3.1 Polio Eradication Programme, RNTCP (Tuberculosis), Universal Immunization Programme: Objective, Initiative and Achievement

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3.1 Polio Eradication Programme, RNTCP (Tuberculosis), Universal Immunization Programme: Objective, Initiative and Achievement

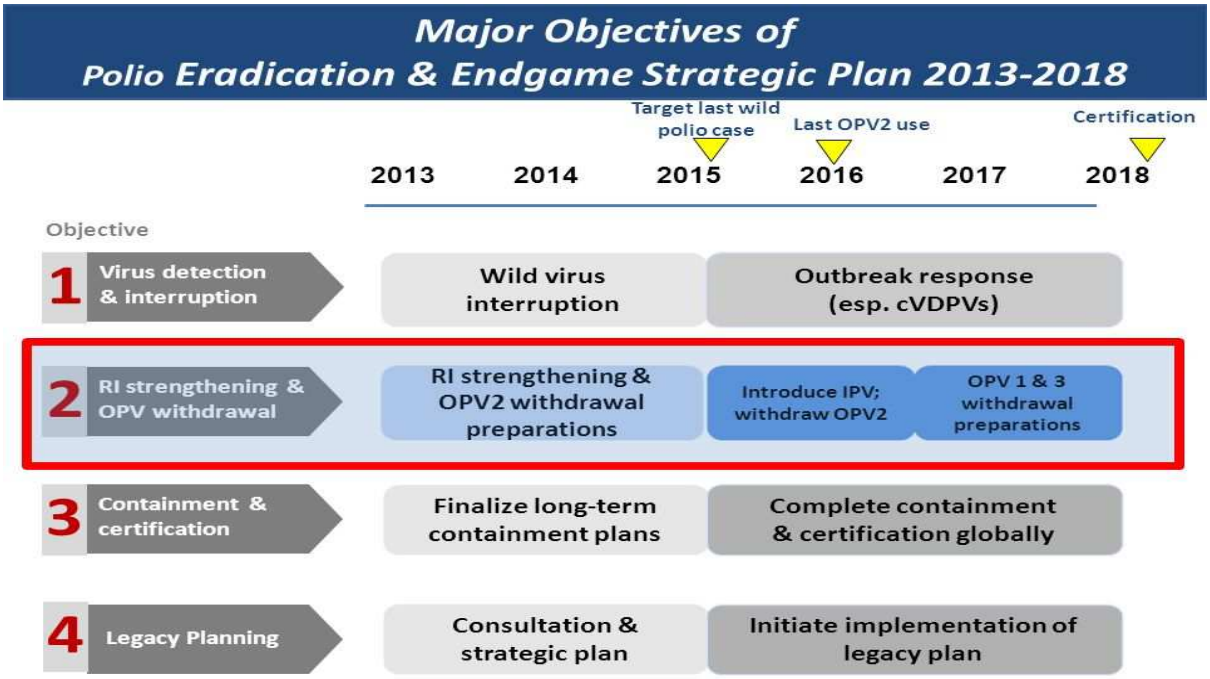
Polio Eradication Programme:

A public health effort to permanently eliminate all cases of poliomyelitis (polio) infection around the world began in 1988, led by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF) and the Rotary Foundation. These organizations, along with the U.S. Centers for Disease Control and Prevention (CDC) and The Gates Foundation, have spearheaded the campaign through the Global Polio Eradication Initiative (GPEI). Successful eradication of infectious diseases has been achieved twice before, with smallpox and bovine rinderpest.

- In India, Vaccination against polio started in 1978 with extended programme on immunization.
- Pulse Polio Immunization launched in 1995.
- In 2009, India had half the number of polio cases in the world.
- By 2011, in less than two years' time, India brought polio infections to the zero level.
- India's last reported polio case was a 2-year-old girl in the Howrah district of West Bengal, on 13 January 2011.
- India removed from list of polio-endemic countries in 2012.
- South East Asia region was declared polio free on March 27th 2014.

Objectives:

- **Poliovirus detection and interruption:** Stop all WPV transmission by the end of 2014 and new cVDPV outbreaks within 120 days of confirmation of the first case
- **Immunization systems strengthening and OPV withdrawal**: Hasten the interruption of all poliovirus transmission and help strengthen immunization systems
- **Containment and certification :** this objective encompasses the certification of the eradication and containment of all wild poliovirus in all WHO regions by end of 2018. 4)
- **Legacy planning**: Ensure that a polio-free world is permanent and that the investment in polio eradication provides public health dividends for years to come Polio Endgame St

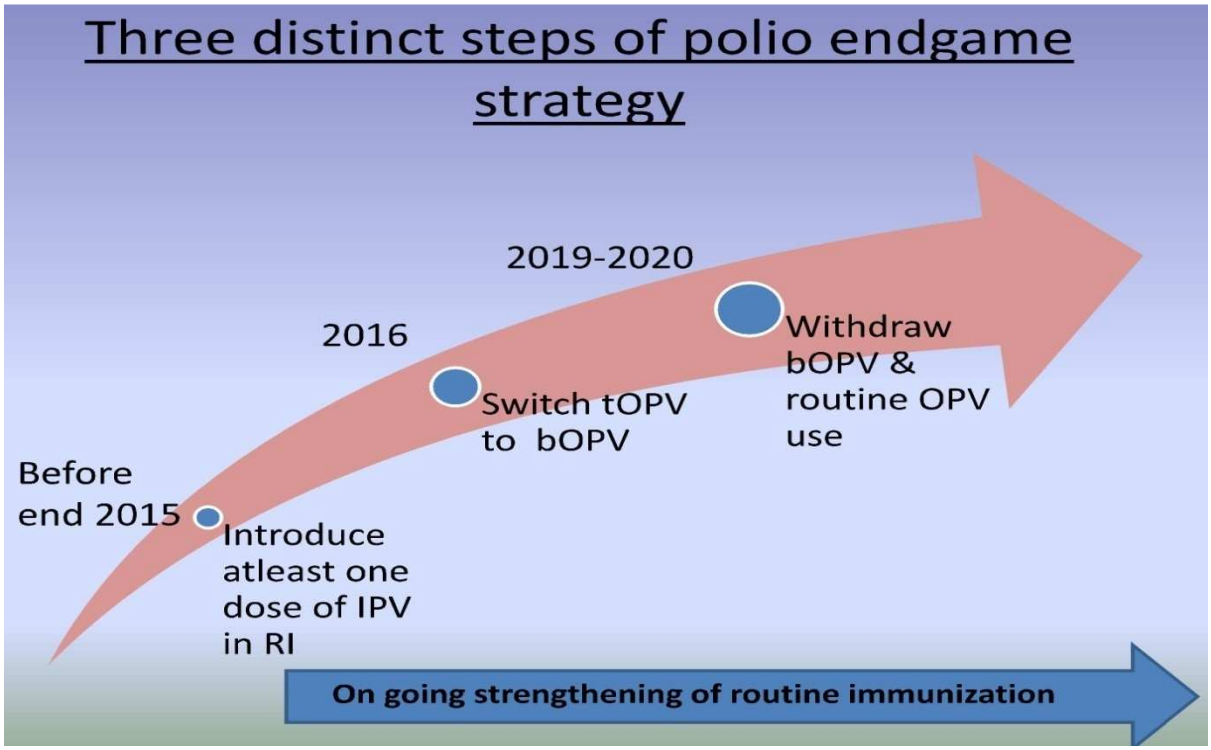


Initiative:

- Step 1 :Introduction of IPV into routine immunization by October 2015 : by end of 2015, introduce at least 1 dose of IPV in RI at

least 6 months before the switch from tOPV to bOPV (1 and 3 strain)

- Step 2: tOPV-bOPV switch by April 2016 : from 2016, switch from tOPV to bOPV (does not contain type 2 Sabin virus) in RI and polio campaigns.
- Step 3: withdrawal of routine OPV use : plan for the eventual withdrawal of all OPV in routine use by 2019-2020.



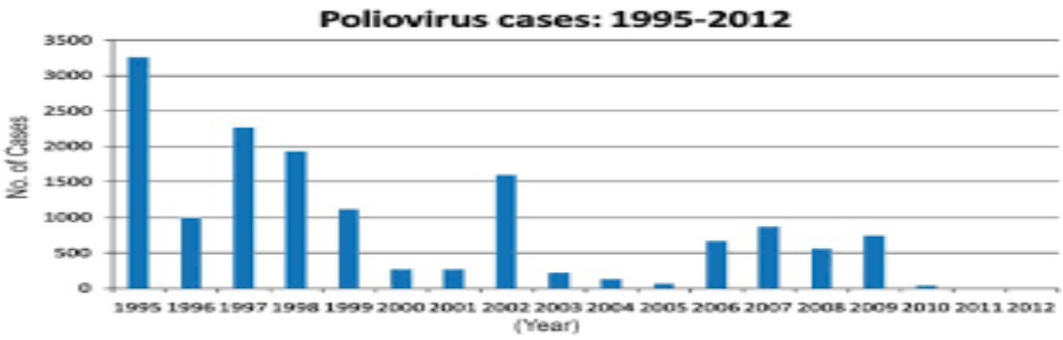
- Conduct pulse polio immunisation days every year until poliomyelitis is eradicated .
- Sustain high levels of routine immunisation coverage .
- Monitor OPV coverage at district level & below.
- Improve surveillance capable of detecting all cases of AFP due to polio & non-polio aetiology.
- Ensure rapid case investigation & collection of stool samples for virus isolation.

- Arrange follow up of all cases of AFP at 60 days to check for residual paralysis .
- Conduct outbreak control for cases confirmed or suspected to be poliomyelitis to stop transmission.

Achievement:

- The United Nations and leading world organizations celebrated India's first polio free year and termed it as a major milestone in their fight against this dreaded disease.
- The World Health Organisation (WHO) Director-General Margaret Chan, termed it as the "greatest public health achievement" of India, the Bill Gates, of Bill and Milinda Gates Foundation described it as a major milestone in the global fight against polio.
- "This is a major milestone in the global fight against polio. Children in India are now protected against this debilitating, but preventable disease, bringing us one step closer to saving and improving the lives of all children," Mr. Gates said.
- Mr. Gates in particular congratulated the Prime Minister, Manmohan Singh, the Union Health Minister, Ghulam Nabi Azad, and the Chief Ministers of Uttar Pradesh, Bihar and West Bengal on this achievement
- This success is the result of Indian Government's hard work and great partnerships with Rotary International, Centres for Disease Control and Prevention, WHO and UNICEF as well as millions of volunteers, health workers and community leaders, said the Seattle-based foundation.

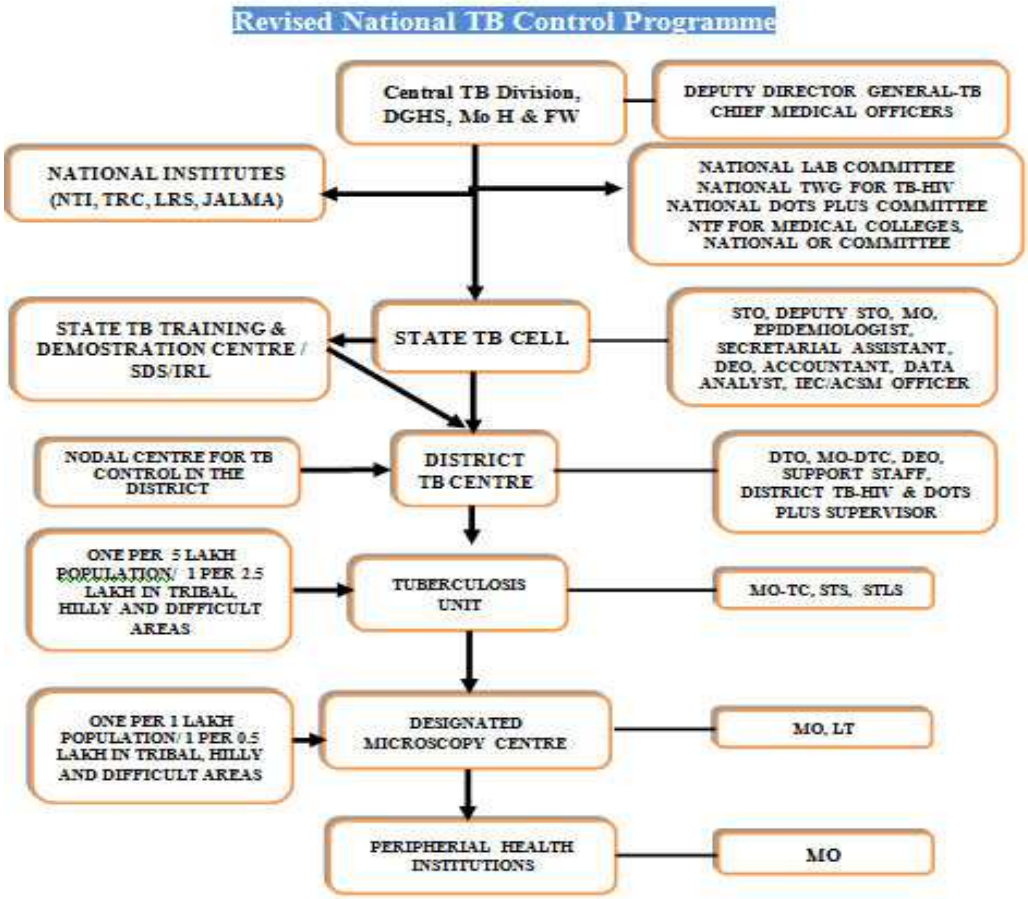
- "India's success is arguably its greatest public health achievement and has provided a global opportunity to push for the end of polio," WHO Director General, Margaret Chan said



RNTCP (Tuberculosis):

The Revised National TB Control Programme (RNTCP), based on the internationally recommended Directly Observed Treatment Short-course **(DOTS)** strategy, was launched in 1997 expanded across the country in a phased manner with support from World Bank and other development partners. Full nation-wide coverage was achieved in March 2006. In terms of treatment of patients, RNTCP has been recognized as the largest and the fastest expanding TB control programme in the world. RNTCP is presently being implemented throughout the country.

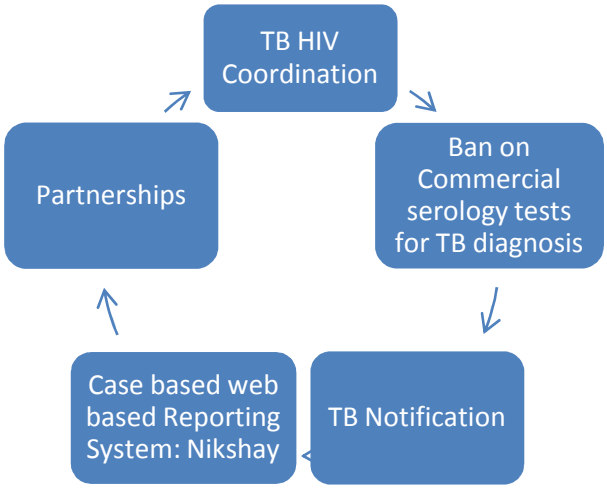
Under the programme, diagnosis and treatment facilities are provided free of cost to all TB patients. For quality diagnosis, designated microscopy centers have been established for every one lac population in the general areas and for every 50,000 population in the tribal, hilly and difficult areas. More than 13000 microscopy centers have been established in the country. Free treatment services are available for TB at all Government hospitals, Community Health Centers (CHC), Primary Health Centers (PHCs). DOT centers have been established near to residence of patients to the extent possible. All public heatlh facilties, subs centres, Community Volunteers, ASHA, Women Self Groups etc. also function as DOT Providers/DOT Centers.



Objectives of the Programme

- To reduce the incidence of and mortality due to TB
- To prevent further emergence of drug resistance and effectively manage drug-resistant TB cases
- To improve outcomes among HIV-infected TB patients
- To involve private sector on a scale commensurate with their dominant presence in health care services
- To further decentralize and align basic RNTCP management units with NRHM block level units within general health system for effective supervision and monitoring

Initiative:



TB HIV Coordination:

- The TB-HIV collaborative activities which were being undertaken in 14 states in 2006 were scaled up to all the states in 2007. NACP (National AIDS Control Programme) & RNTCP have developed "National framework of Joint TB/HIV Collaborative activities" in 2007 and revised it in 2015. The framework articulates the policy of TB/HIV collaborative activities in the country.
- At the country level, as in 2015, 79% of the total registered TB patients, were tested for HIV, which has increased from 11% in 2008; 3% of those tested were diagnosed as HIV positive and were offered access to HIV care. Similarly, among HIV-infected TB patients diagnosed in 2015 , 93% were put on co-trimoxazole preventive therapy (CPT). The coverage of Anti-Retroviral Treatment (ART) among TB patients who were known to be HIV-

positive, reached 92% in patients registered in 2015, up from 49% in 2008.

Ban on Commercial serology tests for TB diagnosis:

Vide the Gazette of India, Ministry of Health and Family Welfare (Department of Health and Family Welfare) has notified G.S.R. 432 (E) for prohibiting the import of the commercial sero-diagnostic test kits for tuberculosis and G.S.R. 433 (E) for prohibiting the manufacture , sale, distribution and use of the sero-diagnostic test kits for tuberculosis on 7th June 2012.

TB Notification:

In order to ensure proper TB diagnosis and case management, reduce TB transmission and address the problems of emergence and spread of Drug Resistant-TB, it is essential to have complete information of all TB cases. Towards the same, a Government Order No Z-28015/2/2012-TB dated 7th May 2012 has been issued by the Government of India mandating all healthcare providers to notify every TB case diagnosed &/or treated to local authorities i.e. District Health Officer / Chief Medical Officer of a district and Municipal health Officer of a Municipal Corporation / Municipality or to the Nodal Public Health Authority (for this purpose) or officials designated by the States/UTs for this purpose every month in a given format. For the purpose of this notification, healthcare providers will include clinical establishments run or managed by the Government (including local authorities), private or NGO sectors and/or individual practitioners.

Case based web based Reporting System: Nikshay

- The database of Revised National Tuberculosis Control Program (RNTCP) was conventionally on Epi-info based software for reporting with electronic data transmission from district level upwards. The digitization of information being an ongoing process; the generation of data in aggregated form and report submission is currently being done on quarterly basis. This causes a delay of more than 3 months and loss of case based data.
- To address this gap, Central TB Division in collaboration with National Informatics Centre developed a case based web based platform- 'Nikshay', which has been now scaled up nationally.
- Since implementation, over 4 million patients including MDR cases have been registered in Nikshay. More than 87,000 private health facilities have been registered and more than 3.82 lakh TB patients notified by these private health facilities have been registered in Nikshay. Details of more than 8,000 contractual staff have also been entered in Nikshay.
- The NIKSHAY case based web based TB case management system was awarded "Gold-Specific Sectoral National Award" (Focus Sector for 2013-14_ Health Care) for e-Governance 2013-14. Further developments and enhancement on the platform are ongoing,

Partnerships

- 364 medical colleges (including private ones) have been involved in RNTCP. Health facilities in government sectors outside Health

Ministry have been involved viz. ESI, Railways, Ports and the ministries of Mines, Steel, coal, etc.

- TB care services are provided through engagement of private provider and NGOs. More than 1800 NGOs collaborations and 13,000 Private practitioners are involved in the programme in different signed schemes under NGO/PP schemes.
- Intensified Public Private Mix project was being undertaken with Indian Medical Association (IMA) in 16 states and with Catholic Bishop Conference of India (CBCI), a faith based organization (FBO), in 19 States under the Global Fund supported Single Stream Funding Project.
- Under the Global Fund Round 9 project civil society organizations are undertaking activities in 374 districts across 23 states to enhance the visibility and reach of the programme and engage with communities and community based care providers to improve TB care and control

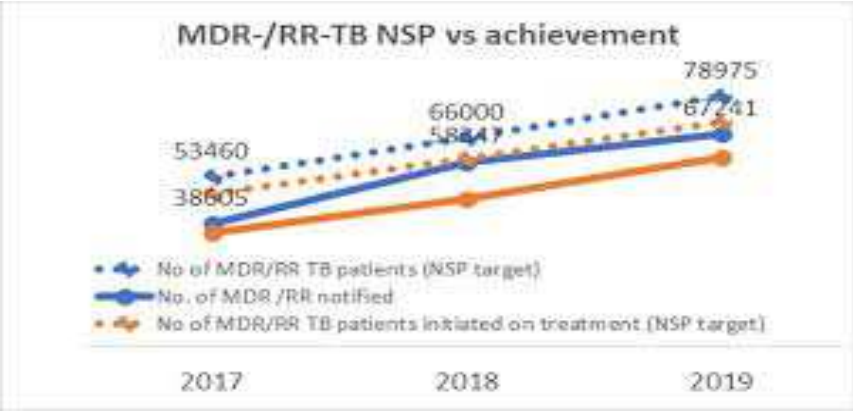
Achievements:

- In 2005, 1.29 million TB patients, in 2006, 1.39 million; in 2007, 1.48 million, in 2008, 1.51 million, in 2009, 1.53 million, in 2010, 1.52 million, in 2011, 1.51 million patients, in 2012, 1.46 million, in 2013, 1.44 million TB patients, in 2014 and 1.42 million TB patients have been registered for treatment. For the first time in 2015, the programme screened more than 9 million suspects for Tuberculosis.

- Treatment success rates have tripled from 25% in pre-RNTCP era to 87% presently (2014) and TB death rates have been reduced from 29% to 4% during the same period.
- Since 2007, RNTCP has achieved the NSP case detection rate of more than 70% in line with the global targets for TB control while maintaining the treatment success rate of >85%.

Achievements of RNTCP

- **830 million population covered by DOTS**
- **Treatment success exceeded global target of 85%**
- **Case detection in DOTS areas recently attained global target of 70%**
- **Nearly 3 million patients put on treatment, 900,000 in 2003 alone**
- **Cure rate more than doubled vs. non-DOTS areas**
- **Deaths reduced 7-fold vs. non-DOTS areas**
- **Over 500,000 lives saved**
- **Recent baseline ARTI survey completed - repeat survey at 3-5 years intervals planned**



Universal Immunization Programme:

- Expanded Programme on Immunization was launched in 1978. It was renamed as 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 was included in the ambit of National Reproductive and Child Health Programme. Since the launch of National Rural Health Mission in 2005, Universal Immunization Programme has always been an integral part of it.
- Universal Immunization Programme (UIP) is one of the largest public health programmes targeting close of 2.67 crore newborns and 2.9 crore pregnant women annually.
- It is one of the most cost-effective public health interventions and largely responsible for reduction of vaccine preventable under-5 mortality rate.
- Under UIP, immunization is providing free of cost against 12 vaccine preventable diseases:
- Nationally against 9 diseases - Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Hepatitis B and Meningitis & Pneumonia caused by Hemophilus Influenza type B.
- Sub-nationally against 3 diseases - Rotavirus diarrhoea, Pneumococcal Pneumonia and Japanese Encephalitis; of which Rotavirus vaccine and Pneumococcal Conjugate vaccine are in process of expansion while JE vaccine is provided only in endemic districts.

- A child is said to be fully immunized if child receives all due vaccine as per national immunization schedule within 1st year age of child.
- The two major milestones of UIP have been the elimination of polio in 2014 and maternal and neonatal tetanus elimination in 2015.

National Immunization Schedule :

National Immunization Schedule for Infants, Children and Pregnant Women				
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 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 till 1mth age)	Intra-dermal	Left Upper Arm
Hepatitis B	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	2 drops	Oral	Oral
DPT 1,2 & 3	At 6 weeks 10 weeks & 14 weeks	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Hep B 1, 2 & 3	At 6 weeks 10 weeks & 14 weeks	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Measles	9 completed months-12 months.	0.5 ml	Sub-cutaneous	Right upper Arm
Vitamin-A (1stdose)	At 9 months with measles	1 ml (1 lakh IU)	Oral	Oral
For Children				
DPT booster	16-24 months	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Measles 2nd dose	16-24 months	0.5 ml	Sub-cutaneous	Right upper Arm
OPV Booster	16-24 months	2 drops	Oral	Oral
Japanese Encephalitis**	16-24 months	0.5 ml	Sub-cutaneous	Left Upper Arm
Vitamin-A***				
(2nd to 9th dose)	16 months. Then, one dose every 6 months up to the age of 5 years.	2ml (2 lakh IU)	Oral	Oral
DPT Booster	5-6 years	0.5 ml.	Intra-muscular	Upper Arm
TT	10 years & 16 years	0.5 ml	Intra-muscular	Upper Arm

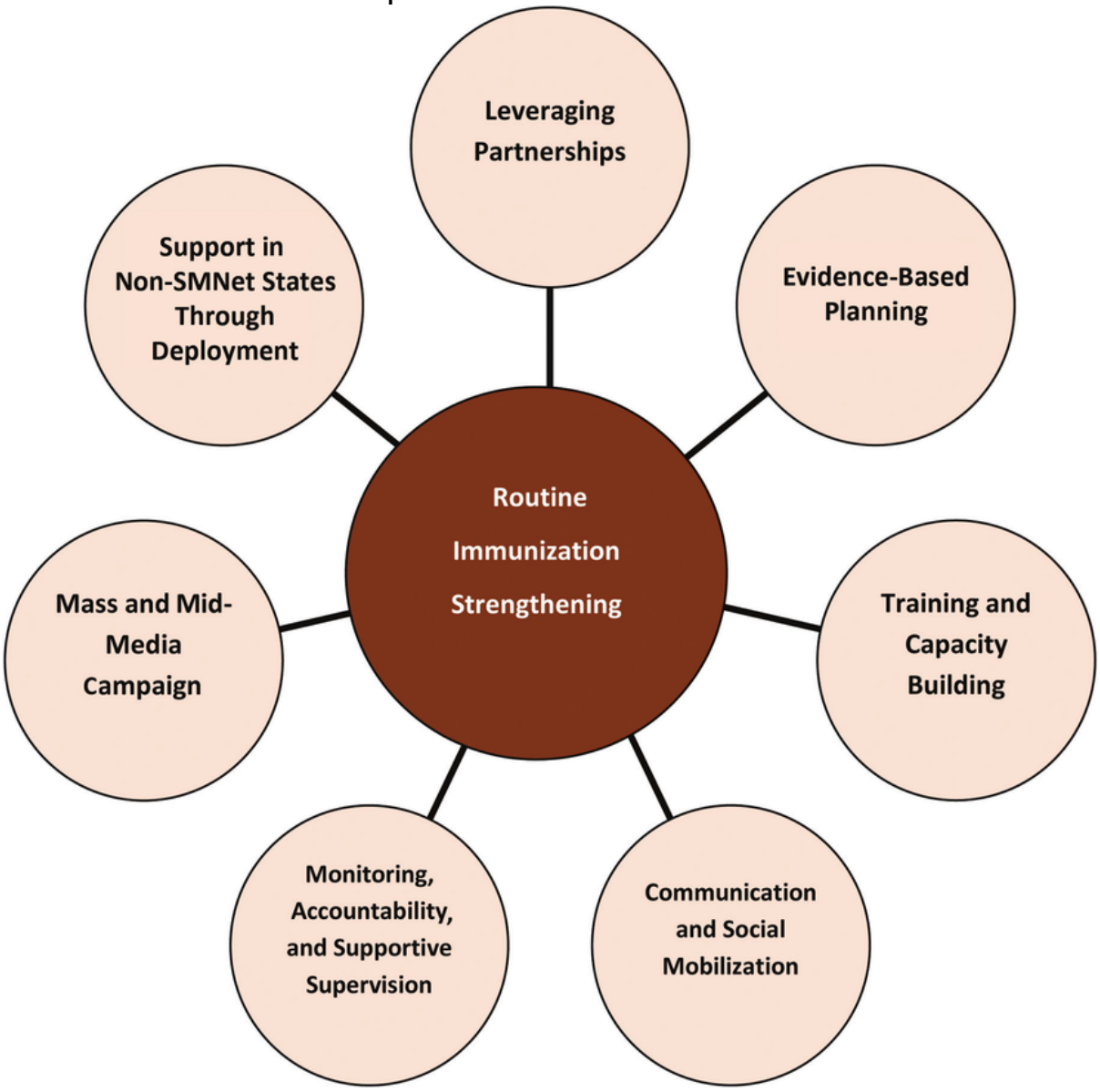
*Give TT-2 or Booster doses before 36 weeks of pregnancy. However, give these even if more than 36 weeks have passed. Give TT to a woman in labour, if she has not previously received TT.

** JE Vaccine, 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.

Objective:

- To increase coverage area
- To improve quality of services
- To achieve self sufficiency in vaccine production manufacturing of could chain equipments
- To stabilised reliable could chain equipment and establish a good surveillance network
- To introduced a district wise system monitoring & evaluation
- To train health personal
- Review need for MMR vaccines immunization programme
- Phased introduction of Hepatitis B



Initiative:

New vaccines

Inactivated Polio Vaccine (IPVRotavirus vaccine (RVV): RVV has been introduced to reduce mortality and morbidity caused by Rotavirus diarrhoea in March 2016. It has been introduced in 11 states (Andhra Pradesh, Haryana, Himachal Pradesh, Jharkhand, Odisha, Assam, Tripura, Rajasthan, Tamil Nadu, Madhya Pradesh and Uttar Pradesh). The vaccine will be expanded across the country in 2019-20.

Measles Rubella (MR) vaccine: India is committed to the goal of measles elimination and rubella control and to achieve the goal MR vaccine was introduced in the country through a campaign mode in a phased manner in 2017. MR campaign target around 41 crore children in the age group of 9 months to 15 years (covering ⅓ of the total population of the country) followed by 2 doses in routine immunization at 9-12 months and 16-24 months. Rubella component is now under routine immunization as MR vaccine.

Pneumococcal Conjugate Vaccine (PCV): PCV has been launched in May 2017 for reducing Infant mortality and morbidity caused by pneumococcal pneumonia. It has been introduced in Bihar, Himachal Pradesh, Madhya Pradesh, 19 districts of Uttar Pradesh and 18 districts of Rajasthan.

Tetanus and adult diphtheria (Td) vaccine: TT vaccine has been replaced with Td vaccine in UIP to limit the waning immunity against diphtheria in older age groups. Td vaccine to be administered to adolescents at 10 and 16 years of age and to pregnant women.

Mission Indradhanush:

- Mission Indradhanush (MI) was launched in December 2014 and aims at increasing the full immunization coverage to children to 90%.
- Under this drive focus is given on pockets of low immunization coverage and hard to reach areas where the proportion of unvaccinated and partially vaccinated children is highest.
- A total of six phases of Mission Indradhanush have been completed covering 554 districts across the country.
- It was also identified as one of the flagship schemes under Gram Swaraj Abhiyan (16,850 villages across 541 districts) and Extended Gram Swaraj Abhiyan (48,929 villages across 117 aspirational districts).
- While the first two phases of Mission Indradhanush resulted in 6.7% increase in full immunization coverage in a year, a recent survey carried out in 190 districts covered in Intensified Mission Indradhanush (5th phase of Mission Indradhanush) shows 18.5% points increase in full immunization coverage as compared to NFHS-4 survey carried out in 2015-16.

New Initiatives in Vaccine Logistics & Cold Chain Management:

Capacity building

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

System strengthening

Electronic Vaccine Intelligence Network (eVIN) rollout:

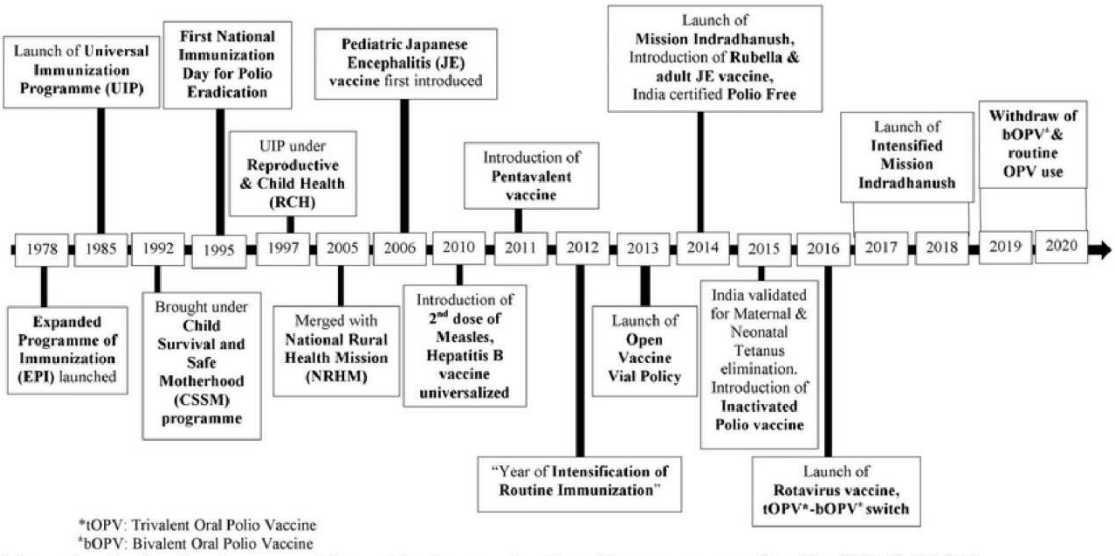
- The Government of India has rolled out an Electronic Vaccine Intelligence Network (eVIN)system that digitizes the entire vaccine stock management, their logistics and temperature tracking at all levels of vaccine storage – from national to the sub-district.
- This enables program managers to have real 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 completed in 12 states in the first phase – Assam, Bihar, Chhattisgarh, Himachal Pradesh Gujarat, Jharkhand, Madhya Pradesh, Manipur, Nagaland, Odisha, Rajasthan, and Uttar Pradesh.
- Second phase is ongoing in 9 states – Andhra Pradesh, Daman & Diu, Dadra & Nagar Haveli, Goa, Karnataka, Maharashtra, Telangana, Tripura and Uttarakhand.
- eVIN is to be scaled up to entire country.
- National Cold Chain Management Information System (NCCMIS) to track the cold chain equipment inventory, availability and functionality.

Achievements:

- The biggest achievement of the immunization program is the eradication of small pox.
- One more significant milestone is that India is free of Poliomyelitis caused by Wild Polio Virus (WPV).
- Vaccination has contributed significantly to the decline in the cases and deaths due to the Vaccine Preventable Diseases (VPDs).
- Under the UIP, all vaccines are given free of cost to the beneficiaries as per the National Immunization Schedule.

- All beneficiaries' namely pregnant women and children can get themselves vaccinated at the nearest Government/Private health facility or at an immunization post (Anganwadi centres/ other identified sites) near to their village/urban locality on fixed days.
- The UIP covers all sections of the society across the country with the same high quality vaccines.
- India has one of the largest Universal Immunization Programs (UIP) in the world in terms of the quantities of vaccines used, number of beneficiaries covered, geographical spread and human resources involved.
- The Immunization Programme runs due to the coordinated efforts of different cadres of health staff working in the states at different levels (states, districts, PHCs and CHCs).

Flowchart of Milestone achieved in Immunization Programme in India (1978 -2020):



Flowchart of milestones achieved in Immunization Programme of India (1978-2020)

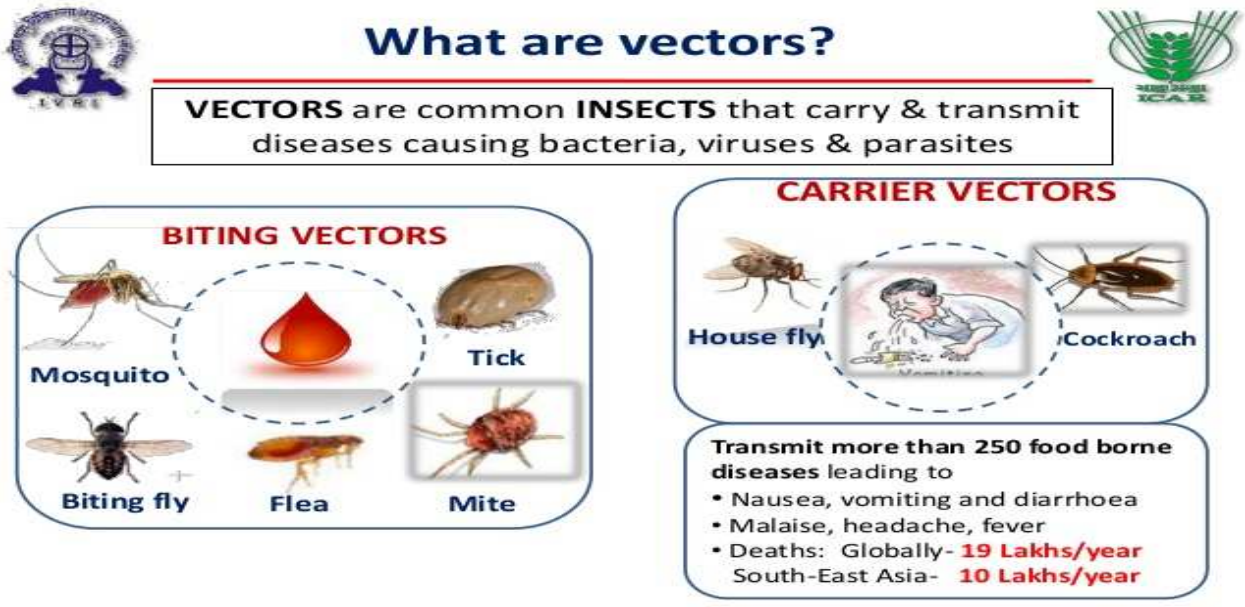
3.2 Vector Born Diseases Control Programme, Diarrhoea Management Programme- Objective, Initiative and Achievement

Vector Born Diseases Control Programme:

Vectors:

Vectors are living organisms that can transmit infectious pathogens between humans, or from animals to humans. Many of these vectors are bloodsucking insects, which ingest disease-producing microorganisms during a blood meal from an infected host (human or animal) and later transmit it into a new host, after the pathogen has replicated. Often, once a vector becomes infectious, they are capable of transmitting the pathogen for the rest of their life during each subsequent bite/blood meal

Launched in 2003-04 by merging National anti -malaria control programme ,National Filaria Control Programme and Kala Azar Control programmes .Japanese B Encephalitis and Dengue/DHF have also been included in this Program Directorate of NAMP is the nodal agency for prevention and control of major Vector Borne Diseases.



List of Vector Borne Diseases Control Programme Legislations:

1) National Anti - Malaria programme
2) Kala - Azar Control Programme
3) National Filaria Control Programme
4) Japenese Encephilitis Control Programme
5) Dengue and Dengue Hemorrhagic fever

1) NATIONAL ANTI - MALARIA PROGRAMME

Malaria: Malaria is one of the serious public health problems in India. At the time of independence malaria was contributing 75 million cases with 0.8 million deaths every year prior to the launching of National Malaria Control Programme in 1953. A countrywide comprehensive programme to control malaria was recommended in 1946 by the Bhore committee report that was endorsed by the Planning Commission in 1951. The national programme against malaria has a long history since that time. In April 1953, Govt. of India launched a National Malaria Control Programme (NMCP).

Objective:

- To bring down malaria transmission to a level at which it would cease to be a major public health problem.

2) KALA -AZAR CONTROL PROGRAMME

Kala-azar or visceral leishmaniasis (VL) is a chronic disease caused by an intracellular protozoan (Leishmania species) and transmitted to man by

bite of female phlebotomus sand fly.Currently, it is a main problem in Bihar, Jharkhand, West Bengal and some parts of Uttar Pradesh. In view of the growing problem planned control measures were initiated to control kala-azar.

Objectives:

The strategy for kala-azar control broadly included three main activities.

- Interruption of transmission by reducing vector population through indoor residual insecticides.
- Early diagnosis and complete treatment of Kala-azar cases; and
- Health education programme for community awareness.

3) NATIONAL FILARIA CONTROL PROGRAMME

Bancroftian filariasis caused by Wuchereria bancrofti, which is transmitted to man by the bites of infected mosquitoes - Culex, Anopheles, Mansonia and Aedes. Lymphatia filaria is prevalent in 18 states and union territories. Bancroftian filariasis is widely distributed while brugian filariasis caused by Brugia malayi is restricted to 7 states - UP, Bihar, Andhra Pradesh, Orissa, Tamil Nadu, Kerala, and Gujarat. The National Filaria Control Programme was launched in 1955. The activities were mainly confined to urban areas. However, the programme has been extended to rural areas since 1994.

Objectives:

- Reduction of the problem in un-surveyed areas
- Control in urban areas through recurrent anti-larval and anti-parasitic measures.

4) JAPANESE ENCEPHALITIS CONTROL PROGRAMME

Japanese encephalitis (JE) is a zoonotic disease and caused by an arbovirus, group B (Flavivirus) and transmitted by Culex mosquitoes. This disease has been reported from 26 states and UTs since 1978, only 15 states are reporting JE regularly. The case fatality in India is 35% which can be reduced by early detection, immediate referral to hospital and proper medical and nursing care. The total population at risk is estimated 160 million. The most disturbing feature of JE has been the regular occurrence of outbreak in different parts of the country.

Govt. of India has constituted a Task Force at National Level which is in operation and reviews the JE situations and its control strategies from time to time. Though Directorate of National Anti-Malaria Programme is monitoring JE situation in the country.

Objectives:

- Strengthening early diagnosis and prompt case management at PHCs, CHCs and hospitals through training of medical and nursing staff.
- IEC for community awareness to promote early case reporting, personal protection, isolation of amplifier host, etc.;
- Vector control measures mainly fogging during outbreaks, space spraying in animal dwellings, and antilarval operation where feasible; and
- Development of a safe and standard indigenous vaccine. Vaccination for high risk population particularly children below 15 years of age.

5) DENGUE AND DENGUE HEMORRHAGIC FEVER

One of the most important resurgent tropical infectious disease is dengue. Dengue Fever and Dengue Hemorrhagic Fever (DHF) are acute fevers caused by four antigenically related but distinct dengue virus serotypes (DEN 1,2,3 and 4) transmitted by the infected mosquitoes, Aedes aegypti. Dengue outbreaks have been reported from urban areas from all states. All the four serotypes of dengue virus (1,2,3 and 4) exist in India. The Vector Aedes Aegypti breed in peridomestic fresh water collections and is found in both urban and rural areas.

Objectives:

- Surveillance for disease and outbreaks
- Early diagnosis and prompt case management
- Vector control through community participation and social mobilization
- Capacity building

Initiative:

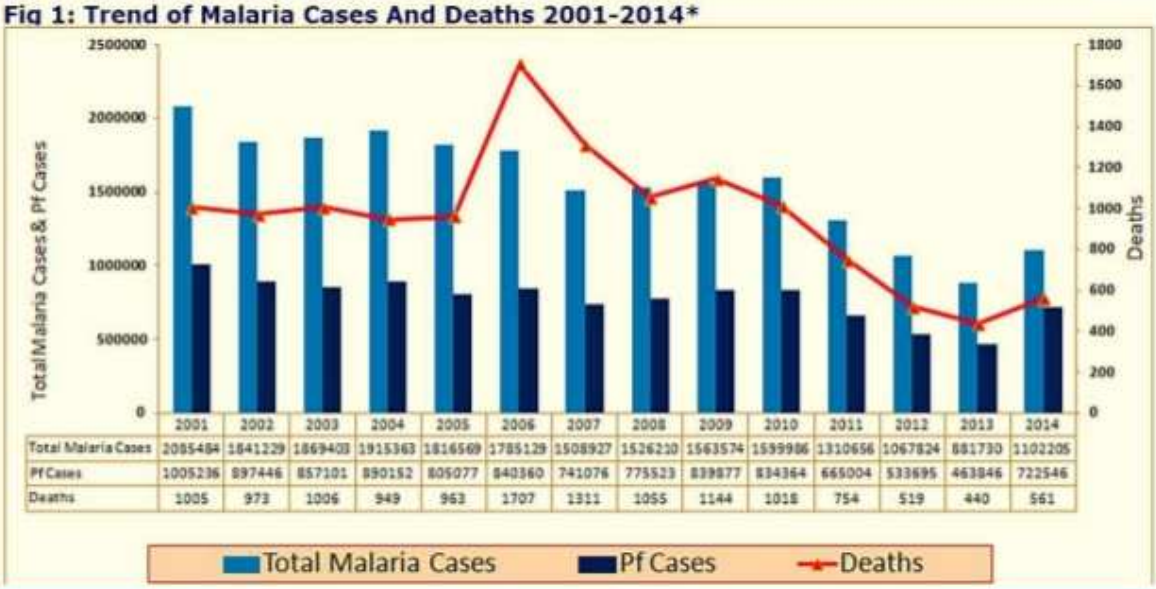
The Government of India is implementing National Vector Borne Disease Control Programme in the country for prevention & control of six vector borne diseases namely Malaria, Japanese Encephalitis, Dengue, Chikungunya, Kala-azar and Filaria. The States/UTs implement the programme activities and the technical guidance as well as financial assistance is provided by Government of India. The general strategy for prevention & control of Vector Borne Diseases is as below:

- Malaria cases are detected by active and passive surveillance with the help of direct microscopy or Rapid diagnostic kits and are treated as per guideline.
- Kala-azar cases are also detected by active search and passive surveillance with the help of RDK and all positive cases are treated by single dose of Inj. Liposomal Amphotericine-B or combination of drugs.
- Integrated Vector Management including Indoor Residual Spray (IRS), Anti-larval measures including use of bio-larvicides, use of larvivorous fish and use of Long Lasting Insecticidal Nets (LLINs).
- Supportive Interventions including Behavior Change Communication, Capacity Building and Monitoring & Evaluation.
- Vaccination against J.E.
- Annual Mass Drugs Administration (only for Lymphatic Filariasis).

Achievements:

- Eradication of Small pox, Guinea worm and Polio.
- Elimination of Leprosy and Yaws.\
- Containment of diseases like Avian Influenza, H 1 N1, CCHF, Plague, Leptospirosis.
- Cholera, widely prevalent was brought under control through focused action.
- Public health burden of diseases like Malaria, trachoma, filarial, Kala-Azar got substantially reduced.
- Major initiatives began to control tuberculosis.

Fig 1: Trend of Malaria Cases And Deaths 2001-2014*



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Malaria Cases	2085484	1841229	1869403	1915363	1816569	1785129	1508927	1526210	1563574	1599986	1310656	1067824	881730	1102205
Pf Cases	1005236	897446	857101	890152	805077	840360	741076	775523	839877	834364	665004	533695	463846	722546
Deaths	1005	973	1006	949	963	1707	1311	1055	1144	1018	754	519	440	561