

UNIVERSAL IMMUNIZATION PROGRAMME

- Under Global Smallpox Eradication Program, it was experienced that immunization is the most powerful and cost-effective weapon for the prevention and control and even eradication of a disease.
- In 1974, WHO officially launched a global immunization program, known as **Expanded Program of Immunization** for the prevention and control of six killer diseases of children, namely tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis and measles, all over the world.

- It was called **Expanded** because:
 - Adding more disease controlling antigens of vaccination schedules.
 - Extending coverage to all corners of a country.
 - Spreading services to reach the less privileged sectors of the society
- The primary health care concept as enunciated in the 1978 Alma-Ata Declaration included immunization as one of the strategies for reaching the goal of “**Health For All**” by the year 2000.
- The Government of India launched EPI in 1978 with objective of reducing mortality and morbidity resulting from vaccine-preventable diseases of childhood and to achieve self sufficiency in the production of vaccines.

- In October 1985, **UNICEF** emphasized the goal of achieving universal immunization by 1990 so the global program was renamed as ‘**Universal Child Immunization**’.
- On **19 November 1985**, GOI renamed EPI program, modifying the schedule as ‘**Universal Immunization Program**’ dedicated to the memory of Late Prime Minister Mrs Indira Gandhi.
- UIP has two vital components: **immunization of pregnant women against tetanus**, and **immunization of children in their first year of life against the six EPI target diseases**.
- The aim was **to achieve 100 per cent coverage of pregnant women with 2 doses of tetanus toxoid (or a booster dose), and at least 85 per cent coverage of infants with 3 doses each of DPT, OPV, one dose of BCG and one dose of measles vaccine by 1990**.

- Universal immunization was first taken up in 30 selected districts and catchment areas of 50 Medical Colleges in November 1985.
- A “**Technology Mission on Vaccination and Immunization of Vulnerable Population, specially Children**” was set up to cover all aspects of the immunization activity from research and development to actual delivery of services to the target population.
- The immunization services are being provided through the existing health care delivery system (i.e., MCH centres, primary health centres and subcentres, hospitals, dispensaries and ICD units).
- During **1992** , immunization program become a component of Child Survival and Safe Motherhood (**CSSM**) program. It was recommended **to cover 100% among infant** also.
- In **1995**, **Pulse Polio Immunization Program** was launched as a strategy to eradicate poliomyelitis.

- In **1997**, immunization activities have been an important component of **National Reproductive and Child Health Program**.
- In **2005**, immunization schedule was revised incorporating **hepatitis vaccine, 2 doses of JE vaccine** in selected endemic districts , 1st during 9-12 months and 2nd during 16-24 months and **2 doses of measles vaccine**, 1st dose during 9-12 months and 2nd dose during 16-24 months, under National Rural Health Mission (NRHM).
- In **2012**, GOI declared 2012 as the “**Year of Intensification of Routine Immunization**”.
- In **2013**, GOI along with other S-E Asia regions, declared commitment towards **measles elimination and congenital rubella syndrome control by 2020**.
- In **2014**, India was certified as “**Polio free country**”.

- Although the target was “universal” immunization by 1990, in practice, no country, even in the industrialized world, has ever achieved 100 per cent immunization in children.
- ‘Universal’ immunization is, therefore, best interpreted as implying the ideal that no child should be denied immunization against tuberculosis, diphtheria, whooping cough, tetanus, polio and measles.
- It is, however, generally agreed that when immunization coverage reaches a figure of 80 per cent or more, then disease transmission patterns are so severely disrupted as to provide a degree of protection even for the remaining children who have not been immunized, because of “herd immunity”.
- It is also important that children are immunized during the first year of life and that levels of immunization are sustained so that each new generation is protected.

- Significant achievements have been made in India.
- At the beginning of the programme in 1985-86, vaccine coverage ranged between 29 per cent for BCG and 41 per cent for DPT.
- By the end of 2014, coverage levels had gone up significantly to about
 - 87 per cent for tetanus toxoid for pregnant women
 - about 91 per cent for BCG
 - 83 per cent for DPT 3 doses
 - 83 per cent for measles
 - 82 per cent for OPV 3 doses and
 - 70 per cent for HepB₃ and
 - 20 percent for Hib3.

- To strengthen routine immunization, Government of India has planned the **State Programme Implementation Plan (PIP) part C**.
- It consists of:
 - (a) Support for **alternate vaccine delivery** from PHC to sub-centre and outreach sessions;
 - (b) **Deploying retired manpower** to carry out immunization activities in **urban slums and underserved areas**, where services are deficient;
 - (c) **Mobility support** to district immunization officer as per state plan for **monitoring and supportive supervision**;
 - (d) **Review meeting** at the state level with the districts at **6 monthly intervals**;
 - (e) **Training** of ANM, cold chain handlers, mid-level managers, refrigerator mechanics etc.;
 - (f) **Support for mobilization** of children to immunization session sites by ASHA, women self-help groups etc.;
 - (g) **Printing** of immunization cards, monitoring sheet, cold chain chart vaccine inventory charts etc.
- In addition, central government is supporting in supplies of auto-disposable syringes, downsizing the BCG vial from 20 doses to 10 doses to ensure that BCG vaccine is available in all immunization session sites, strengthening and maintenance of the cold chain system in the states, and supply of vaccines and vaccine van.

PULSE POLIO IMMUNIZATION PROGRAMME

- Pulse Polio Immunization Programme was launched in the country in the year 1995.
- In this programme children under five years of age are given additional oral polio drops in December and January every year on fixed days.
- From 1999-2000, house to house vaccination of missed children was also introduced. The NIDs rounds cover approximately 172 million children and SNIDs rounds cover 40-80 million children. In addition, large scale multi-district mop-ups have been conducted.
- As a result only one case of polio was reported in 2011 in the month of January.
- As on 25th Feb 2012, India was removed from the list of polio endemic countries, and on 27th March 2014, India was certified as polio-free country.

INTRODUCTION OF HEPATITIS-B VACCINE

- In 2010-2011, Government of India universalized hepatitis B vaccination to all States/UTs in the country.
- Monovalent hepatitis B vaccine is given as intramuscular injection to the infant at 6th, 10th and 14th week alongwith primary series of DPT and polio vaccines.
- In addition one dose of hepatitis B is given at birth for institutional deliveries within 24 hours of birth.

INTRODUCTION OF JE VACCINE

- The programme was introduced in 2006 to cover 104 endemic districts in phased manner, using SA 14-14-2 vaccine, imported from China.
- Single dose of JE vaccine was given to all children between 1 to 15 years of age through campaigns.
- The JE vaccine is being integrated into routine immunization in the districts where campaign had already been conducted to immunize the new cohort of children by vaccinating with two doses at 9-12 months and 16-24 months.

INTRODUCTION OF MEASLES VACCINE SECOND OPPORTUNITY

- In order to accelerate the reduction of measles related morbidity and mortality, second opportunity for measles vaccination is being implemented.
- The National Technical Advisory Group on immunization recommended introduction of 2nd dose of measles vaccine to children between 9 months and 10 years of age through supplementary immunization activity (SIA) for states where evaluated coverage of first dose of measles vaccination is less than 80 per cent.
- In states, with coverage of measles vaccination more than 80 per cent, the second dose of vaccine was given through routine immunization at 16-24 months.

INTRODUCTION OF PENTAVALENT VACCINE (DPT + *Hep-B* + *Hib*)

- India introduced pentavalent vaccine containing DPT, hepatitis B and Hib vaccines in two states viz. Kerala and Tamil Nadu under routine immunization programme from December 2011.
- DPT and hepatitis B vaccination require 6 injections to deliver primary doses.
- With the introduction of pentavalent vaccine, a new antigen, i.e., Hib has been added which protects against haemophilus influenzae type B (associated with pneumonia and meningitis) and the number of injections are reduced to 3.
- The vaccine has been expanded to 6 more states, i.e., Haryana, Jammu and Kashmir, Gujarat, Karnataka, Goa and Puducherry in 2012-13. Now pentavalent vaccine is being given in all states.

MISSION INDRADHANUSH

- The Government of India launched **Mission Indradhanush** on 25th December 2014, to cover children who are either unvaccinated or partially vaccinated against seven vaccine preventable diseases, i.e., diphtheria, whooping cough, tetanus, polio, tuberculosis, measles and hepatitis B.
- The goal is to vaccinate all under-fives by the year 2020.
- 201 high focus districts were covered in the first phase. Of these 82 districts are from Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan. These 201 districts have nearly 50 per cent of all unvaccinated children of the country. The drive was through a “catch-up” campaign mode. The mission was technically supported by WHO, UNICEF, Rotary International and other donor partners.

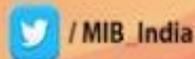
- Government of India introduced **“Intensified Mission Indradhanush (IMI)”** in select districts and urban areas of the country to achieve the target of more than **90%** coverage.
- IMI focus on children up to **2 years of age and pregnant women** who have missed out on routine immunization. However, vaccination on demand to children up to 5 years of age will be provided during IMI rounds.
- Intensified Mission Indradhanush Immunization drive will be spread over **7 working days starting from 7th of every month**. These 7 days do not include holidays, Sundays and the routine immunization days planned in that week.



Ministry of Information and
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Vaccination cover against **7** diseases to more than **89** lakh children by **2020**



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NEW VACCINES

- In **April 2016**, **India** introduced the use of **fractional dose IPV (fIPV)** into the routine immunization programme in eight states (Odisha, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Ponducherry and Maharashtra).
- Since **March 2017** has been scaled up nationwide in all 36 states. **Two fractional doses of IPV 0.1ml**, are being given intradermally at **6 and 14 weeks**.
- On **5 Feb 2017**, The Ministry of Health and Family Welfare launched **Measles Rubella (MR) vaccination campaign** in the country, following the campaign, Measles-Rubella vaccine will be introduced in routine immunization, replacing the currently given two doses of measles vaccine, at 9-12 months and 16-24 months of age in five States/UTs (Karnataka, Tamil Nadu, Pondicherry, Goa and Lakshadweep).

- In March 2016, the **Rotavirus vaccine** was first introduced in four states namely Haryana, Himachal Pradesh, Andhra Pradesh and Odisha. On 18 Feb 2017, Union Minister for Health and Family Welfare announced the expansion of the Rotavirus vaccine under its UIP in five additional states of Assam, Tripura, Madhya Pradesh, Rajasthan and Tamil Nadu.
- On 13 May 2017, Union Minister for Health and Family Welfare, announced the introduction of **pneumococcal conjugate vaccine (PCV)** in the UIP. Currently, the vaccine is being rolled out to approximately 21 lakh children in Himachal Pradesh and parts of Bihar and Uttar Pradesh in the first phase. This will be followed by introduction in Madhya Pradesh and Rajasthan next year, and eventually be expanded to the country in a phased manner.

Implementation of Routine Immunization

- RI targets to vaccinate 26 million new born each year with all primary doses and ~100 million children of 1-5 year age with booster doses of UIP vaccines. In addition, 30 million pregnant mothers are targeted for TT vaccination each year.
- To vaccinate this cohort of 156 million beneficiaries, ~9 million immunization sessions are conducted, majority of these are at village level.
- ASHA and AWW support ANM by mobilizing eligible children to session site thus try to ensure that no child is missed. ASHA is also provided an incentive of Rs. 150/session for this activity.
- To ensure potent and safe vaccines are delivered to children, a network of ~27,000 cold chain points have been created across the country where vaccines are stored at recommended temperatures.
- To ensure safe injection practices, Government of India endeavors to ensure continuous supply of injection safety equipments (AD syringes, reconstitution syringes, hub cutters and waste disposal bags).

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).

National Immunization Schedule (NIS) 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 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
Rotavirus#	At 6 weeks, 10 weeks & 14 weeks (can be given till one year of age)	5 drops	Oral	Oral
IPV	Two fractional dose at 6 and 14 weeks of age	0.1 ml	Intra dermal two fractional dose	Intra-dermal: Right upper arm
Measles /MR 1 st Dose\$	9 completed months-12 months. (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/ 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 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.
- #Phased introduction, at present in Andhra Pradesh, Haryana, Himachal Pradesh and Orissa from 2016 & expanded in Madhya Pradesh, Assam, Rajasthan, and Tripura in February 2017 and planned in Tamil Nadu & Uttar Pradesh in 2017.
- \$ Phased introduction, at present in five states namely Karnataka, Tamil Nadu, Goa, Lakshadweep and Puducherry. (As of Feb' 2017)

THANK YOU

