

Child Health Programme

4.1 INTRODUCTION

The Child Health programme under the Reproductive, Maternal, Newborn, Child and Adolescent (RMNCH+A) Strategy of the National Health Mission (NHM) comprehensively integrates interventions that improve child health and nutrition status and addresses factors contributing to neonatal, infant, under-five mortality and malnutrition. The National Population Policy (NPP) 2000, the National Health Policy 2002, Twelfth Five Year Plan (2007-12), National Health Mission (NRHM - 2005 – 2017), Sustainable Development Goals (2016-2030) and New National Health Policy, 2017 have laid down the goals for Child Health.

Child Health Goals under NHP-2025 and SDG-2030

Child Health Indicator	Current status	NHP 2025	SDG 2030
Neonatal Mortality rate	24	16 by 2025	<12
Infant Mortality Rate	34	28 by 2019	-
Under 5Mortality Rate	39	23 by 2025	≤25

Source: Sample Registration System (SRS) 2016

4.2 CHILD MORTALITY

4.2.1 Situation of Child Mortality in India

- As per latest Sample Registration System, 2016 Report; the Under Five Mortality Rate in India is 39/1000 live births, Infant Mortality Rate is 34/1000 live births and Neonatal Mortality Rate is 24/1000 live births. This translates into an estimated 9.6 lakh under-5 child deaths annually.
- The U5MR has declined at a faster pace in the period 2008-2016, registering a compound annual decline of 6.7% per year, compared to 3.3% compound annual decline observed over 1990-2007.

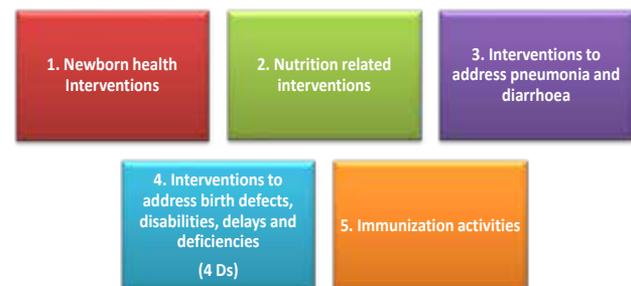
- Four States together contribute to 56% of all child deaths in the country, namely-Uttar Pradesh (2.45 lakhs), Bihar (1.2 lakhs), Madhya Pradesh (1.0 lakh) and Rajasthan (0.75 lakh).
- About 46% of under-five deaths take place within the first 7 days of birth, 62% within first one month of birth.

4.2.2 Causes of Child Mortality in India

- The major causes of child mortality in India as per the SRS reports (2010-13) are: Prematurity & low birth weight (29.8%), pneumonia (17.1%), diarrhoeal diseases (8.6%), other non-communicable diseases (8.3%), birth asphyxia & birth trauma (8.2%), injuries (4.6%), congenital anomalies (4.4%), ill-defined or cause unknown (4.4%), acute bacterial sepsis and severe infections (3.6%), fever of unknown origin (2.5%) & all other remaining causes continue 8.4% of the total child mortality.
- Besides these, malnutrition is a contributory factor in 45% child deaths.

4.2.3 Interventions under Child Health

Based on the identified causes of mortality, five major strategic areas have been identified to improve child health outcomes. These are:

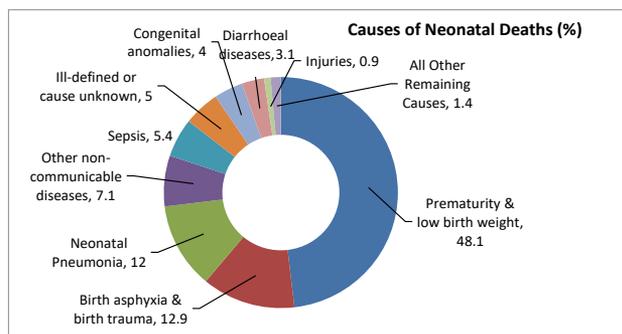


Besides the above mentioned, maternal health and family planning interventions are also linked inextricably to child health outcomes. Therefore, the

RMNCH+A strategic approach strategizes continuum of care across life stages of the over-arching umbrella under which these child health interventions have been built in.

4.3 NEWBORN HEALTH

- The Newborn Mortality Rate in India is 24/1000 live births (SRS 2015) which translates into approximately 6.3 lakhs deaths, annually.
- Newborn deaths contribute to 61% of the Under-5 deaths in the country.



4.3.1 India Newborn Action Plan (INAP) was launched in 2014 to make concerted efforts towards attainment of the goals of “Single Digit Neonatal Mortality Rate” and “Single Digit Still Birth Rate”, by 2030.

- Strategic interventions under newborn health are as under:
 - **Promotion of Institutional Deliveries and Essential Newborn Care:** Since antenatal and intra-partum events have a bearing on newborn health, institutional deliveries are being promoted with cash incentives in the form of Janani Suraksha Yojana (JSY). Newborn Care Corners (NBCCs) have been operationalized at delivery points to provide essential newborn care at the time of birth. In order to reduce out of pocket expenses, Janani Shishu Swasthya Karyakram (JSSK) entitlements have been provided to ensure cashless diagnosis and treatment of pregnant woman and her child till one year of age in public health facilities. This also includes free referral transport.
 - **Home Based Newborn Care (HBNC)** is for promotion of essential newborn care including breastfeeding practices, early identification and referral of neonatal illnesses by ASHAs. They are paid an incentive for visiting each newborn and post-partum mother in the first six weeks of life as per the defined schedule. More than 1.1 crore newborns were visited by ASHA in 2016-17 whereas, around 50 lakh newborns were visited during April-September, 2017.
 - **Facility Based Newborn Care (FBNC)** is being scaled up for care of small or sick newborns. 712 Special Newborn Care Units (SNCUs) have been set up in district hospitals and medical colleges to provide round the clock services for sick newborns. More than 8.5 lakh newborns are treated in the SNCUs each year. SNCU Online Reporting System has been established and more than 500 facilities are reporting online. 2,321 Newborn Stabilization Units (NBSUs) at the level of FRUs and 18,323 Newborn Care Corners (NBCCs) at delivery points have been operationalized in the continuum of care.
 - **Newer interventions to reduce newborn mortality** have also been implemented, including Vitamin K injection at birth, Antenatal corticosteroids in preterm labour, Kangaroo Mother Care (KMC) and empowering ANMs to provide injection Gentamycin to young infants for possible serious bacterial infection.
 - **Stillbirth Surveillance** is being rolled out. The guidelines for the same have been issued.

4.4 NUTRITION RELATED INTERVENTIONS

- Malnutrition is considered to be the underlying cause of 45% of child deaths.

- 35.7% of under-5 children are underweight, 38.4% are stunted and 21% are acutely malnourished (wasted). More importantly, 7.5% of children are suffering from severe acute malnutrition, as per the last available national survey (NFHS 4, 2015-16).
- Only 41.6% newborns initiated on breastfeeding within one hour of birth while, 54.9% children breastfed exclusively till 6 months of age (NFHS 4, 2015-16).
- Complementary feeding started for only 42.7% children on time (more than 6 months of age) (NFHS 4, 2015-16).
- 58.4% of children in age group 6 months-59 months are anaemic (NFHS 4, 2015-16).

The strategic nutrition related interventions are as under:

- **Promotion of Infant and Young Child feeding practices (IYCF):** Exclusive breastfeeding for first six months, complementary feeding beginning at six months and appropriate Infant and Young Child Feeding practices (IYCF) are being promoted. *Mother's Absolute Affection (MAA)* programme was launched in 2016 to promote breastfeeding and infant feeding practices by building the capacity of frontline health workers and comprehensive IEC campaign.



Inauguration of Vatsalya Maatri Amrit Kosh by Former Secretary(HFW) at LHMC New Delhi on 7th June, 2017

- **Establishment of Nutritional Rehabilitation Centres (NRCs):** 1148 NRCs have been set up at facility level to provide medical and nutritional care to Severe Acute Malnourished

(SAM) children under 5 years of age who are facing medical complications. In addition, the mothers are also imparted skills on child care and feeding practices so that the child continues to receive adequate care at home.

- **National Iron Plus Initiative (NIPI):** To address anaemia, NIPI has been launched which includes provision of supervised biweekly iron folic acid (IFA) supplementation by ASHA for all under-five children, weekly IFA supplementation for 5-10 year old children and annual/biannual deworming.
- **National Deworming Day (NDD):** Recognizing worm infestation as an important cause of anaemia, National Deworming Day (NDD) is being observed annually on 10th February, targeting all children in the age group of 1-19 years (both school enrolled and non-enrolled). A total of 50 crore children received Deworming tablet (Albendazole) during the National Deworming Day 2017 (February and August, 2017).



National Deworming Day 2017 at New Delhi on 9th February, 2017

- **Biannual Vitamin A Supplementation** is being done for all children below five years of age.
- **Village Health and Nutrition Days (VHNDs)** are also being organized for imparting nutritional counselling to mothers and to improve child care practices.

4.5 PNEUMONIA & DIARRHOEA RELATED INTERVENTIONS

- a. Pneumonia and diarrhoea are leading childhood killers- responsible for 15% and 12% of child

(0-5 years) deaths, respectively.

- b. As per available survey data, only 54.4% children with diarrhoea episode in preceding 2 weeks received ORS.
- c. As per available survey data, 8.6% children reportedly suffered from an episode of Acute Respiratory Illness in preceding two weeks and only 76.9% sought treatment for this.
- d. **Integrated Action Plan for Pneumonia and Diarrhoea (IAPPD)** has been formulated for four States with highest child mortality (UP, MP, Bihar and Rajasthan) to address the two biggest killers of children, viz. pneumonia and diarrhoea.
- e. The strategic interventions targeting pneumonia and diarrhoea are as below:
 - **Promotion of Integrated Management of Neonatal and Childhood Illnesses (IMNCI)** for early diagnosis and case management of common ailments of children with special emphasis on pneumonia, diarrhoea and malnutrition is being promoted for care of children at community as well as facility level.
 - **Promotion of early detection and prompt referral of children with common ailments like pneumonia and diarrhoea by ASHAs:** ASHAs are being trained in Modules 6 & 7 to aid them in identifying common childhood illnesses like diarrhoea, pneumonia and provide first level of care and refer baby to an appropriate health facility.
 - **Increase awareness about use of ORS and Zinc in diarrhoea:** In order to increase awareness about the use of ORS and Zinc in diarrhoea, an Intensified Diarrhoea Control Fortnight (IDCF) is being observed during July-August, with the ultimate aim of 'zero child deaths due to childhood diarrhoea'. During fortnight health workers visit the households of under five children, conduct community level awareness generation activities and

distribute ORS packets to the families with children under five years of age.

4.6 INTERVENTIONS TO ADDRESS BIRTH DEFECTS, DISEASES, DELAYS AND DEFICIENCIES

Birth defects account for 9.6% of all newborn deaths and 4% of under-five mortality.

Development delays affect at least 10% children and these delays if not intercepted timely may lead to permanent disabilities.

Rashtriya Bal Swasthya Karyakram (RBSK) provides child health screening and early interventions services by expanding the reach of mobile health teams at block level. These teams also carry out screening of all the children in the age group 0 – 6 years enrolled at Anganwadi Centres twice a year. RBSK covers 30 common health conditions. States/UTs may incorporate a few more conditions based on high prevalence/endemicity. An estimated 32.8 crore children in the age group of zero to eighteen years are expected to be covered in a phased manner.



Screening of children in healthcare facilities under Rashtriya Bal Swasthya Karyakram

The strategic interventions to address birth defects, diseases, delays and deficiencies are:

- **Screening of children under RBSK:** Child health screening and early intervention services with an aim to improve the overall quality of life of children through early detection of birth defects, diseases, deficiencies, development delays (4 Ds) and reduce out of pocket expenditure for the families. Dedicated mobile medical health teams (for screening purpose) have been set up at block level, comprising of four health personnel viz. two AYUSH doctors

(One Male, One Female), ANM/SN and a Pharmacist.

- Under this intervention, in 2016-17, 29.8 crore children were screened, 1.35 crore children identified with any of 4Ds, 98.9 lakh children were referred to secondary/tertiary facilities, 59.5 lakh children had availed services in secondary tertiary facilities.
- **During April-September, 2017**, more than 9 crore children were screened, 26.1 lakhs identified with any of 4D's, 43.6 lakhs children referred for 4D's and 29.8 lakhs children received secondary or tertiary treatment.
- **Establishment of District Early Intervention**

Centres (DEICs) to be made operational in the districts of the country for providing management of cases referred from the blocks and link these children with tertiary level health services in case surgical management is required. 92 DEICs have been established till date.

- **Birth Defects Surveillance System (BDSS)** is being established to serve as a tool for identifying congenital anomalies. It is a collaborative effort between the MoHFW, GoI, WHO and CDC. It is envisaged to establish at least one surveillance centre per State, preferably in a medical college. Currently, 55 medical colleges are a part of the Birth Defects Surveillance System.

Child Health Programme: At a Glance									
Sl. No.	State/UTs	U5MR (SRS 2016)	IMR (SRS 2016)	NMR (SRS 2016)	No. of SNCUs	No. of NBSUs	No. of NBCCs	No. of NRCs	No. of RBSK teams
A. Non-NE High Focus States									
1	Bihar	43	38	27	25	40	860	38	815
2	Chhattisgarh	49	39	26	13	16	289	72	302
3	Himachal Pradesh	27	25	16	13	34	124	5	70
4	Jammu & Kashmir	26	24	18	33	76	40	4	230
5	Jharkhand	33	29	21	15	42	594	87	158
6	Madhya Pradesh	55	47	32	54	101	1303	315	602
7	Odisha	50	44	32	30	49	1190	54	687
8	Rajasthan	45	41	28	36	304	1665	147	446
9	Uttar Pradesh	47	43	30	73	160	1820	74	1573
10	Uttarakhand	41	38	30	5	29	140	2	148
B. NE States									
11	Arunachal Pradesh	-	36	-	5	10	106	1	42
12	Assam	52	44	23	26	192	730	19	299
13	Manipur	-	11	-	1	2	47	0	36
14	Meghalaya	-	39	-	3	7	147	5	72
15	Mizoram	-	27	-	4	11	110	0	29
16	Nagaland	-	12	-	1	12	130	0	22
17	Sikkim	-	16	-	2	3	17	0	5
18	Tripura	-	24	-	2	0	131	0	22

Child Health Programme: At a Glance									
Sl. No.	State/UTs	U5MR (SRS 2016)	IMR (SRS 2016)	NMR (SRS 2016)	No. of SNCUs	No. of NBSUs	No. of NBCCs	No. of NRCs	No. of RBSK teams
C. Non High Focus States									
19	Andhra Pradesh	37	34	23	26	95	1232	18	0
20	Goa	-	8	-	3	0	10	0	15
21	Gujarat	33	30	21	40	150	910	139	835
22	Haryana	37	33	22	23	66	318	11	211
23	Karnataka	29	24	18	40	169	1301	57	402
24	Kerala	11	10	6	14	49	88	3	1095
25	Maharashtra	21	19	13	34	130	1845	35	1088
26	Punjab	24	21	13	15	56	208	0	258
27	Tamil Nadu	19	17	12	64	156	1761	2	666
28	Telangana	34	31	21	19	61	510	12	190
29	West Bengal	27	25	17	66	303	561	35	670
D. Union Territories									
30	A & N Islands	-	16	-	1	3	25	0	4
31	Chandigarh	-	14	-	3	2	23	1	13
32	Dadra & Nagar Haveli	-	17	-	1	1	7	1	4
33	Daman & Diu	-	19	-	1	0	6	0	3
34	Delhi	22	18	12	16	0	63	11	NA
35	Lakshadweep	-	19	-	1	0	8	0	NA
36	Puducherry	-	10	-	4	0	4	0	8
	India	39	34	24	712	2329	18323	1148	11020

4.7 UNIVERSAL IMMUNIZATION PROGRAMME (UIP)

- The Universal Immunization Programme (UIP) in India is one of the largest public health programmes in the world. **It targets 3 crore pregnant women and 2.67 crore newborn annually.** More than 9 million immunization sessions are conducted annually.
- It is one of the most cost effective public health interventions and largely responsible for reduction of vaccine preventable under-5 mortality rate.
- Launched in 1978 as expanded programme on immunization, it got its present name of

Universal Immunization Programme in 1985 when its reach was expanded beyond urban areas. In 1992, it became part of Child Survival and Safe Motherhood Programme and in 1997 it came under the ambit of National Reproductive and Child Health Programme. Since the launch of National Rural Health Mission in 2005, Universal Immunization Programme is an integral part of it.

- Under UIP, Government of India is providing vaccination free of cost against twelve vaccine preventable diseases, of which:**
 - 8 are provided across the country against Diphtheria, Pertussis, Tetanus, Polio, Measles, severe form of Childhood

Tuberculosis, Hepatitis B and Meningitis & Pneumonia caused by Hemophilus Influenza type B

➤ **4 are provided in selected States/ endemic districts** against Rota virus diarrhea, Rubella, Pneumococcal Pneumonia and Japanese Encephalitis; of which Rotavirus vaccine, Measles-Rubella vaccine and Pneumococcal Conjugate vaccine are in process of expansion while JE vaccine is provided only in endemic districts.

- A child needs 7 contacts till the age of 5 years to complete immunization due to him under Universal Immunization Programme. The detailed immunization schedule age-wise as well as vaccine-wise is given at Annexure-1 and Annexure-2 respectively.
- A child is said to be fully immunized if he/she receives all due vaccines as per national immunization schedule within 1st year of age of child.
- There are three main systems to measure full immunization coverage:
 1. Online web-based **Health Management Information System (HMIS)** portal wherein administrative coverage is being reported through health facilities across the country. As per HMIS data for 2016-17, the full immunization coverage of the country stands at 88.05%.
 2. **Periodic surveys** like National Family Health Survey (NFHS), District Level Household Survey (DLHS), Rapid Survey on Children (RSOC), Integrated Child Health and Immunization Survey (INCHIS) etc. As per the latest available survey, which is NFHS-4 conducted in 2015-16, the full immunization coverage in the country stands at 62%.
 3. **Concurrent monitoring** of the Universal Immunization Programme through session as well as community monitoring. As per concurrent monitoring

data, the full immunization coverage in the country stands at 79%.

- The trends in Full Immunization coverage (FIC) over the past years is as follows:

Survey	NFHS-3	DLHS-3	CES	RSOC	NFHS-4
Time	2005-06	2007-08	2009	2013-14	2015-16
FIC (%)	43.5	53.5	61.0	65.3	62.0

- A system of cold chain equipment is utilized to store vaccine and deliver the immunization services from fix centers or out-reach sessions utilizing the following infrastructure:
 - Sub-centres: around 1.5 lakhs,
 - Health facilities: approximately 29 thousand (Hospital, CHC, PHC etc.),
 - Cold Chain Points: around 27 thousand – vaccine storage point,
 - ILRs & Deep Freezers: around 72 thousand equipment to store vaccine,
 - District Vaccine Stores: around 666,
 - WIC & WIF: 269 – cold room to store vaccine.

4.7.1 Routine Immunization Strengthening

1. Mission Indradhanush

- To increase the rate of increase of full immunization coverage, Government of India launched Mission Indradhanush in December 2014 with an aim to increase the full immunization coverage to at least 90% by 2020, which has now been pre-poned to 2018.
- Mission Indradhanush is a targeted approach focused on pockets of low immunization coverage (like hard to reach areas, vacant sub-centres, areas with recent outbreaks of vaccine preventable diseases, resistance pockets etc.).
- Mission Indradhanush has completed four phases (from April 2015 to July 2017) covering 528 districts wherein:
 - 2.55 crore children were reached,

- 66.57 lakh children fully immunized,
- 68.79 lakh pregnant females immunized.
- The detailed phase-wise coverage of Mission Indradhanush is given at Annexure - 3.
- As per the report of Integrated Child Health and Immunization Survey (INCHIS), the first two phases of Mission Indradhanush have led to an increase of 6.7% in full immunization coverage in one year as compared to 1% increase/year in the past. This increase was more in rural areas (7.9%) as compared to urban areas (3.1%) thus shifting the focus of the programme towards urban areas.



Vaccination of children under Mission Indradhanush

2. Intensified Mission Indradhanush:

- During the review of Mission Indradhanush in PRAGATI meeting on 26th April 2017, directions were received to achieve the goal under the mission by December, 2018.
- Accordingly, MoHFW has identified 121 districts, 17 urban areas and 52 districts of NE States (total 190 districts/urban areas across 24 States) where Intensified Mission Indradhanush has started. The list of districts and urban areas is given at Annexure-4. It was launched by Hon'ble Prime Minister of India on 8th October, 2017 at Vadnagar, Gujarat.
- The activity is being monitored closely by Prime Minister of India and Cabinet Secretary.
- Intensified Mission Indradhanush will involve intensive preparation, implementation and integration of IMI sessions into RI microplans.



MoU with Rotary, India in presence of Hon'ble Health Minister Shri J.P. Nadda, AS&MD Shri Manoj Jhalani, JS Smt. Vandana Gurnani and Sr. Officers of Rotary



MoU with Rotary, India on 6th December 2017

- Focus is on urban slum areas and districts with slowest progress, completion of due-list of beneficiaries on the basis of head-count surveys & greater convergence with other ministries/ departments with defined roles.
- As on 15th January, 2018, under Intensified Mission Indradhanush:
 - No. of children vaccinated - 49.80 lakh
 - No. of children fully immunized - 12.02 lakh
 - No. of pregnant women vaccinated - 10.05 lakh

4.7.2 New Vaccines

a) Measles-Rubella (MR) vaccine

- WHO's regional goal for South-East Asia region is measles elimination and rubella/ Congenital Rubella Syndrome control by 2020.
- The goal of measles elimination was also reiterated by Hon'ble Union Minister of Finance during the budget speech of 2017-18 along with reduction in Under-5 Mortality.
- MR vaccine is being introduced through campaign, targeting around 41 crore children

in the age group of 9 months to 15 years in a phased manner (covering $\frac{1}{3}$ of the total population of the country), followed by 2 doses in routine immunization at 9-12 months and 16-24 months, replacing the measles vaccine.

- MR campaign started in February, 2017 from 5 States/UTs (Karnataka, Tamil Nadu, Goa, Lakshadweep and Puducherry), where 3.34 crore children were vaccinated against the target of 3.43 crore with a coverage of 97%.
- The next phase started for 8 States/UTs from August, 2017 namely Andhra Pradesh, Chandigarh, Daman & Diu, Dadra & Nagar Haveli, Telangana, Kerala, Himachal Pradesh & Uttarakhand where around 3.21 crore children have been vaccinated by December, 2017.

- The remaining States/UTs are planned for MR campaign subsequently.

Group of Secretaries (GoS) have also recommended for introduction of Rotavirus vaccine (RVV) and Pneumococcal Conjugate vaccine (PCV) for reduction in mortality and morbidity due to diarrhea and pneumonia. Further, the budget speech of Union Finance Minister for 2017-18 also mentions about reduction in under-five mortality rate. Accordingly, following two vaccines have been introduced in Universal Immunization Programme:

i) **Pneumococcal Vaccine (PCV)**

- PCV was launched in May, 2017 for reducing Infant mortality and morbidity caused by pneumococcal pneumonia.



National PCV launch on 13th May, 2017 in presence of Union Health Minister Shri J.P. Nadda

- The vaccine has been introduced in Himachal Pradesh, 6 districts of Uttar Pradesh and 17 districts of Bihar.
- Till December, 2017, around 11.20 lakh doses of PCV have been administered to children in the above mentioned areas.
- Presently, the vaccine has been introduced in 9 States, namely, Andhra Pradesh, Haryana, Himachal Pradesh, Odisha, Assam, Tripura, Rajasthan, Tamil Nadu & Madhya Pradesh through domestic funds.
- Till November, 2017, around 1.29 crore doses of Rotavirus vaccine have been administered to children in above mentioned States since its introduction.

ii) **Rotavirus vaccine (RVV)**

- RVV has been introduced to reduce mortality and morbidity caused by Rotavirus diarrhea.



Expansion of Rotavirus vaccine in Immunization Programme on 18th February, 2017

- In the next phase, Rotavirus vaccine will be introduced in Jharkhand.
- b) Inactivated Polio Vaccine (IPV)**
 - There are three types of Polio viruses namely type-1, 2 and 3 for which the vaccine was provided under Universal Immunization Programme as trivalent oral polio vaccine.
 - Since last case of wild polio virus type-2 was reported in 1999, therefore, Global Polio Eradication Initiative (GPEI) has recommended switch from trivalent OPV to bivalent OPV (containing only type-1 & 3).
 - The tOPV to bOPV switch happened in India on 25th April, 2016.
 - As part of Global Polio end-game strategy, to mitigate the risk associated with tOPV to bOPV switch, MoHFW has introduced Inactivated Polio Vaccine (IPV) in UIP in November, 2015, which was expanded across the country by June, 2016.
 - Currently, two dose fractional schedule is being followed in the country with vaccination at 6 weeks and 14 weeks of age.
 - Till December, 2017, around 3.45 crore doses of IPV have been administered to children across the country since its introduction.

4.7.3 Japanese Encephalitis (JE) vaccine

- Japanese Encephalitis (JE) vaccination under UIP was started in India in 2006.
- NVBDCP carries out Acute Encephalitis Syndrome (AES) surveillance including JE burden and based on this surveillance they identify endemic districts and communicate the same to immunization division which plays limited role of providing JE vaccination in these districts.
- **Campaign:** In the newly identified districts, one-time JE vaccination campaign is carried out in children aged 1-15 years to knock out the susceptible cohort.

- **Routine Immunization:** Subsequent to completion of the campaign, JE vaccine is introduced in Universal Immunization Programme as two doses provided at 9-12 months and 16-24 months.
- A total of 231 JE endemic districts have been identified of which JE vaccination campaign has been completed in 229 districts. A total of 15.16 crore children were vaccinated against JE in vaccination campaign carried out in these districts.
- **Adult JE vaccination:** Endemic districts are also identified by NVBDCP where high numbers of JE cases are reported in people aged 15-65 years. In these districts, one time campaign for JE vaccination is carried out in adults to knock out the susceptible cohort.
- Till August 2017, 31 districts have been identified for JE vaccination in adults in which the campaign activity has been completed. A total of 3.3 crore people aged 15-65 years were vaccinated for JE in these campaigns.

4.7.4 New Initiatives in Vaccine Logistics & Cold Chain Management

a) Capacity building

- National Cold Chain Training Centre (NCCTC), Pune and National Cold Chain & Vaccine Management Resource Centre (NCCVMRC), New Delhi have been established to provide technical training to cold chain technicians in repair & maintenance of cold chain equipment.

b) System strengthening

➤ **Electronic Vaccine Intelligence Network (eVIN) rollout :**

- The Government of India has rolled out an Electronic Vaccine Intelligence Network (eVIN) system that digitizes the entire vaccine stock management, their logistics and temperature tracking at all levels of vaccine storage – from national to the sub-district.
- This enables programme managers to have

real time view of the vaccine stock position and their storage temperature across all the cold chain points providing a detailed overview of the vaccine cold chain logistics system across the entire country.

- eVIN system has been rolled out across all the 370 districts in 12 States – UP, MP, Rajasthan, Odisha, Bihar, Jharkhand, Chhattisgarh, Assam, Manipur, Nagaland, Gujarat and Himachal Pradesh.

➤ **National Cold Chain Management Information System (NCCMIS)** to track the cold chain equipment inventory, availability and functionality.

➤ To augment the cold chain space & strengthen the cold chain system in the country, in 2017, 16 Walk in coolers (WICs), 6 Walk in freezers (WIFs), 13250 ILRs, 10567 DFs, 40 SDDs & 150 tool-kits have been procured & supplied to the States.

4.7.5 Adverse Events Following Immunization (AEFI) System

1. The AEFI surveillance programme of the Immunization Division was assessed by the WHO as part of the Indian National Regulatory Authority (NRA) Assessment in 2017. The pharmacovigilance function of NRA which includes vaccine safety and AEFI surveillance received the maximum possible maturity level rating of 4.
2. The AEFI surveillance programme has been quality certified for its national level processes as per National Quality Assurance Standards for AEFI Surveillance Programme. Scoping for State level implementation is in progress in two States.
3. Vaccine Adverse Event Management Information System (VAEMIS), the online reporting software for reporting severe and serious AEFI was developed in collaboration with WHO has been piloted in two States (MP and WB) and is being scaled across the country in the coming year.

4. State level training on revised AEFI guidelines is completed in most States and UTs except Tamil Nadu and few North-Eastern States. District level training for medical officer and health workers is completed in all major States and is in progress in remaining States.
5. Reporting of serious and severe AEFIs has significantly increased from 961 cases (April 2015 – March 2016) to about 1589 cases (April 2016 - March 2017).
6. As a step to further improve vaccine safety, the line-listing of minor AEFIs in PHC AEFI registers has been initiated in all States.
7. AEFI surveillance job aids for HWs and MOs have been developed in English and Hindi and shared with some States for dissemination. Some States e.g. Maharashtra, Gujarat, etc. have translated job aids in local languages too.
8. While 33 State AEFI committee meetings were conducted by 25 States in 2015-16, 48 State AEFI committee meeting were held in 27 States in 2016-17.
9. For the first time, four National AEFI Committee meetings were held in the 2016-17 as calendared and more than 783 AEFI cases were causally assessed and have been uploaded on the Ministry's website by December, 2017.
10. Three research studies were conducted by INCLIN and ITSU. These are (a) Inter-rater reliability of the WHO AEFI causality assessment methodology and the utility of the new WHO AEFI causality assessment software, (b) Multi-site Active AEFI Surveillance Study, (c) Factors affecting reporting of AEFI cases in the field.
11. To reduce mortality and morbidity due to anaphylaxis following vaccination, a policy has been approved wherein Health worker/ ANM is authorized to use a single injection of age appropriate Injection Adrenaline for management of suspected Anaphylaxis in field settings. Development of training plans and its operationalization with monitoring is underway.

4.8 PULSE POLIO IMMUNIZATION (PPI)

With the global initiative of eradication of polio following World Health Assembly resolution in 1988, Pulse Polio Immunization programme was launched in India in 1995. Children in the age group of 0-5 years were administered polio drops during National and Sub-national immunization rounds (in high risk areas) every year. There are 24 lakh vaccinators and 1.5 lakh supervisors involved in the successful implementation of the Pulse Polio Programme across the country. About 172 million children are immunized across the country during each National Immunization Day (NID) and 77 million in SNIDs.



Pulse Polio Immunization with Hon'ble President of India on 22nd January, 2017

4.8.1 Progress

On 24th February, 2012 WHO removed India from the list of countries with active endemic wild polio virus transmission after reporting of last case of poliovirus in country in January, 2011. Subsequently, on 27th March, 2014, India along with 10 other countries of South East Asia Region was declared polio-free by the Regional Certification Commission (RCC) of WHO. The issued certificate stated that “The Commission concludes, from the evidence provided by the National Certificate Committees of the 11 Member States, that the transmission of indigenous wild poliovirus has been interrupted in all countries of the Region”

India has maintained polio-free status as no wild poliovirus case has been reported for more than 6 years after last case reported on 13th January, 2011.

Last Reported Polio Case		
Polio Virus Type	Date of last case	Location
P1	13 January, 2011	Howrah (Panchla), West Bengal
P2	24 October, 1999	Aligarh, Uttar Pradesh
P3	22 October, 2010	Pakur (Pakur), Jharkhand

The total number of cases and number of affected districts during past 10 years is as below:

Year	Cases of Polio	Number of districts
2006	676	114
2007	874	99
2008	559	90
2009	741	56
2010	42	17
2011	01	01
2012	00	00
2013	00	00
2014	00	00
2015	00	00
2016	00	00
2017	00	00

As on 7th October 2017



Health workers in the field during Pulse Polio Campaign

4.8.2 Steps to maintain polio free status

To maintain the polio free status, country is implementing the following strategies:

- Maintaining community immunity through high quality of National and Sub National polio rounds each year, apart from routine immunization.
- Polio vaccination is provided to all eligible children round the clock through special booths set up at international borders (both Rail and Road routes) those shares with India i.e. Pakistan, Bangladesh, Bhutan, Nepal and Myanmar. In these border posts 1.15 crore children were vaccinated as on December, 2017.
- Travel advisory has been issued for Polio vaccination of international travelers travelling between India and 8 other countries i.e. Pakistan, Afghanistan, Nigeria, Kenya, Ethiopia, Somalia, Syria and Cameroon. Till November, 2017, more than 2.15 lakh travellers have been vaccinated with OPV.
- An Emergency Preparedness and Response Plan (EPRP) have been put in place under which Rapid Response Teams (RRT) are set up in every State/UTs for timely action in case of any occurrence of a polio case in the country.
- As a part of Polio Endgame Strategy, India has introduced Inactivated Polio Vaccine (IPV) across the country to provide double protection against polio.
- Strengthening Acute Flaccid Surveillance (AFP) across the country and Environmental Surveillance at Mumbai, Delhi, Patna, Kolkata,

Punjab, Hyderabad, Lucknow, West Bengal and Gujarat which acts as surrogate indicator for polio virus transmission.

- The lessons learnt from polio programme is being implemented for strengthening of routine immunization by carrying out Immunization weeks and also the same learnings are being used for implementing “Mission Indradhanush” and recently Intensified Mission Indradhanush—A drive toward 90% full immunization coverage of India by year 2018.

4.8.3 Vaccine Preventable Diseases (VPDs) Surveillance

Currently, the following surveillance systems are present in India for VPD surveillance:

Polio Surveillance:

- AFP (Acute Flaccid Paralysis) surveillance is the gold standard for detecting cases of poliomyelitis. This is done to identify all reservoirs of wild poliovirus and vaccine derived polio virus transmission. This includes reporting of all AFP cases, investigating them and laboratory testing of all stool specimens collected from such cases for polioviruses in specialized laboratories. Nearly 40,000 health facilities report children with paralysis to the AFP surveillance system and 50,000 paralysed children are investigated annually in the country.
- There are 8 WHO accredited laboratories in India for primary isolation of polio virus (wild poliovirus and vaccine derived polio virus), followed by Intratypic Differentiation (ITD) of isolates from AFP cases, if indicated.
- These laboratories are: BJMC Ahmedabad, NIV Bengaluru, ERC Mumbai, IoS Kolkata, NCDC Delhi, CRI Kasauli, KIPM Chennai, and SGPGI Lucknow.
- Currently, India is maintaining highest standards as indicated by AFP rate of 10.60 (against the global minimum recommendation of 2) and for total of 87% of AFP cases two stool collections

were done timely (against the global minimum recommendation of 80%) (data till 7th October, 2017).

- To supplement AFP surveillance, environmental surveillance is established at 35 sites spread over in 8 States.

Measles-Rubella (MR) Surveillance:

- The ‘suspected measles case with fever and rash’ surveillance was initiated in 2005 based on the AFP network, which has been existent in the country since 1995. This laboratory supported measles-rubella surveillance system was expanded across the country by 2015.
- At present, it is an outbreak based, aggregate surveillance and involves investigation of suspected outbreaks (not every suspected case) and generating case line-list through outbreak investigation. Active case search and case management is integrated as part of outbreak investigation. There are >40,000 reporting sites across the country in the reporting network, includes private sector, non-formal sector, temples in addition to government health facilities.
- MR Lab Network comprises 13 WHO accredited, AFP linked laboratories in the network, which classify outbreaks and cases based on serological confirmation. Annual accreditation of labs in the network is done by WHO to ensure quality results. The surveillance guidelines have been regularly revised, last in 2015, to increase the sensitivity of the system.
- Starting from 2016, country is moving to case based measles- rubella surveillance system in a phased manner.
- Summary of measles & rubella outbreaks in the country:

	Measles outbreak	Rubella outbreaks	Mixed outbreaks
2016	802	274	67
2017 (upto October, 2017)	436	115	15

- Congenital rubella syndrome (CRS) surveillance is being conducted by ICMR.

Laboratory supported vaccine preventable diseases (VPD) surveillance

- WHO is establishing a case based laboratory supported VPD surveillance system based on the operational knowledge acquired from AFP surveillance system in country which would be in collaboration with other surveillance systems like Integrated Disease Surveillance Programme (IDSP) and Central Bureau of Health Intelligence (CBHI).
- VPD surveillance started from three States (Haryana, Kerala and Bihar) in 2015 and has been rolled out in 4 more States, namely Uttar Pradesh, Madhya Pradesh, Himachal Pradesh & Punjab.
- WHO has established a national reference laboratory for standardization of laboratory procedures and quality assurance, identification

and strengthening of laboratories across nation for diagnosis of Diphtheria, Pertussis and Neonatal Tetanus.

- For this purpose CMC Vellore has been designated as reference laboratory for VPD surveillance. In addition, 6 network laboratories have been established. These are SPHL Chennai, KMC Kozhikode, KGMC Lucknow, IDH Delhi, NCDC Delhi and PGI Chandigarh.
- Integration of WHO and IDSP surveillance system is being done:
 - Information of cases is shared on weekly basis,
 - Lab reports are also shared,
 - Joint VPD outbreak investigations by WHO and IDSP,
 - Preparation of joint outbreak report for VPDs to be shared to both the systems.

National Immunization Schedule (Age-wise)

Age	Vaccines given
Birth	BCG, Oral Polio vaccine (OPV)-0 dose, Hepatitis B birth dose
6 Weeks	OPV-1, Pentavalent-1, Rotavirus vaccine (RVV)-1^ , fIPV-1, PCV-1#
10 weeks	OPV-2, Pentavalent-2, RVV-2^
14 weeks	OPV-3, Pentavalent-3, fIPV-2, RVV-3^ , PCV-2#
9-12 months	Measles-1 or MR-1\$, JE-1* , PCV-B#
16-24 months	Measles-2 or MR-2\$, JE-2*, DPT-Booster-1, OPV-Booster
5-6 years	DPT-Booster-2
10 years	TT
16 years	TT
Pregnant Mother	TT1, 2 or TT Booster**

- * In endemic districts only (at present in 216 out of 231 districts).
- ** One dose if previously vaccinated within 3 years.
- ^Rotavirus vaccine is provided in Andhra Pradesh, Haryana, Himachal Pradesh, Odisha, Assam, Madhya Pradesh, Rajasthan, Tamil Nadu & Tripura.
- \$ MR vaccine has been introduced in 13 States namely Karnataka, Tamil Nadu, Goa, Lakshadweep & Puducherry, Andhra Pradesh, Chandigarh, Daman & Diu, Dadra & Nagar Haveli, Telangana, Himachal Pradesh & Uttarakhand. Planned to cover entire country.
- # PCV in Himachal Pradesh and parts of UP & Bihar.
- Adult JE vaccination as one time vaccination to adults aged 15-65 years in 31 endemic districts of Assam, West Bengal & UP.

■ *Being introduced/scaled up.*

Annexure-2

National Immunization Schedule (NIS) for Infants, Children and Pregnant Women (Vaccine-wise)

Vaccine	When to give	Dose	Route	Site
For Pregnant Women				
TT-1	Early in pregnancy	0.5 ml	Intra-muscular	Upper Arm
TT-2	4 weeks after TT-1*	0.5 ml	Intra-muscular	Upper Arm
TT- Booster	If received 2 TT doses in a pregnancy within the last 3 yrs*	0.5 ml	Intra-muscular	Upper Arm
For Infants				
BCG	At birth or as early as possible till one year of age	0.1ml (0.05ml until 1 month age)	Intra-dermal	Left Upper Arm
Hepatitis B - Birth dose	At birth or as early as possible within 24 hours	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
OPV-0	At birth or as early as possible within the first 15 days	2 drops	Oral	Oral
OPV 1, 2 & 3	At 6 weeks, 10 weeks & 14 weeks (OPV can be given till 5 years of age)	2 drops	Oral	Oral
Pentavalent 1, 2 & 3	At 6 weeks, 10 weeks & 14 weeks (can be given till one year of age)	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Pneumococcal Conjugate Vaccine (PCV)^	Two primary doses at 6 weeks and 14 weeks. Booster dose at 9-12 months of age.	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Rotavirus [#]	At 6 weeks, 10 weeks & 14 weeks (can be given till one year of age)	3	Oral	Oral
IPV	Two fractional dose at 6 and 14 weeks of age	0.1 ml ID	Intra dermal two fractional dose	Intra-dermal: Right upper arm
Measles 1 st dose / MR 1 st dose	9 completed months-12 months. (Measles can be given till 5 years of age)	0.5 ml	Sub-cutaneous	Right upper Arm
JE - 1**	9 completed months-12 months.	0.5 ml	Sub-cutaneous	Left upper Arm
Vitamin A (1 st dose)	At 9 completed months with measles-Rubella	1 ml (1 lakh IU)	Oral	Oral
For Children				
DPT booster-1	16-24 months	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Measles 2 nd dose / MR 2 nd dose	16-24 months	0.5 ml	Sub-cutaneous	Right upper Arm
OPV Booster	16-24 months	2 drops	Oral	Oral

JE-2	16-24 months	0.5 ml	Sub-cutaneous	Left Upper Arm
Vitamin A*** (2 nd to 9 th dose)	16-18 months. Then one dose every 6 months up to the age of 5 years.	2 ml (2 lakh IU)	Oral	Oral
DPT Booster-2	5-6 years	0.5 ml.	Intra-muscular	Upper Arm
TT	10 years & 16 years	0.5 ml	Intra-muscular	Upper Arm

- *Give TT-2 or Booster doses before 36 weeks of pregnancy. However, give these even if more than 36 weeks have passed. Give TT to a woman in labour, if she has not previously received TT.
- **JE Vaccine is introduced in 229 endemic districts after the campaign.
- *** The 2nd to 9th doses of Vitamin A can be administered to children 1-5 years old during biannual rounds, in collaboration with ICDS.
- #Phased introduction, at present in Andhra Pradesh, Haryana, Himachal Pradesh, Odisha, Madhya Pradesh, Assam, Rajasthan, Tripura and Tamil Nadu.
- ^PCV vaccine in Himachal Pradesh and select districts of UP and Bihar.
- MR vaccine has been introduced in 13 States/UTs.

Annexure-3

Mission Indradhanush Cumulative Coverage Report
(As on 15th January, 2018)

(Figures in lakhs)

S. No	Indicator	Ph-1	Ph-2	Ph-3	Ph-4	IMI*	Total
1	No. of sessions held	9.61	11.55	7.44	6.3	5.01	39.91
2	No. of antigen administered	190.09	172.84	151.56	118.46	132.13	765.08
3	No. of pregnant women immunized	20.95	16.83	17.83	13.18	10.05	78.84
4	No. of pregnant women completely immunized	11.13	8.94	9.56	7.13	5.65	42.41
5	No. of children immunized	75.75	70.3	62.08	46.65	49.80	304.58
6	No. of children fully immunized	19.81	18.17	16.34	12.25	12.02	78.59
7	No. of children vaccinated for the first time	NA	9.31	12.06	6.84	7.38	35.59
8	No. of Vit A doses administered	19.85	20.53	17.98	15.13	15.76	89.25
9	No. of ORS packets distributed	16.93	13.62	21.38	16.64	9.71	78.28
10	No. of zinc tablets distributed	57.03	44.85	80.7	52.1	33.91	268.59

* Data is provisional

List of districts and urban areas identified for Intensified Mission Indradhanush

A. List of Districts identified in States other than NE States

Sl. No.	State	No. of Districts	Name of Districts	
1	Andhra Pradesh	2	East Godavari	Nellore
2	Bihar	15	Champan East	Darbhanga
			Champan West	Madhubani
			Muzaffarpur	Sheohar
			Kishanganj	Gaya
			Sitamarhi	Araria
			Saran	Nawada
			Lakhisarai	Katihar
			Sheikhpura	
3	Delhi	3	North	South-East
			Shahdara	-
4	Gujarat	3	Banaskantha	Bhavnagar
			Kutch	-
5	Haryana	3	Mewat	Palwal
			Faridabad	-
6	Jammu & Kashmir	1	Jammu	-
7	Jharkhand	2	Giridih	Pakur
8	Karnataka	3	Yadgir	Kalburgi
			Bagalkote	-
9	Kerala	1	Malappuram	-
10	Madhya Pradesh	13	Tikamgarh	Jhabua
			Chhatarpur	Vidisha
			Sagar	Sidhi
			Rewa	Panna
			Raisen	Shadol
			Singrauli	Sheopur
			Alirajpur	
11	Maharashtra	9	Nasik	Beed
			Ahmednagar	Solapur
			Nanded	Yavatmal
			Jalgaon	Gadchiroli
			Nandurbar	-
12	Odisha	1	Ganjam	-

13	Rajasthan	11	Alwar	Jalor
			Barmer	Karauli
			Partapgarh	Udaipur
			Jodhpur	Sawai Madhopur
			Bikaner	Dhaulpur
			Pali	-
14	Uttar Pradesh	52	Bahraich	Unnao
			Sitapur	Shahjahanpur
			Moradabad	Kaushambi
			Badaun	Banda
			Hardoi	Farrukhabad
			Gonda	Gorakhpur
			Barabanki	Mau
			Jaunpur	Kannauj
			Azamgarh	Sant Kabir Nagar
			Muzaffarnagar	Deoria
			Balrampur	Raebareli
			Kheri	Rampur
			Aligarh	Mirzapur
			Siddharthnagar	Srawasti
			Mathura	Kasganj
			Ghazipur	Sonbhadra
			Kushinagar	Ferozabad
			Sultanpur	Etah
			Ballia	Mainpuri
			Pratapgarh	Ambedkar Nagar
Maharajganj	Badohi			
Bulandshahar	Lalitpur			
Bijnor	Auraiya			
Fatehpur	Chitrakoot			
Basti	Sambhal			
Saharanpur	Hapur			
15	Uttarakhand	1	Hardwar	-
16	West Bengal	1	24-Parganas North	-
Total		121		

B. List of Urban Areas identified:

Sl. No.	State	No. of Urban Areas	Name of Urban Areas	
1	Bihar	1	Patna	-
2	Haryana	1	Gurgaon	-
3	Karnataka	2	Belgaum	Bengaluru (U)
4	Madhya Pradesh	1	Indore	-
5	Maharashtra	2	Thane	Gr. Mumbai
6	Odisha	1	Bhubaneswar Urban (Khurda)	-
7	Rajasthan	1	Jaipur	-
8	Uttar Pradesh	8	Allahabad	Meerut
			Bareilly	Lucknow
			Ghaziabad	Kanpur(Nagar)
			Agra	Varanasi
Total		17		

C. List of Districts in NE States

Sl. No.	State	No. of Districts	Name of Districts	
1	Arunachal Pradesh	13	Anjaw	Papum Pare
			Changlang	Tirap
			East Kameng	Upper Siang
			East Siang	Upper Subansiri
			Lohit	Kurung Kumey
			Namsai	Kra Daadi
			Longding	-
2	Assam	7	Nagaon	Karbi Anglong
			Dhubri	Kokrajhar
			Goalpara	Chirang
			Darrang	-
3	Manipur	4	Chandel	Tamenglong
			Churachandpur	Ukhrul
4	Meghalaya	7	West Garo Hills	West Jaintia Hills
			South-west Garo Hills	South-west Khasi Hills
			East Khasi Hills	North Garo Hills
			East Jaintia Hills	-

5	Mizoram	3	Lawngtlai	Mamit
			Lunglei	-
6	Nagaland	11	Dimapur	Phek
			Kohima	Peren
			Kiphire	Tuensang
			Longleng	Wokha
			Mokokchung	Zunheboto
			Mon	-
7	Sikkim	2	East	West
8	Tripura	5	Dhalai	Unakoti
			North Tripura	West Tripura
			South Tripura	-
Total		52		

