the state under NRHM.

The performance and efficiency of the cold chain system at different levels is monitored continuously, through supervisory visits, review meetings.

The Government of India procures and supplies all UIP vaccines along with diluents to all states. In addition to vaccines, syringes of different capacities, are also procured centrally and supplied to states. The process involves vaccines and logistics forecasting, scheduling, ensuring supplies as per need, and so on. It is important to ensure that the cold chain system is not overburdened and there are no under supplies. Supplies are made to states on a quarterly basis on receipt of indent. State Vaccine Stores can store vaccines for three months and so can district vaccine stores. PHCs/CHCs send monthly indents to district stores. PHCs can store vaccines for a maximum of one month only.

III. Injection safety and waste disposal:

A large number of injection procedures are undertaken in lakhs of vaccination sessions across the country every year. Unsafe injection practices can harm the recipient of the injection, the health worker and the community resulting in potentially life threatening infections such as HIV/AIDS, Hepatitis B and C, etc. To ensure safe injection practices, Government of India endeavours to ensure continuous supply of injection safety equipments

(AD syringes, reconstitution syringes, hub cutters and waste disposal bags). Trainings are conducted and supported by job-aids, on job training (supportive supervision).

Disposal of immunization waste is strictly as per Central Pollution Control Board (CPCB) guidelines for biomedical waste disposal. The principles followed are segregation of waste at source (at the session site), transportation to the PHC or CHC, treatment of sharps and potentially biohazardous plastic waste, disposal of sharps in sharp pits and treated plastic waste through proper recycling. The states are provided funds to procure hub cutters, black and red plastic bags and construction of sharp pits in PHCs and CHCs construction of.

IV. AEFI Surveillance System in India:

HISTORY

- 1988: AEFI surveillance started India
- 2005: National AEFI guidelines developed and disseminated
- 2007 Onwards: State & District Level AEFI Committees formed
- 2008: National AEFI Committee constituted.
- 2010: Guidelines revised, printed and widely circulated.
- 2011: SOPs printed and disseminated
- 2012: AEFI Secretariat establishment
- Over the years: improved trends of reporting.
- The WHO defines AEFI as “a medical incident that takes place after an immunization, causes concern, and believed to be caused by immunization”.
- AEFI surveillance in country monitors immunization safety, detects and responds to adverse events following immunization; corrects unsafe immunization practices, reduces the negative impact of the event on health and contributes to the quality of immunization activities.
- Special focus is being provided by Government of India to strengthen the system for

reporting and responding to any Adverse Event Following Immunization (AEFI)

- Operational Guidelines for AEFI surveillance and response first published in 2005 and revised in 2010. These have been disseminated to medical officers all over the country
- An AEFI secretariat has been established under ITSU (Immunization Technical Support Unit) to strengthen & coordinate all issues related to AEFI.
- India National Regulatory Authority (NRA) assessment has passed successfully in Dec 2012.
- The National AEFI committee has been revised in 2013 and broader range of expertise has been added to the National AEFI committee such as Pharmacology, Forensic Medicine, Pathology, Immunology, Epidemiology, Communication etc besides Paediatrics and Immunization program related experts.
- Workshops have been conducted at national level and for the pentavalent using states (Gujarat, Goa, Jammu and Kashmir, Haryana, Tamil Nadu, Kerala, Karnataka and Puducherry) for capacity building through latest WHO AEFI Causality Assessment guidelines and developing an effective AEFI monitoring system.
- To strengthen collaboration between stakeholders of vaccine pharmaco vigilance program at state level, participants from the regulator (DCGI) and In charges from the network of ADR monitoring centres of the Pharmacovigilance program of India (PvPI) have also been included from each state in these trainings.
- The National AEFI guidelines are being currently revised to include the new WHO causality assessment methodology and add verbal autopsy and forensic autopsy protocols for investigating AEFI deaths along with SOPs for AEFI case related sample collections.

V. Strategic communication:

Strategic Communication refers to policy-making and guidance for consistent information activity through coherent messaging. The issue of media advocacy, proactive planning and effective media response is emerging as one of the key elements of strategic communication support to achieving full Routine Immunization coverage in the country. Demand generation gains critical importance in raising immunization coverage in the country, especially when India is poised to sustain polio eradication, increase visibility and coverage of RI by motivating people to demand immunization services, sustain and report vaccine related features, timely completion of routine immunization schedules of their children, and build grounds for new vaccines.

Development of RI Logo

The new logo of the baby holding the syringe, indicating RI as his right, has been developed in purple color. This will give RI a distinct identity. Deliberate efforts have been made to stay away from the Polio brand colors of yellow and pink.



VI. Immunization Trainings

The Immunization Programme runs due to the coordinated efforts of different cadres of health staff working in the states at different levels (states, districts, PHCs and CHCs). The following immunization training programmes are conducted in the country:

No .	Name of training	Duration	Level /venue	Participants	Training module	Evaluation
1.	Immunization training for Medical Officers (since 2009-10)	3 days	State/ Regional/district	All contractual and regular Medical Officers including AYUSH	Immunization Handbook for Medical Officers (revised 2011), Department of Health and Family Welfare, MOHFW, GOI	Conducted in 2012-13
2.	Immunization training of Health Workers (since 2006 and from 2012 using revised version)	2 days	District level	All female and male Multi Purpose Health workers and their supervisors	Immunization Handbook for Health Workers (revised 2011), Department of Health and Family Welfare, MOHFW, GOI	Conducted in 2009
3.	Training of Vaccine and Cold Chain Handlers (since 2010-11)	2 days	District level	All health workers (Pharmacists /staff nurses/ANMs/LHVs /Male MPWs/etc.) in charge of handling vaccines & cold chain equipments at all vaccine stores (state/region/ districts/ hospitals/PHCs /CHCs)	Handbook for Vaccine and Cold Chain Handlers (revised 2011), Department of Health and Family Welfare, MOHFW, GOI	Conducted in 2012-13
4.	Training of state, district and block data entry operators (ongoing)	1 day	State level	Immunization programme data entry operators at state, district and block levels.	-	-

In the year of Intensification of Routine Immunization (2012-13), the Government of India has

supported the training of approximately 12,50,000 frontline workers (ANMs, LHVs, Anganwadi workers and ASHAs) in 9 high priority states – UP, MP, Rajasthan, Bihar, Chhattisgarh, Jharkhand, Haryana, Gujarat and West Bengal. The objective is to motivate and strengthen the capacity of frontline workers to reduce dropouts and left outs and improve the quality of services. The process followed is a cascade model.

Cold chain technicians posted at district, divisional, regional and state levels are given trainings as follows:

- Training on repair and maintenance of ILRs / DFs
- Training on repair and maintenance of WICs / WIFs and generator sets.
- Training on installation, maintenance and repair of Solar Refrigerators
- Training on repair of voltage stabilizers.

Some of the new training courses under development for specific personnel are as follows:

- Induction training for State Immunization Officers
- Training on Effective Cold Chain and Vaccine Management (ECCVMC) for immunization and cold chain programme managers at state and district levels

The Government of India has enhanced the training capacity for cold chain technicians by setting up the National Cold Chain and Vaccine Management Resource Centre (NCCVMRC) at National Institute of Health and Family Welfare (NIHFW), New Delhi and also the National Cold Chain Training Centre (NCCTC) at State Health Transport Organization (SHTO), Pune, Maharashtra.

VII. Monitoring and evaluation:

Universal Immunization Program has a set of indicators to monitor progress under different components of the program and evaluate the coverage of immunization amongst the target population. In the country, UIP performs monitoring and evaluation at three levels. 1) There is a regular reporting system from the health sub-centre to PHC, district, state and national level. This reporting has been computerized in the country as a part of Health Management Information System (HMIS), and the data is available from health facility level and above every month. Recently MOHFW has also implemented Mother and Child Tracking System (MCTS) to

track every pregnant woman, mother and child up to 5 years of age to ensure delivery of health services. 2) To evaluate immunization coverage, country conducts period population based surveys. These include National Family Health Survey (NFHS), District Level Health Survey (DLHS), Annual Health Survey (AHS) and UNICEF Coverage Evaluation Survey (CES). 3) In between periodic surveys and administrative reporting, country also plans targeted studies and surveys to evaluate the performance of various components under UIP. Some of the examples are VMAT/EVSM, PIE, MCTS Field Assessment etc.

A review mechanism is established at all levels of the program implementation in the country. Though there are variations in the timings, but PHCs and districts usually conduct program review at monthly intervals. However, at the state and national level, it is less frequent. MOHFW has recommended constitution of task forces at the state and district level for critical review of the program at monthly interval involving various stakeholders at the particular level. At national level also, immunization division has constituted Immunization Action Group (IAG) to review the program, discuss issues and suggest solutions.

The State wise indicators are detailed in the national routine immunization **dashboards (annexure 2)**.

Schemes:

a) Routine Immunization:

- Objectives:
 - The stated objectives of UIP are:
 - To rapidly increase immunization coverage.
 - To improve the quality of services.
 - To establish a reliable cold chain system to the health facility level.
 - Monitoring of performance.
 - To achieve self sufficiency in vaccine production.
- Scope and eligibility:
 - India has one of the largest Universal Immunization Programs (UIP) in the world in terms of the quantities of vaccines used, number of beneficiaries covered, geographical spread and human resources involved.

- Under the UIP, all vaccines are given free of cost to the beneficiaries as per the National Immunization Schedule.
 - All beneficiaries' namely pregnant women and children can get themselves vaccinated at the nearest Government/Private health facility or at an immunization post (Anganwadi centres/ other identified sites) near to their village/urban locality on fixed days.
 - The UIP covers all sections of the society across the country with the same high quality vaccines.
- **Achievements:**
 - The biggest achievement of the immunization program is the eradication of small pox.
 - One more significant milestone is that India is free of Poliomyelitis caused by Wild Polio Virus (WPV) for more than 33 months.
 - Besides, vaccination has contributed significantly to the decline in the cases and deaths due to the Vaccine Preventable Diseases (VPDs).
 - **Coverage:** As per the Coverage Evaluation Survey (CES-2009), **61%** of children in the country are Fully Immunized with all vaccines. The comparative national figures for the District Level Household Survey (DLHS) 3 (2007-08) and CES 2009 are summarised in the table below:

	Evaluated Coverage (%)	
	District Level Household Survey (DLHS) 3 (2007-08)	Coverage Evaluation Survey (CES) (2009)
Full Immunization	53.5	61.0
BCG	86.7	86.9
OPV3	65.6	70.4
DPT3	63.4	71.5
Measles	69.1	74.1
No Immunization	4.6	7.6

The state wise coverage in various surveys is mentioned in annexure I

Immunization Campaigns

JE Vaccination

- 113 JE endemic districts have completed the JE mass vaccination and are implementing JE under routine vaccination. 2nd dose of JE is also introduced in RI in JE endemic states since April, 2013
- National Vector borne Disease control Program Division (NVBDCP) has identified 62 new JE endemic Districts. JE campaign in these new districts targeting children between 1-15 years of age is planned in a phased manner.
- A total of 101.16 lakh children have been vaccinated during the campaigns in 2012-13 for 17 districts.
- JE mass vaccination planned for year 2013-14 in following states:
 1. 14 districts in Bihar
 2. 2 districts karnataka
 3. 2 districts Tamil Nadu
 4. 1 district of West Bengal

JE vaccination is provided as part of Routine Immunization programme in 113 districts in 15 states.

Measles Supplementary Immunization Activity (SIA)

- Based on National Technical Group on Immunization (NTAGI) recommendation, Govt. Of India introduced 2nd dose of Measles under the Universal Immunization Program (UIP) in 2010 through a two pronged strategy.
- 21 states with Measles 1st dose coverage of >80% introduced 2nd dose directly in their Routine Immunization
- 14 states with <80% measles 1st dose coverage have targeted all children between 9 months-10 years age for measles vaccination followed by introduction of 2nd dose under Routine Immunization after an interval of 6 months
- Measles vaccination campaigns conducted in all districts of 14 states in a Phased manner(Phase I: 2010-11, Phase II:2011-12 & Phase III:2012-13)
- All states have completed Measles SIA in all Districts (Urban areas of Indore and Bhopal

are undergoing Measles SIA)

Year	Target District	Districts Completed	Total Target Children (Lakh)	Achievement (Lakh)	% Achievement
2010-11	45	45	138.46	120.77	87.2
2011-12	152	152	401.67	361.02	89.9
2012-13	169	169	854.86	700.10	82
Total		366	1394.99	1181.89	84.7

- The 66th SEAR Regional Committee has passed a resolution on 13th Sept 2013 to eliminate measles in the 11 SEAR countries including India, by 2020.
- Laboratory supported measles surveillance is enhanced to 15 states.

Polio Eradication program in India

There is a remarkable achievement, particularly considering the fact that in 2009 India accounted for nearly half of the total number of polio cases globally and there were an estimated 2 lakh cases of polio every year in the country in the year 1978.

On 25 February 2012, World Health Organization (WHO) removed India from the global list of polio endemic countries. As on date no wild polio virus case has been reported in the country after January 2011

This success can be attributed to the concerted efforts made toward improving both quality and coverage of pulse polio rounds as under:

- **Political commitment** of the highest order Hon'ble President of India inaugurates the National pulse polio round every year and the Union Health Minister provides continuous leadership. 24 lakh volunteer participate in the campaign and 1.5 lakh supervisors monitor activity. More than 17.2 crores children are targeted for vaccination in the National pulse polio round in one go.
- **Assured financial resources** Strong commitment to eradicate polio translated into assured allocation of financial resources. Govt. of India has not allowed the programme

to suffer for want of financial resources.

- **Continuous Innovation** India took a lead in introducing bivalent polio vaccine in January 2010. Earlier, it had similarly introduced monovalent Oral Polio Vaccine-1 (mOPV-1) in 2005.
- **Quality of pulse polio rounds** has dramatically improved and the coverage of children has been 99%. This level of coverage is unprecedented and is not witnessed elsewhere in the world
- A highly **innovative communication strategy** to dispel fears, overcome resistance and refusal and elicit community participation with active involvement of religious leaders, opinion makers and civil society implemented vigorously.
- **Effective partnership** between Government of India, WHO, UNICEF and States Governments, progressively strengthened have been a hallmark of Pulse Polio Programme.
- Mobile and migrant populations were specifically targeted to reach every child.
- India is mindful of the risks that persist, both on account of indigenous transmission and importation. **An Emergency Preparedness and Response Plan (EPRP)** has been put in place under which Rapid Response Teams (RRT) are being setup in every state to identify high risk pockets for timely action.
- **International Border vaccination** is being provided round the clock. These are provided through special booths set up at the international borders that India shares with Pakistan, Bangladesh, Nepal and Myanmar.

Current Risks and Challenges to Polio Eradication in India

- **Importation:** Risk of importation of virus from the neighboring countries.
- **Surveillance gaps:** if not maintained and sustained.
- **Population immunity:** The population immunity needs to be maintained in order to mitigate the risk of importation. To maintain the population immunity, high quality of polio campaigns are carried out.

Annexure I

COVERAGE SURVEY				
Full Immunization for the children of age group 12-23 months				
Sl. No.	State/UTs/India	DLHS3 (2007-08)	CES (2009)	AHS (2010-11)
1	A & N Islands	83.6		
2	Andhra Pradesh	66.7	68.0	
3	Arunachal Pradesh	13.3	24.8	
4	Assam	50.7	59.1	59
5	Bihar	41.4	49.0	64.5
6	Chandigarh	73.0		
7	Chhattisgarh	59.3	57.3	74.1
8	D & N H	57.9		
9	Daman & Diu	85.7		
10	Delhi	67.3	71.5	
11	Goa	89.8	87.9	
12	Gujarat	54.8	56.6	
13	Haryana	59.6	71.7	
14	Himachal Pradesh	82.2	75.8	
15	Jammu & Kashmir	62.2	66.6	
16	Jharkhand	54.0	59.7	63.7
17	Karnataka	76.7	78.0	
18	Kerala	79.6	81.5	
19	Lakshadweep	86.2		
20	Madhya Pradesh	36.0	42.9	54.9
21	Maharashtra	69.0	78.6	
22	Manipur	47.4	51.9	
23	Meghalaya	33.1	60.8	
24	Mizoram	54.2	73.7	
25	Nagaland*		27.8	
26	Orissa	62.3	59.5	55
27	Pondicherry	80.2		
28	Punjab	79.8	83.6	
29	Rajasthan	48.7	53.8	70.8

30	Sikkim	76.8	85.3	
31	Tamil Nadu	81.6	77.3	
32	Tripura	38.2	66.0	
33	Uttar Pradesh	30.2	40.9	45.3
34	Uttarakhand	62.9	71.5	75.4
35	West Bengal	75.7	64.9	
	INDIA	53.5	61.0	

Table 4

AHS (2010-11) 9 States Data-Round-I							
	BCG	OPV 3	DPT3	Measles	FI	Birth dose Polio	No Immunization
MP	94.2	69.4	66.6	80.7	54.9	83	4.3
UP	83.4	58.5	55.9	60.5	45.3	65	8.6
Jharkhand	91.8	77.5	71.8	79	63.7	70.8	3.9
UK	91.9	83.2	83	82.6	75.4	75.8	5.8
Chhattisgarh	96.8	82.3	81.6	87.9	74.1	86.1	2.3
Bihar	93.9	79.9	78.7	75.7	64.5	62.7	2.9
Assam	93.3	75.5	72.2	77.3	59	75.2	3.3
Odisha	97.5	74.7	72.9	86.7	55	76.9	0.9
Rajasthan	90.6	78.1	77	81.8	70.8	74.9	5.9

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