

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-2017 and SDG-2030			
Child Health Indicator	Current status	NHP 2017	SDG 2030
Neonatal Mortality Rate (NMR)	24	16 by 2025	<12
Infant Mortality Rate (IMR)	34	28 by 2019	-
Under 5 Mortality Rate (U5MR)	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 U5MR in India is 39/1000 live births, IMR is 34/1000 live births and NMR 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 (8.4%).

- Beside these causes, 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:



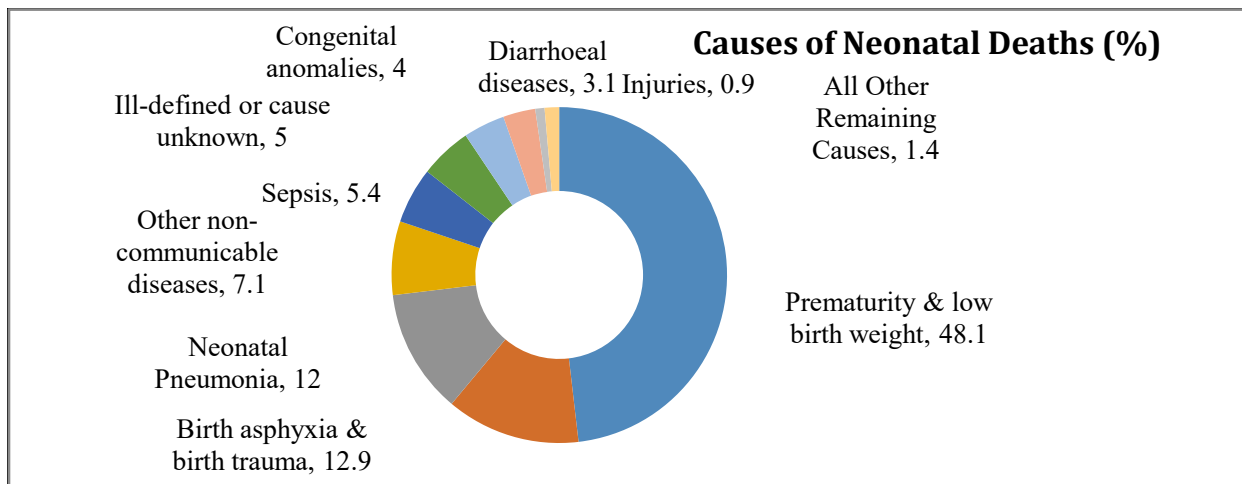
Besides, the maternal health and family planning interventions are also linked inextricably to child health outcomes. Therefore, the RMNCH+A strategic approach of continuum of care across life stages is the over-arching umbrella under which these child health interventions have been built in.

4.3 NEWBORN HEALTH

- The Newborn Mortality Rate in India is 24/1000 live births (SRS 2016) which

translates into approximately 5.9 lakhs deaths, annually.

- Newborn deaths contribute to 61% of the Under-5 deaths in the country.
- The major causes of newborn deaths in India are: Prematurity & LBW (48%), Birth Asphyxia and Trauma (13%), Pneumonia (12%), Sepsis (5.4%), Congenital anomalies (4%) and Diarrhoea (3%).



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 and Home Based Care of Young Children (HBNC/ HBYC)-** One third of under-five child deaths are due to preventable causes such as diarrhoea, pneumonia and measles. Nearly 35% of child mortality is attributable to undernutrition. It also poses irreversible hindrance to children’s cognitive development and physical growth while increasing their susceptibility to childhood infections.

Considering the importance of diarrhoea, pneumonia, under nutrition and the importance of WASH related interventions on overall child survival and development, HBYC Program was launched in April, 2018 by Hon’ble Prime Minister.

The objective of HBYC is to reduce child

mortality and morbidity and improve nutrition status, growth and early childhood development of young children through structured, focused and effective home visits by ASHAs.

Additional five home visits will be carried out by ASHAs (3rd, 6th, 9th, 12th and 15th months) under the HBYC program with the support of Anganwadi Workers to ensure exclusive and continued breast feeding, adequate complementary feeding, age appropriate immunization and early childhood development. They are being 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 1Crore newborns were visited by ASHA each year. More than 1.09 crore newborns were visited during 2018-2019.

➤ **Facility Based Newborn Care (FBNC)** - is being scaled up for care of small or sick newborns. 794 Special Newborn Care Units (SNCUs) have been setup 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 700 facilities are reporting online. 2,466 Newborn Stabilization Units (NBSUs) at the level of FRUs and 18,570 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 and empowering ANMs to provide Injection Gentamycin to young infants for possible serious bacterial infection.

- **Still-birth Surveillance** is being rolled out. The guidelines for the same have been released.

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 21.0% 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 to 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.
 - **Establishment of Nutritional Rehabilitation Centres (NRCs)**- 1152 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 have 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.
 - **Anaemia Mukht Bharat (AMB)**- To address anaemia, NIPI has been launched which includes provision of supervised bi-weekly Iron Folic Acid (IFA) supplementation by ASHA for all under-five children, weekly IFA supplementation for 5-10 years old children and annual/biannual De-worming. The AMB strategy- Intensified Iron Plus Initiative aims to strengthen the existing mechanisms and foster newer strategies of tackle anaemia, focused on six target beneficiary groups, through six interventions and six institutional mechanisms; to achieve the envisaged target under the POSHAN Abhiyaan. The operational guidelines of the strategy were released by Hon'ble Prime Minister on 14th April, 2018 in Chhattisgarh. The strategy focuses on testing & treatment of anaemia in school going adolescents & pregnant women using newer technologies, establishing institutional mechanisms for advanced research in anaemia, and a comprehensive communication strategy including mass/mid media communication material (Radio spots, TVCs, posters, job-aids, IPC materials, etc).



- **National De-worming Day (NDD)**- Recognising 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 44.54 crore De-worming tablets (Albendazole) distributed to children aged 1-19 years during the National Deworming Day 2018-19 (August, 2018 and February, 2019).





- **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

Pneumonia and diarrhoea are leading childhood killers, responsible for 15% and 12% of child (0-5 years) deaths, respectively.

As per available survey data, only 54.4% children with diarrhoea episode in preceding 2 weeks received ORS.

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.

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, namely- pneumonia and diarrhoea.

The strategic interventions targeting pneumonia and diarrhoea are as below:

- a) **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.

- b) **Promotion of early detection and prompt referral of children with common ailments like pneumonia and diarrhoea by ASHA-** 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.
- c) **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 observed during July-August, with the ultimate aim of 'zero child deaths due to childhood diarrhoea'. During the 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. More than 8.75 crore ORS packets were distributed during IDCF 2018 round (2018-19).

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

RBSK provides child health screening and early interventions services by expanding the reach of dedicated 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 and 6-18 years at Government school and Government aided schools once a year. RBSK covers 30 common health conditions including screening, confirmation and management. These conditions were selected based not only on the magnitude of the problem, but also the critical role they play in the development of the child in their formative years especially their cognitive development. Some of these conditions are extremely difficult to treat especially among preverbal children, in terms of overall capacity, logistics and cost, but such challenges under

RBSK were accepted consciously in spite of the limitation of health delivery system. An estimated 32.8 Crore children in the age group of 0-18 years are expected to be covered in a phased manner. RBSK also provides screening of all newborns at all the delivery points for birth defects. RBSK provides Early Intervention Centre at all districts to prevent or minimise disability.

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

- **Screening of children under RBSK-** Child health screening and early intervention services are provided 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) at block level, comprising of two AYUSH doctors (One Male, One Female), ANM/ Staff Nurse, and a Pharmacist are provided. In 2018-19, 11,576 mobile health teams are in place.
- 19.3 crore children screened in 2018-19 under RBSK of whom 5.63 crore were in 0-3 yrs age group and 1.35 crore children had some important problem in 4 Ds, 53 lakhs received treatment at Tertiary level. In 2018-2019, 51,792 children were screened and confirmed with congenital heart disease across the country out of whom 39,186 children have been managed.
- In 2018-2019, 11,399 children screened and confirmed with congenital deafness across the country. 6,801 children have been managed.
- In 2018-2019, 15,052 children screened and confirmed with Club foot across the country out of whom 11,347 children have been managed.
- In 2018-2019, 13,310 children screened and confirmed with Cleft lip/palate across the

country out of whom 9,009 children have been managed.

- In 2018-2019, 4,093 children screened and confirmed with Congenital cataract across the country out of whom 3,099 children have been managed.
- **Establishment of District Early Intervention Centres (DEICs)**- DEICs are to be made operational in the districts to manage cases referred from the blocks and also to link these children with tertiary level health services, if surgical management is required. In the year 2018-19, 92 DEICs were functional in the country. Further, in

the year 2018-19, 162 new DEICs were made operational.

- **Birth Defects Surveillance System (BDSS) is being established** - to serve as a tool for identifying congenital anomalies. It is a collaborative effort between MoHFW, WHO and CDC. It is envisaged to establish at least one surveillance centre per State, preferably in Medical Colleges. Currently, 55 Medical Colleges are part of the birth defects surveillance.
- State wise facts sheet of Child Health is given below:

Child Health Indicators /Interventions: At a Glance

Sr. No.	State/UTs	ENMR (SRS 2016)	NMR (SRS 2016)	IMR (SRS 2016)	U5MR (SRS 2016)	No. of SNCUs	No. of NBSUs	No. of NBCCs	No. of NRCs	No. of DEIC in position
1	Bihar	21	27	38	43	40	40	860	38	9
2	Chhattisgarh	21	26	39	49	17	153	289	72	6
3	Himachal Pradesh	10	16	25	27	13	34	124	5	0
4	Jammu & Kashmir	15	18	24	26	27	76	281	4	15
5	Jharkhand	17	21	29	33	19	42	594	87	0
6	Madhya Pradesh	24	32	47	55	54	101	1303	315	22
7	Odisha	24	32	44	50	33	49	1190	54	26
8	Rajasthan	22	28	41	45	57	304	1665	147	12
9	Uttar Pradesh	23	30	43	47	78	160	1820	74	2
10	Uttarakhand	24	30	38	41	5	29	140	2	4
11	Arunachal Pradesh	-	-	36	-	5	10	112	1	3
12	Assam	18	23	44	52	26	192	730	19	7
13	Manipur	-	-	11	-	2	2	47	0	0
14	Meghalaya	-	-	39	-	3	7	147	5	3
15	Mizoram	-	-	27	-	4	11	110	1	2
16	Nagaland	-	-	12	-	2	12	130	1	0
17	Sikkim	-	-	16	-	2	3	17	0	1
18	Tripura	-	-	24	-	6	0	131	0	1

Child Health Indicators /Interventions: At a Glance

Sr. No.	State/UTs	ENMR (SRS 2016)	NMR (SRS 2016)	IMR (SRS 2016)	U5MR (SRS 2016)	No. of SNCUs	No. of NBSUs	No. of NBCCs	No. of NRCs	No. of DEIC in position
19	Andhra Pradesh	18	23	34	37	27	95	1232	18	16
20	Goa	-	-	8	-	3	0	10	0	10
21	Gujarat	16	21	30	33	41	150	910	139	2
22	Haryana	16	22	33	37	27	66	318	11	19
23	Karnataka	13	18	24	29	40	169	1301	57	21
24	Kerala	4	6	10	11	17	49	88	3	10
25	Maharashtra	11	13	19	21	40	130	1845	35	14
26	Punjab	9	13	21	24	24	56	208	0	8
27	Tamil Nadu	9	12	17	19	23	156	1761	2	5
28	Telangana	16	21	31	34	64	61	510	12	32
29	West Bengal	13	17	25	27	68	303	561	40	1
30	A & N Islands	-	-	16	-	1	3	25	0	0
31	Chandigarh	-	-	14	-	3	2	23	1	1
32	Dadra & Nagar Haveli	-	-	17	-	1	1	7	1	1
33	Daman & Diu	-	-	19	-	1	0	6	0	1
34	Delhi	9	12	18	22	16	0	63	8	0
35	Lakshadweep	-	-	19	-	1	0	8	0	0
36	Puducherry	-	-	10	-	4	0	4	0	0
	India	18	24	34	39	794	2466	18570	1152	254

4.7 UNIVERSAL IMMUNIZATION PROGRAMME (UIP)

- The UIP in India is one of the largest public health programmes in the world. It targets around 2.9 crore pregnant women and 2.67 crore newborn annually. More than 1.2 crore 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 an expanded programme of 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:
 - 9 are provided across the country against Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Hepatitis B and Meningitis & Pneumonia (caused by Hemophilus Influenza type B)
 - 3 are provided in selected States/ endemic districts against Rota virus diarrhea, Pneumococcal Pneumonia and Japanese Encephalitis; of which Rotavirus vaccine and Pneumococcal Conjugate Vaccine are in the 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/her under UIP. 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 the 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 2017- 18, the full immunization coverage of the country stands at 86.7%.
 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 UIP is conducted through session as well as community monitoring. As per concurrent monitoring data, the full immunization coverage in the country stands at 83%.
- 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 fixed centres or out-reach sessions utilizing the following infrastructure:
 - o Sub-centres: around 1.5 lakhs
 - o Cold Chain Points: around 30,000– vaccine storage points (Hospitals, CHCs, PHCs, Health facilities)– vaccine storage points
 - o ILRs & Deep Freezers: around 83,000 equipment to store vaccines
 - o District Vaccine Stores: around 736 vaccine stores

- o WIC & WIF: 258 – cold and freezer room to store vaccine at bulk storage locations.

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 was preponed 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 six phases (from April, 2015 to December, 2018) covering 554 districts wherein:
 - o 3.39 crore children were reached
 - o 81.79 lakh children fully immunized
 - o 87.18 lakh pregnant women 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.
- ##### 2. Intensified Mission Indradhanush
- During the review of Mission Indradhanush in Pro-Active Governance and Timely Implementation (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 North Eastern States (total 190 districts/urban areas across 24 States) where Intensified Mission Indradhanush (IMI) was conducted. It was launched by Hon'ble Prime Minister on 8th October, 2017 at Vadnagar, Gujarat
- The activity was monitored closely by Prime Minister of India and Cabinet Secretary
- IMI involved intensive preparation, implementation and integration of IMI sessions into Routine Immunization microplans
- Focus was 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

4.7.2 New Vaccines

i. 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 in

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%.

- MR campaign has been completed in 31 States (Karnataka, Tamil Nadu, Goa, Puducherry, Lakshadweep, Andhra Pradesh, Chandigarh, Daman & Diu, Dadra & Nagar Haveli, Telangana, Himachal Pradesh, Kerala, Uttarakhand, Odisha, Arunachal Pradesh, Manipur, Mizoram, Andaman & Nicobar, Punjab, Haryana, Gujarat, Nagaland, Assam, Tripura, Jammu & Kashmir, Jharkhand, Chhattisgarh, Uttar Pradesh, Maharashtra, Bihar and Madhya Pradesh) so far and ongoing in one State (Meghalaya), wherein 30.50 crore children were vaccinated against the target of 31.07 crore with a coverage of 98.18%.
- The remaining States/UTs are planned for MR campaign subsequently.

ii. **Pneumococcal Vaccine (PCV)**

- PCV was launched in May, 2017 for reducing infant mortality and morbidity caused by Pneumococcal Pneumonia.
- The vaccine has been introduced in Himachal Pradesh, Bihar, Madhya Pradesh, Haryana (State initiative), selected districts of Uttar Pradesh and Rajasthan.
- Till March, 2019, around 116.89 lakh doses of PCV have been administered to children in the above mentioned areas.

iii. **Rotavirus vaccine (RVV)**

- RVV has been introduced to reduce mortality and morbidity caused by Rotavirus diarrhea.
- Presently, the vaccine has been introduced in 11 States viz. Andhra Pradesh, Assam, Haryana, Himachal Pradesh, Madhya

Pradesh, Odisha, Tripura, Rajasthan, Tamil Nadu, Jharkhand and Uttar Pradesh through domestic funds.

- Till February, 2019, around 4.14 crore doses of Rotavirus vaccine have been administered to children in above mentioned States since its introduction.
- Rotavirus vaccine is being expanded to the entire country by end of the year 2019.

iv. **Inactivated Polio Vaccine (IPV)**

- There are three types of Polio viruses namely type-1, 2 and 3 for which the vaccine was provided under UIP as trivalent oral Polio vaccine.
 - Since last case of wild polio virus type-2 was reported in 1999, 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 March, 2019, around 8.89 crore doses of IPV have been administered to children across the country since its introduction.
- #### v. **Japanese Encephalitis (JE) vaccine**
- 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 knockout the susceptible cohort.
- Routine Immunization subsequent to completion of the campaign, JE vaccine is introduced in UIP as two doses provided at 9-12 months and 16-24 months.
- A total of 268 JE endemic districts have been identified of which JE vaccination campaign has been completed in 230 districts where 15.5 crore children were vaccinated against JE. 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, 35 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.

4.7.3 New Initiatives in Vaccine Logistics & Cold Chain Management

a) Capacity building

- National Cold Chain Resource Centre (NCCRC), 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. These centres also impart training to program managers on immunization supply chain system, capacity building, supportive supervision along with conducting various studies to evaluate the system which pave the ways for corrective measures.

b) System strengthening

• Electronic Vaccine Intelligence Network (eVIN) roll out :

- 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 level.
- 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 505 districts in 21 States – Uttar Pradesh, Madhya Pradesh, Rajasthan, Odisha, Bihar, Jharkhand, Chhattisgarh, Assam, Manipur, Nagaland, Gujarat, Himachal Pradesh, Maharashtra, Tripura, Karnataka, Andhra Pradesh, Uttarakhand, Telangana, Goa, Daman and Diu and D&H Haveli.

- **National Cold Chain Management Information System (NCCMIS)** to track the cold chain equipment availability, functional status, inventory and critical cold chain indicators.

- 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), 13,250 ILRs, 10,567 DFs, 40 SDDs & 150 tool-kits were procured & supplied to the States.

4.7.4 Adverse Events Following Immunization (AEFI) System

- a) The AEFI surveillance programme of the Immunization Division was assessed by the WHO as part of the National Regulatory Authority (NRA) Assessment in 2017. The pharmaco vigilance function of NRA which includes vaccine safety and AEFI surveillance received the maximum possible maturity level rating of 4.
- b) 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.
- c) 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.
- d) 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.
- e) Reporting of serious and severe AEFIs has significantly increased from 1521 cases in 2017-18 to 2979 cases in 2018-19.
- f) As a step to further improve vaccine safety, the line-listing of minor AEFIs in PHCs, AEFI registers has been initiated in all States.
- g) 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.
- h) While 40 State AEFI committee meetings were conducted by 25 States in 2017-18, 88 State AEFI committee meetings were held in 27 States in 2018-19.
- i) Four National AEFI Committee Meetings were held in both 2017-18 and 2018-19 and a total of 1491 causally assessed cases have been uploaded on MoHFW website by December, 2018.
- j) 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



Hon'ble President of India giving Polio drops to a child on Pulse Polio Day at Rashtrapati Bhavan, New Delhi



Hon'ble President of India meeting Hon'ble HFM, MoS and officers of MoHFW, Development Partners and other delegates on Pulse Polio Day at Rashtrapati Bhavan, New Delhi

are immunized across the country during each National Immunization Day (NID) and 77 million in SNIDs.

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 Polio virus 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 Polio virus has been interrupted in all countries of the Region”.

India has maintained Polio-free status as no wild Polio virus 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, West Bengal
P2	24 October, 1999	Aligarh, Uttar Pradesh
P3	22 October, 2010	Pakur, Jharkhand

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) i.e. Pakistan, Bangladesh, Bhutan, Nepal and Myanmar. In these border posts 1.32 crore children were vaccinated as on 31st March, 2019.

- Travel advisory has been issued for Polio vaccination of international travellers travelling between India and 8 other countries i.e. Pakistan, Afghanistan, Nigeria, Kenya, Ethiopia, Somalia, Syria and Cameroon. Till December, 2018, more than 2.72 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 States/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.
- Acute Flaccid Surveillance (AFP) and Environmental Surveillance across the country (which act as surrogate indicator for Polio virus transmission) are being strengthened at Mumbai, Delhi, Patna, Kolkata, Punjab, Hyderabad, Lucknow, West Bengal and Gujarat.
- The lessons learnt from Polio programme is being implemented for strength eningo frountine immunization by carrying out Immunization Weeks and also the same learnings are being used for implementing “Mission Indradhanush” and recently Intensified Mission Indradhanush.

4.8.3 Vaccine Preventable Diseases (VPDs) Surveillance

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

i. AFP (Acute Flaccid Paralysis) 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 AFP to the surveillance system. In 2018, 36,446 AFP cases were reported and in 2019 (till 27th April, 2019), 9,598 AFP cases were reported in the country.
- There are 8 WHO accredited laboratories in India for primary isolation of Polio virus (wild Poliovirus and vaccine derived Poliovirus), 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 6.64, Non-Polio AFP rate of 5.36 (against the global minimum recommendation of 2) and Stool adequacy rate (% with 2 stool specimens within 14 days) of 87% (data till 27th April, 2019).
- To supplement AFP surveillance, environmental surveillance is established at 51 sites spread over in 9 States.

ii. Measles-Rubella(MR) Surveillance:

- Suspected Measles case is defined as any person with fever and maculopapular rash (i.e. non-vesicular) and 3 Cs i.e. cough, coryza (i.e. runny nose) or conjunctivitis (i.e. red eyes).
- The laboratory supported Measles surveillance was initiated in 2005 based on

the AFP network, which has been prevalent in the country since 1995. All the suspected Measles are investigated under this system. This laboratory supported Measles-Rubella surveillance system was expanded across the country by 2015.

- At present, MR surveillance is modified outbreak based, which is defined as aggregate of 5 or more cases over a period of 28 days (4 weeks) in a block/planning unit. All such suspected outbreaks (not every suspected case) are investigated through Active Case Search and case line-list is generated through outbreak investigation. Further cases which do not aggregate to outbreak are also lab confirmed for MR. There are >40,000 reporting sites across the country in the reporting network, which includes private sector, non-formal sector, temples in addition to Government health facilities.
- MR Lab Network comprises of 19 WHO accredited, AFP linked laboratories which classify outbreaks and cases based on serological confirmation. Annual accreditation of labs in the network is done by WHO to ensure quality results.
- Summary of Measles & Rubella out breaks in the country:

	Measles out break	Rubella outbreaks	Mixed outbreaks
2016	802	274	67
2017	436	115	15
2018	931	120	14

- Congenital Rubella Syndrome (CRS) surveillance is being conducted by ICMR.

iii. 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 5 more States, namely Uttar Pradesh, Madhya Pradesh, Himachal Pradesh and Punjab, latest being Karnataka, where VPD Surveillance was rolled out in mid 2018. It is in the process of expansion to more States.
- WHO has established a national reference laboratory for standardization of laboratory procedure 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 undertaken for the following:-
 - o Information of cases is shared on weekly basis,
 - o Lab reports are also shared,
 - o Joint VPD outbreak investigations by WHO and IDSP,
 - o Preparation of joint outbreak report for VPD to be shared with both these systems.

Annexure - 1

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, <u>Rotavirus vaccine (RVV)-1</u> [^] , fIPV-1, <u>PCV-1</u> [#]
10 weeks	OPV-2, Pentavalent-2, <u>RVV-2</u> [^]
14 weeks	OPV-3, Pentavalent-3, fIPV-2, <u>RVV-3</u> [^] , <u>PCV-2</u> [#]
9-12 months	Measles-1 or <u>MR-1</u> , JE-1* , <u>PCV-B</u> [#]
16-24 months	Measles-2 or <u>MR-2</u> , JE-2*, DPT-Booster-1, OPV-Booster
5-6 years	DPT-Booster-2
10 years	Td
16 years	Td
Pregnant Mother	Td1, 2 or Td Booster**

- *In endemic districts only (at present in 231 districts).
- ** One dose if previously vaccinated within 3 years.
- [^] Rotavirus in selected States/districts: Andhra Pradesh, Assam, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Tamil Nadu, Tripura & Uttar Pradesh.
- [#] **PCV** in selected States/districts: Bihar, Himachal Pradesh, Madhya Pradesh, Haryana (State initiative), Uttar Pradesh (12 districts) & Rajasthan (9 districts).

Underlined Vaccine: Being introduced/scaled up

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

Vaccine	When to give	Dose	Route	Site
For Pregnant Women				
Tetanus Toxoid (TT)/ Tetanus & adult Diphtheria (Td)-1	Early in pregnancy	0.5 ml	Intra- muscular	Upper Arm
TT/Td-2	4 weeks after TT-1	0.5 ml	Intra- muscular	Upper Arm
TT/td- Booster	If received 2 TT doses in a pregnancy within the last 3 yrs*	0.5 ml	Intra- muscular	Upper Arm
For Infants				
Bacillus Calmette Guerin (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
Oral Polio Vaccine (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 and 14 weeks followed by Booster dose at 9-12 months.	0.5 ml	Intra- muscular	Antero-lateral side of mid-thigh
Rotavirus (RVV)^	At 6 weeks, 10 weeks & 14 weeks (can be given till one year of age)	3	Oral	Oral
Inactivated Polio Vaccine (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 Rubella (MR) 1st dose	9 completed months-12 months. (Measles can be given till 5 years of age)	0.5 ml	Sub-cutaneous	Right upper Arm
Japanese Encephalitis (JE) - 1^{**}	9 completed months-12 months.	0.5 ml	Sub-cutaneous	Left upper Arm
Vitamin A (1st dose)	At 9 completed months with Measles-Rubella	1 ml (1 lakh IU)	Oral	Oral
For Children				
Diphtheria, Pertussis & Tetanus (DPT) booster-1	16-24 months	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
MR 2nd 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 ^{***} (2nd to 9th 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/Td	10 years & 16 years	0.5 ml	Intra-muscular	Upper Arm

- *One dose if previously vaccinated within 3 years.
- **JE Vaccine is introduced in select 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.
- ^Rotavirus vaccine and PCV in selected States/districts as per details below:

Rotavirus: Andhra Pradesh, Assam, Haryana, Himachal Pradesh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Tamil Nadu, Tripura & Uttar Pradesh.

PCV: Bihar, Himachal Pradesh, Madhya Pradesh, Haryana (State initiative), Uttar Pradesh (12 districts) & Rajasthan (9 districts).

Mission Indradhanush (All Phases) Coverage Report(As on 12th April, 2019)

(Figures in lakhs)

Sl. No.	Indicator	Ph-1	Ph-2	Ph-3	Ph-4	IMI	MI-GSA*	MI-EGSA*	Ph-6	Total
1	No. of sessions held	9.61	11.55	7.44	6.30	6.04			0.97	41.91
2	No. of antigen administered	190.09	172.84	151.56	118.46	158.44			14.56	805.95
3	No. of pregnant women immunized	20.95	16.83	17.83	13.18	11.86	1.13	4.29	1.13	87.18
4	No. of pregnant women completely immunized	11.13	8.94	9.56	7.13	6.66			0.62	44.04
5	No. of children immunized	75.75	70.30	62.08	46.65	59.49	4.97	15.26	4.94	339.44
6	No. of children fully immunized	19.81	18.17	16.34	12.25	14.01			1.21	81.79
7	No. of children vaccinated for the first time	0.00	9.31	12.06	6.84	8.55			0.62	37.39
8	No. of Vit A doses administered	19.85	20.53	17.98	15.13	18.46			1.44	93.39
9	No. of ORS packets distributed	16.93	13.62	21.38	16.64	11.17			1.07	80.81
10	No. of zinc tablets distributed	57.03	44.85	80.70	52.10	39.18			0.84	274.70

*Data taken from GSA/EGSA Portal