Joint Appraisal report 2017

Country	India
Full Joint Appraisal or Joint Appraisal update	Full Joint Appraisal
Date and location of Joint Appraisal meeting	13-16 November 2017, New Delhi
Participants / affiliation	See Annex
Reporting period	Q4 2016 – Q3 2017[1]
Fiscal period[2]	April – March
Comprehensive Multi Year Plan (cMYP) duration	2013-2017; new cMYP 2018-22 in development

1. SUMMARY OF RENEWAL AND EXTENSION REQUESTS

As part of the ongoing grant cycle, Gavi reviews and renews its support to the country annually (referred to as "renewal").

1.1. New and Underused Vaccines Support (NVS) renewal request(s)

Type of support (routine or campaign)	Vaccine	End year of support	Year of requested support	Target (population to be vaccinated)	Indicative amount to be paid by country	Indicative amount to be paid by Gavi
Routine	Pneumococcal vaccine	2019	2018	6,299,410	NA	US$ 81,797,000
Campaign	Measles-rubella[3]	2019	2019		NA	US$ 1,475,135

1.2. Health System Strengthening (HSS) renewal request

Not applicable. Funding for the HSS phase 1 grant had all been disbursed. A no-cost extension for selected activities implemented by UNDP, reflecting <1% of the full grant amount, was requested for the period through June 2018.Funding for the new HSS phase 2 proposal has been approved for 2017 and 2018.

1.3. Indicative interest to introduce new vaccines or request Health System Strengthening support from Gavi in the future[4]

Indicative interest to introduce new vaccines or request HSS support from Gavi	Programme	Expected application year	Expected introduction year
	HPV introduction[5]	To be decided	To be decided

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[1] Joint appraisal was not conducted in 2016, because all existing programmes (penta, IPV) were ending and did not require a renewal. Progress of HSS1 support was reviewed and contributed to the development of the HSS2 proposal.
[2] If the country reporting period deviates from the fiscal period, please provide a short explanation.
[3] Request for MR technical assistance / operational support for the last phase of the campaign in Q1 2019. Renewal request is submitted for review in early 2018, in light of the timing of funding needs.
[4] Providing this information does not constitute any obligation for either the country or Gavi, it merely serves for information purposes.
[5] Introduction subject approval/ clearances from relevant authorities

2. CHANGES IN COUNTRY CONTEXT SINCE LAST JOINT APPRAISAL

India has made considerable progress in reduction of infant mortality from 80 in 1991 to 34 in 2016[6] (SRS). It is also one of the signatories to the Sustainable Development Goals (SDGs), and has committed to achieving SDG Goal 3 by 2030, which includes reduction of neonatal and under 5 child mortality; achieving universal health coverage; and supporting the research and development of vaccines and medicines for the communicable and non-communicable diseases[7]. Universal Immunization Program (UIP) of India is one such program which is also the largest public health program in the world, catering to ~26 million birth cohort and 30 million pregnant women, through 9 million sessions planned across the country every year.

After the 12th Five Year Plan, NITI Aayog, the think tank of GoI, has proposed a shift from Five Year Plan cycle to development of the Vision, Strategy and Action Agenda framework to better align the development strategy. The Three Year Agenda from 2017-18 to 2019-20, offers proposals for policy changes within a relatively short period. Part VI of the Agenda focuses on social sector viz. health, education and skill development. The Agenda is a part of a longer term Fifteen-year Vision and Seven-year Strategy.

The Three Year Agenda emphasis on adequate investment of public financial resources in health; efficient prioritization of spending with focus on preventive healthcare; stewardship role of government; efficient management of publicly provided health care; addressing challenges in human resources for health; sufficient focus on and convergence with programs addressing key social determinants of health.

Along with the Three Year Agenda developed by NITI Aayog, the MoHFW released the National Health Policy 2017. This is a significant milestone for MoHFW, as the new Policy was formulated after a gap of 14 years, to address current and emerging challenges necessitated by the changing socio-economic and epidemiological landscapes since the last National Health Policy was framed in 2002. The key objective of this Policy is to improve health status through concerted policy action in all sectors and expansion of all services provided by the public sector with focus on quality. The Policy envisages reduction in IMR to 28 by 2019 and Under-5 Mortality to 23 by 2025.

On health financing, the Policy proposes raising public health expenditure to 2.5% of the Gross Domestic Product by 2025 (from an existing 1.2%). For the current fiscal year, the government increased the health budget by 27.7% (from 37062 crores ($5.8 billion) in 2016-17 to 47353 crores ($7.4 billion) in 2017-18.

For immunization services, the Policy states that priority would be given to further improve immunization coverage with quality and safety, improve vaccine security as per the National Vaccine policy 2011 and introduction of new vaccines based on epidemiological considerations. The Policy has set a target of increasing full immunization coverage (FIC) to more than 90% by 2025.[8]

Honorable Prime Minister of India has set a vision to accelerate the achievement of 90% FIC by December 2018. Health initiatives including immunization have been one of the topics which have been discussed and reviewed in PRAGATI (Pro-Active Governance And Timely Implementation), a three tier system where Honorable Prime Minister of India holds monthly video conferences with Union Government Secretaries and Chief Secretaries of the States to review progress.

3. PERFORMANCE OF THE IMMUNIZATION SYSTEM IN THE REPORTING PERIOD

### 3.1. Coverage and equity of immunization

As per the latest evaluated coverage NFHS-4 (2015/16), the full immunization coverage is 62 percent. The trend over the years in FIC through evaluated data is provided in Figure 1.

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[6] SRS Bulletin 2017
[7] http://www.un.org/sustainabledevelopment/health/
[8] National Health Policy 2017

**Figure 1: Trends in Full Immunization Coverage (%) over the last 10 years as shown in different surveys**
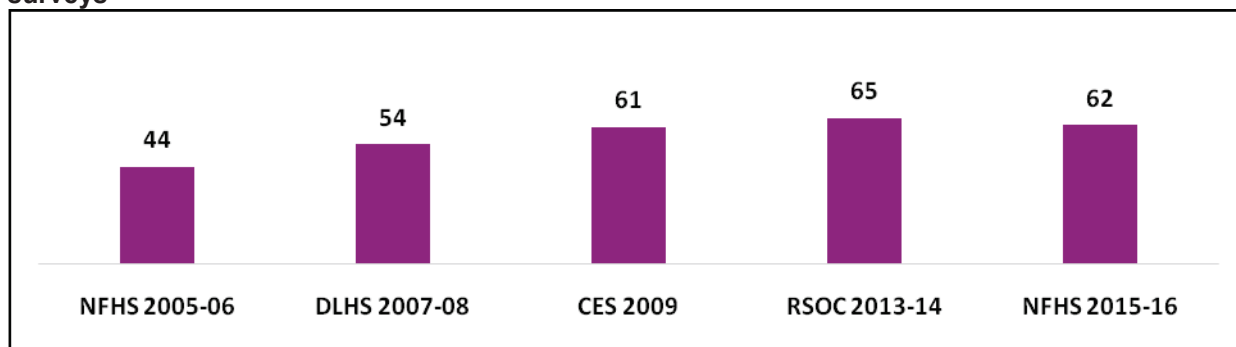
NFHS-4 data reflect that rural areas have undergone a rapid increase from 39% to 61%, compared with urban areas from 58% to 64% from NFHS-3 (2005-06) to NFHS-4 (2015-16) (Figure 2).

Figure 2: Urban rural differentials in FIC (%)
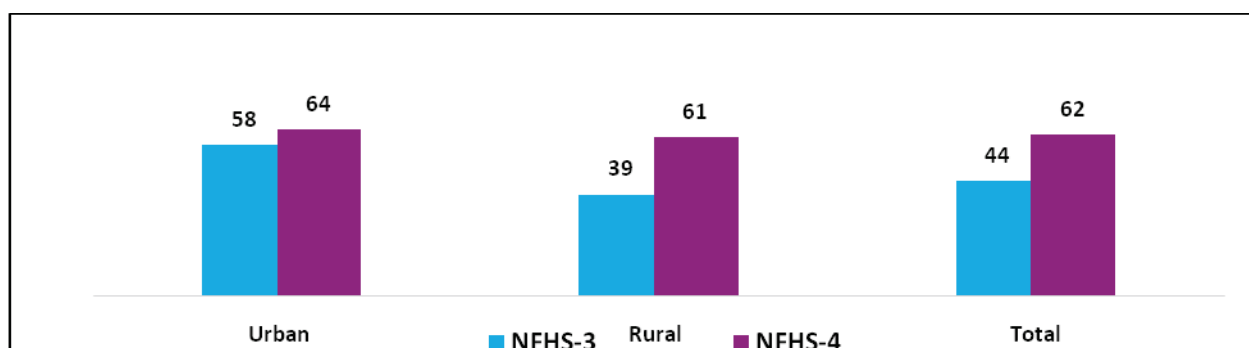
Economic status, caste/tribe and mother's education level are also important determinants to affecting the immunization coverage. Full immunization coverage is lowest among scheduled tribe population (56%). The difference in immunization coverage can also be seen in different wealth quintiles and education level of the mother (Figure 3).

Figure 3: Full immunization coverage (%) among socio-economic groups (NFHS4)
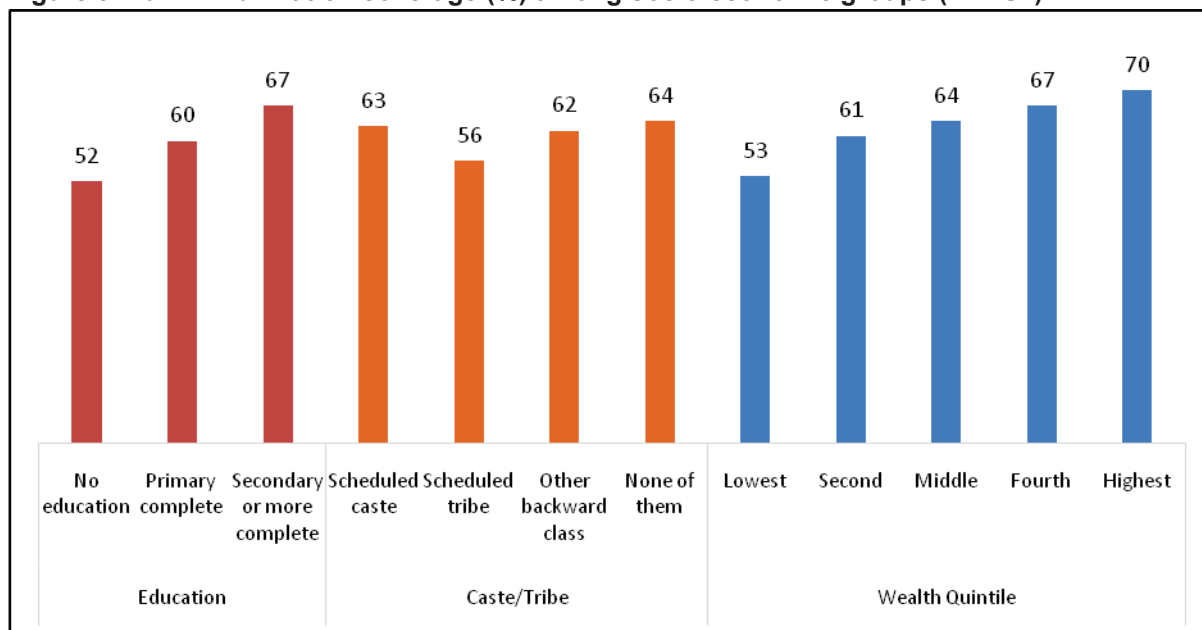
To accelerate progress on immunization, Mission Indradhanush was launched in 2014 with an aim to fully

immunize more than 90% of newborns by 2020 through innovative and planned approaches to reach all children. Not only did Mission Indradhanush aim to rapidly increase the immunization coverage through special drives during specified months, it also focused on strengthening the health systems for addressing equity issues in access to immunization, by intensifying capacity building, micro planning, community mobilization and monitoring efforts and strengthening the accountability at all levels.

Full immunization coverage drove the selection of low- and medium-priority districts to target under Mission Indradhanush. Particular focus was given to areas with vacant sub-centers, ones with multiple, consecutive missed routine immunization sessions, "high risk areas" identified by the polio eradication programme, areas with low immunization coverage identified through measles outbreaks, cases of diphtheria and neonatal tetanus, and small villages/hamlets that did not have independent RI sessions.

The key results from the previous four phases of Mission Indradhanush are shown below (Table 1).To evaluate the impact of first two phases of Mission Indradhanush, Integrated Child Health & Immunization Survey (INCHIS) was conducted in 2015-16. The survey shows an increase of 6.7% in full immunization coverage.

Table 1. Number of key achievements during four phases of Mission Indradhanush[9]

Indicators *(in Lakh)*	Phase 1	Phase 2	Phase 3	Phase 4	Total
Total Number of session held	9.6	11.6	7.5	6.2	34.8
Total Number of Antigen administered	190.1	172.8	151.6	117.9	632.4
Total Number of Pregnant Women Immunized	21.0	16.8	17.8	13.1	68.7
Total Number of pregnant women completely immunized	11.1	8.9	9.6	7.1	36.7
Total Number of children immunized	75.8	70.3	62.1	46.4	254.6
Total Number of children fully immunized	**19.8**	**18.2**	**16.3**	**12.2**	**66.5**
No of children vaccinated for the first time in life	NA	9.3	12.1	6.8	28.2
Total No of Vit-A Doses administered	19.9	20.5	18.0	15.1	73.5
Total No of ORS Packets Distributed	16.9	13.6	21.4	16.6	68.6
Total No of Zinc Tablets Distributed	57.0	44.9	80.7	52.1	234.7

Source: MoHFW; NA: Not available

In 2017, the Prime Minister preponed the target of reaching 90% FIC to end of 2018 (from 2020). Intensified Mission Indradhanush (IMI) was launched as one of the PRAGATI initiatives, to accelerate progress in identified poor performing districts and urban areas. The district selection was based on DPT3/ Pentavalent 3 coverage level. Based on this, 121 districts across 16 states, 17 urban areas across 8 states and 52 districts across 8 NE states were selected. IMI is being conducted from October 2017 to January 2018.
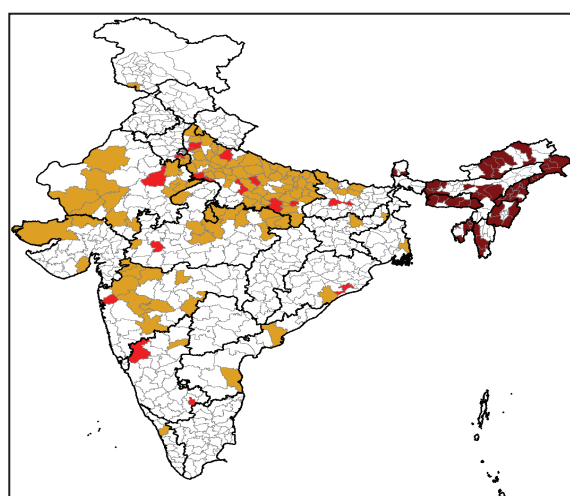

Figure 4: IMI identified area

Priority districts – 121 districts

Urban areas– 17 cities

North-east districts – 52 districts

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[9]Mission Indradhanush Phase 1 – 201 districts (April 2015); Phase 2 – 352 districts (October 2015); Phase 3 – 216 districts (April 2016); Phase 4 – 254 districts (April 2017)

3.2.   Key drivers of low coverage/ equity issues

WHO concurrent monitoring data, which is collected in 31 states (with over 4 million children and 600,000 routine immunization sessions monitored in 2014-2016 alone), provides a rich source of information on trends in immunization coverage, as well as the reasons for partial or no immunization to inform corrective actions.

As per the monitoring data, communication-related issues (including awareness & information gap and AEFI apprehension) are the major reasons for low immunization coverage (Figure 5). Uunavailability of vaccines and other logistical issues (at the immunization sites) have also been identified as the key contributors to the 12% operational gap cited for partial and no immunization.

Figure 5. Reasons for non-/under-immunization
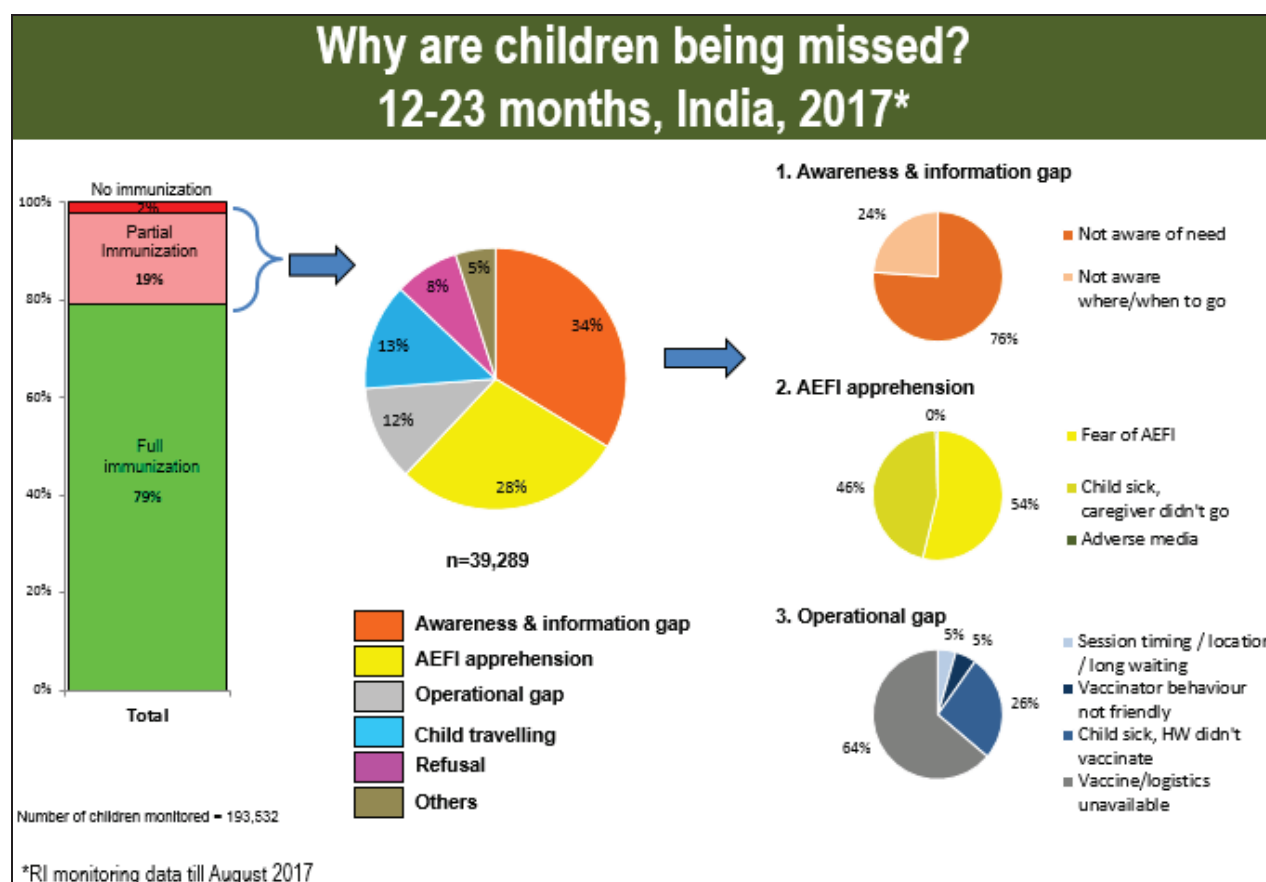
Broader system challenges are documented in the 2017 Gavi HSS Phase 2 proposal. Below is a brief summary of the identified challenges that contribute to the immunization coverage and equity situation, many of which are being addressed in the Gavi HSS grants and with domestic financing.

Table 2. Summary of identified challenges as mentioned in HSS 2 proposal

HSS building blocks	Identified challenges
Cold chain and vaccine logistics management	• Increase in cold chain space requirement in concurrence with new vaccine introductions • Repair and maintenance of cold chain equipment (CCE) • Lack of robust temperature monitoring of CCE
Service delivery	• Weak routine immunization micro planning

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	• Weak supportive supervision
	• Focus on information rather than behavioral change
	• Lack of strategic linkage between routine immunization microplan and communication plan
	• Lack of supervision and monitoring for effective communication
	• Issues specific to urban poor and tribal population
Human resources	• Shortage of human resources
	• Sub-optimal deployment
	• Capacity building needs
Health information system	• Lack of timely availability of data
	• Issues with data completeness, accuracy and consistency
	• Lack of data review for programmatic actions
	• Limited availability of quality VPD surveillance data
Health financing system	• Transitioning from National five-year plan to Developmental plan
	• Fund availability for new vaccines and associated logistics
	• Fund utilization at sub-national level
Leadership and governance	• Inadequate and infrequent programmatic review at various levels of implementation
	• Inadequate inter-sectoral convergence for programme delivery
	• Absence of a specialized health communication cadre

3.3. Data

Immunization coverage data

Health Management Information System (HMIS) is a platform for reporting administrative data. The coverage data from HMIS is available at the sub centre level.

The full immunization coverage as reported from HMIS 2016-17 is 86.9%. As reflected in Figure 6, there are differences in the coverage data from different sources.

Figure 6: Full Immunization Coverage-administrative and evaluated
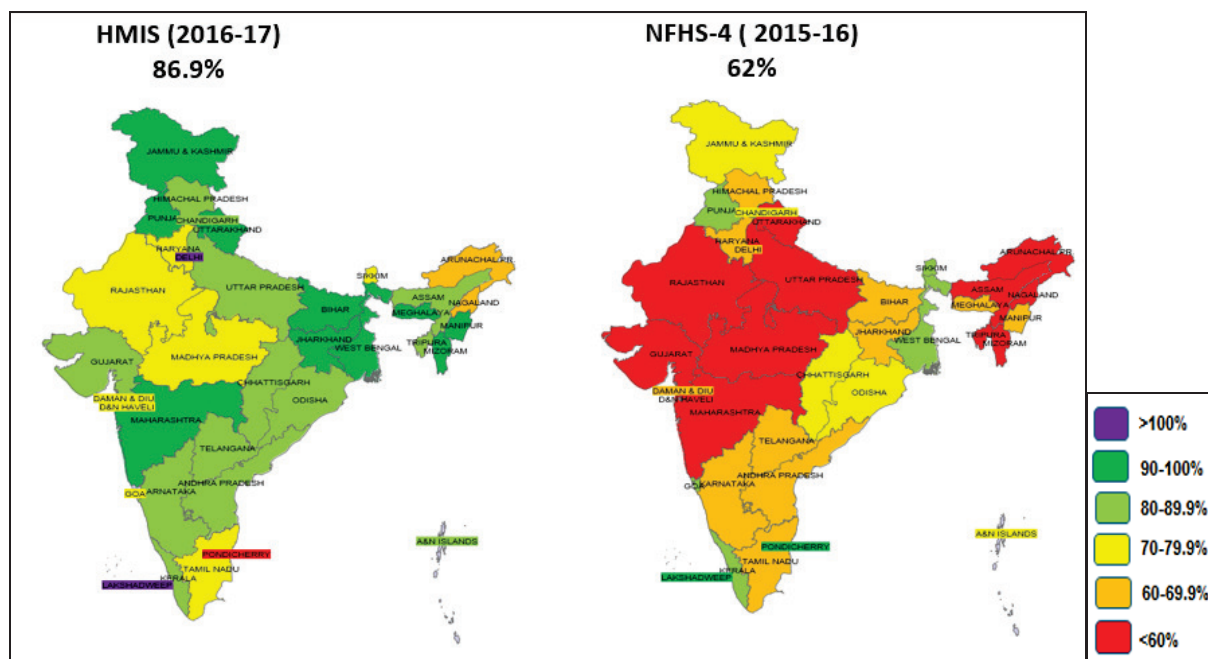
WHO/UNICEF Joint Reporting Form (JRF) provides country specific estimates of the national and subnational coverages based on administrative, official and survey coverage. The antigen wise coverage estimates from JRF 2016 is presented in figure 7.

Figure 7: Antigen wise JRF estimates (2016)
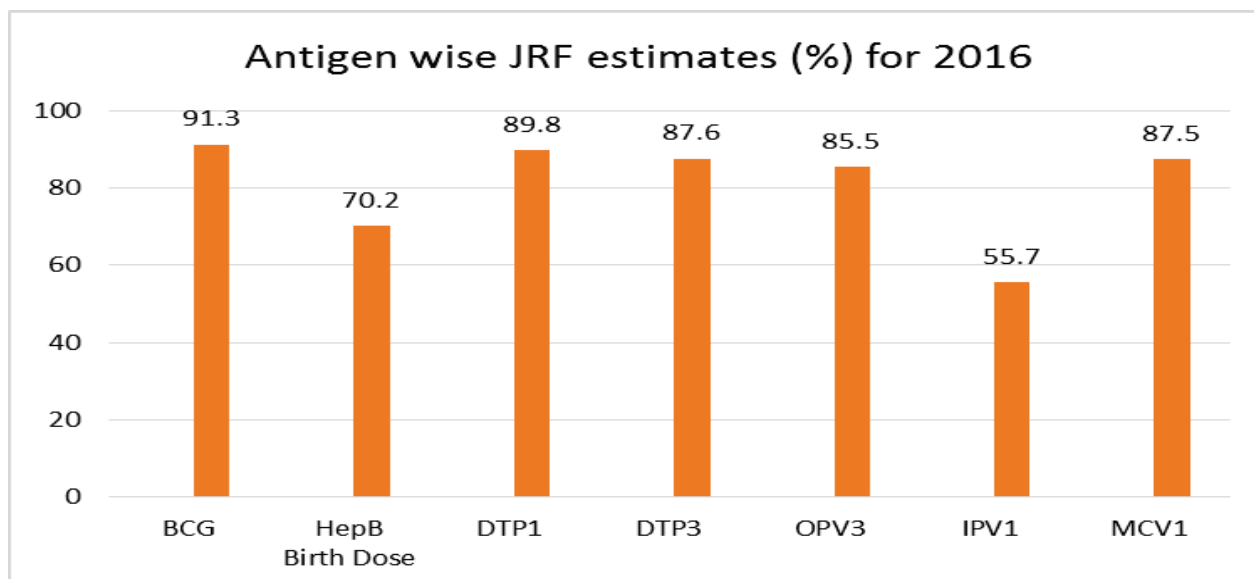
In order to address data quality issues, initiatives like Data Quality Assessment (DQA), development of Improvement plan and Immunization dashboard. DQA exercises were conducted in three states — Haryana (2014), Uttar Pradesh (2015) and Rajasthan (2016); to understand strengths and weaknesses of the data management and reporting system, to assess the quality of data captured in the immunization records and reports, and to develop data quality improvement plans to address the barriers towards improving the quality of reported data.

Immunization dashboard is a common platform to analyse administrative (HMIS, MCTS/RCH) evaluated and concurrent monitoring data for program review. The dashboard also provides state specific feedback to all the states/UTs for initiating corrective measures. This has also led to the improvement in timeliness

and completeness of reporting. The dashboards have become a ready reckoner for central and state governments for all data related to routine immunization. Along with national dashboard, initiatives have been taken to prepare state dashboards for program review at district level.

The new Gavi HSS Phase 2 grant includes a number of interventions to improve immunization data quality, including support to concurrent monitoring, conduct of a new coverage evaluation survey, and implementation of an online application for data entry by the frontline workers (ANMOL).

Immunization supply chain data

The National Cold Chain Management Information System (NCCMIS), supported by the Gavi HSS grant, serves as a platform to monitor the sickness rate of cold chain equipment, support planning and allocation of new equipment and aligning the new vaccine introduction with cold chain availability. NCCMIS is fully functional in all 36 states and union territories, with the system hosted on the government's server. Cold chain sickness rate is a key indicator which demonstrates the efficiency of the immunization supply chain. As per NCCMIS data, 18 states/UTs have a cold chain sickness rate[10] of less than 2%, which is the threshold set by the Government of India.

To strengthen vaccine and logistics management, the Gavi HSS grant also supports the implementation of the Electronic Vaccine Intelligence Network (eVIN). eVIN has been rolled out in 12 states (Assam, Bihar, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Manipur, Nagaland, Odisha, Rajasthan and Uttar Pradesh). It has enabled digitization of the cold chain temperatures, vaccine stocks and flows, and have ensured real-time data availability at nearly 10,500 vaccine stores and cold chain points in all 371 districts of the 12 states. Over 2 million transactions are being made on eVIN every month capturing vaccine issues, receipts, discards and transfers. More than 14,000 data loggers have been installed for real time remote temperature monitoring of cold chain equipment.

eVIN data (September dashboard data) reflects that more than 93% of cold chain points in eVIN states have vaccine availability index[11] of more than 90%; average stock out duration at CCP is 4 days (0.3 to 7.6 days); more than 90% of cold chain equipment (where data loggers are installed) remain in working status for 90% of time or more in a month.

Vaccine-preventable disease surveillance data

The Government of India's cMYP underpins the need for a robust surveillance system to detect cases and deaths due to vaccine-preventable diseases (VPDs) to generate evidence to inform the decision on introducing the vaccine as well as to measure its impact on the disease after its introduction. Completeness and quality of VPD surveillance data is also necessary to observe the trends in disease incidence and geographical spread to help plan to strengthen the immunization programme. Reporting of VPDs has been an integral part of the UIP reporting system.

Quality surveillance data for vaccine preventable diseases (VPDs) that is currently available in India is limited. Using the platform of polio and measles surveillance systems, WHO in concurrence with the Government of India designed a laboratory supported surveillance for additional vaccine-preventable diseases such as diphtheria, pertussis and neonatal tetanus. WHO in collaboration with MoHFW took the following initiatives for expansion of measles and polio surveillance platform to other VPDs (diphtheria, pertussis and neonatal tetanus) during 2014-2016.

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[10] Data as on 1st September 2017
[11] Percentage of cold chain points in the state which have vaccine availability for more than 27 days in a month. Vaccines considered: BCG, bOPV, Measles and Pentavalent. For Himachal Pradesh MR is considered instead of Measles.

Figure 8. Progress in VPD surveillance

- Developed VPD surveillance guidelines & training materials.
- Established one reference (CMC Vellore) and six sub-national laboratories by providing support for system strengthening, capacity building and logistics.
- Capacity building of lab personnel in coordination with Public Health England and CDC Atlanta.
- State and districts workshops conducted in Bihar, Haryana, Kerala and Uttar Pradesh.
- Regular data sharing following case classification initiated from May 2016. The data being captured is representative of only a few states that have initiated the surveillance system.
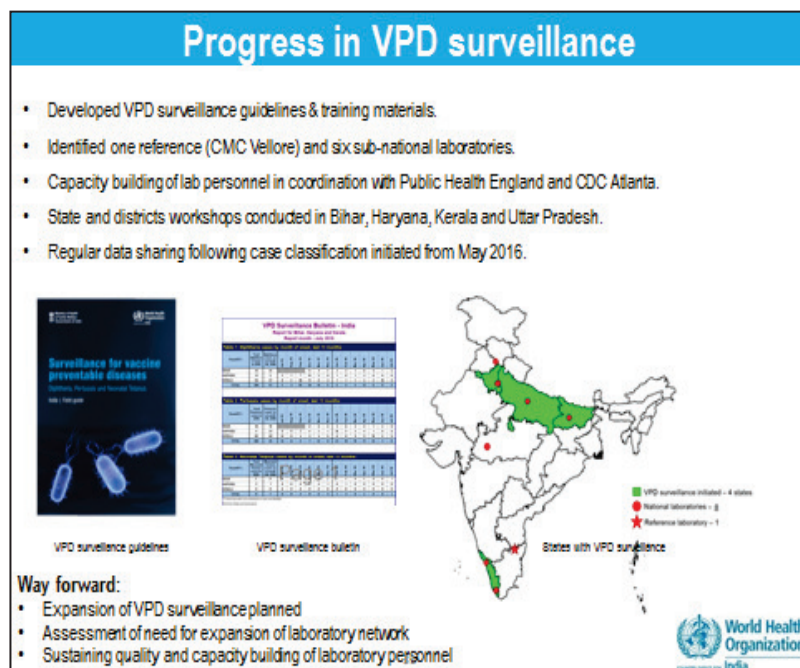
Progress has been made as part of HSS Phase 1 implementation:

- Trainings conducted on operational guidelines for effective implementation of VPD surveillance resulted in increased awareness among health care providers of both public and private sector.
- Laboratory-supported VPD surveillance for diphtheria, pertussis and neonatal tetanus functional in the states of Bihar, Haryana, Kerala, Madhya Pradesh and Uttar Pradesh.
- Quality surveillance data on diphtheria, pertussis and neonatal tetanus has started flowing in from the states where the launch was done.
    - Number of suspected VPD cases reported in 2016: 1391 diphtheria cases, 295 pertussis cases and 82 neonatal tetanus cases
    - Number of suspected VPD cases reported as of October 2017: 1009 diphtheria cases, 1119 pertussis cases, 43 neonatal tetanus cases
- Areas reporting VPDs are being targeted for special immunization drives under Intensified Mission Indradhanush. The data has helped district and state to take targeted actions both in terms of case management and public health intervention in response to case identification.
- State-level launch workshops for VPD surveillance recently conducted in the states of Himachal Pradesh and Punjab. States initiated in 2017 - Madhya Pradesh, Himachal Pradesh & Punjab. Further expansion is planned during 2018-2021.

Year	State initiated VPD Surveillance
2015	Haryana
2016	Bihar, Kerala, Uttar Pradesh
2017	Himachal Pradesh, Madhya Pradesh, Punjab

Figure 9. State initiated VPD surveillance

Vaccine safety data

AEFI secretariat has been instrumental in enhancing the capacity for AEFI surveillance and streamlining the National AEFI Surveillance program. The AEFI secretariat is certified from the National Quality Assurance Standards for national level processes related to sAEFI surveillance, Pharmacovigilance (PV) coordination, National Regulatory Authority Institutional Development Plan (NRA IDP) and work for quality certification and has received the highest maturity level of 4.

Vaccine Adverse Events Information Management System (VAEIMS), a web based tool has been developed to improve the availability of information from investigations of AEFI cases. This software will enable the entry of information at the district level, where information related to reported serious/ severe

AEFI cases, currently manually recorded and transmitted will be entered in the software. The causality forms generated by the state AEFI committee will be entered at the state level. This system has been designed with dashboards, graphs, charts and maps in order to provide immunization managers a visualization of data. It will help to have access to real time data or information for strengthening causality assessment. This online system has been successfully piloted in all districts of Madhya Pradesh and West Bengal (from December 2016), and roll out to other states is proposed in 2018. Further versions of the tool, will include the linkage with the block AEFI registers to enable collation of this data for actions. VAEIMS is proposed to be E2B compatible for global sharing of AEFI data with required explicit permission of GoI WHO-India Country Office in close coordination of the AEFI Secretariat, Immunization Technical Support Unit (ITSU) is supporting MoHFW in development, training of district/state users and launch of VAEIMS.

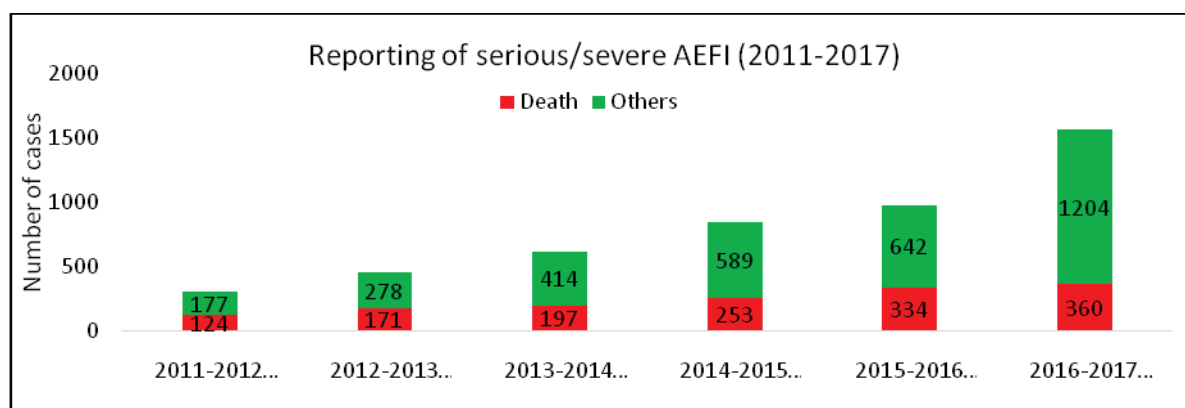**Figure 10: Reporting of serious/ severe AEFI cases (2011-2017)[12]**

Table 3: Key achievements under AEFI surveillance:

Component	Status			
	2013-14	**2014-15**	**2015-16**	**2016-17***
National AEFI system is active with a designated national committee	Yes	Yes	Yes	Yes
Number of reported serious/severe AEFI cases reported during the financial year	611	842	976	1,564
% of serious/severe AEFI cases notified in a timely manner*	27%	24%	24%	26%
% of serious/severe AEFI cases investigated (PIR/PCIF received at national level) in a timely manner as per national guidelines*	31%	35%	30%	15%
% of serious/severe AEFI cases classified within time as per national guidelines*	3.1%	12.1%	1.7%	7.0%
NRA AEFI Program assessment held				Yes
Spokesperson training on AEFI			Yes (15 states)	

Source: AEFI secretariat
Note: Data as of 21-October-2017; Cases are included in a financial year based on date of vaccination.
*For FY 2016-17 timeliness of cases investigated and classified calculated as per AEFI operational guidelines 2015.
All denominators taken as number of reported AEFI cases with date of vaccination in a financial year; cases with missing date of notification, date of receipt of FIR/PIR/DIR received at national level are excluded from the numerator.

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[12] Source: AEFI secretariat

3.4. Role and engagement of different stakeholders in the immunization system

Under the stewardship of MoHFW, the relevant stakeholders perform pivotal functions in strengthening the immunization programme of India. The processes are monitored by Immunization Action Group (IAG) with Joint Secretary (RCH), as chairperson, MoHFW officials and developmental partner representatives as members. Although, the IAG meets quarterly, other immunization specific meetings are held regularly with MoHFW and partners.

The Deputy Commissioner (Immunization I/C), Deputy Commissioner (UIP), Assistant Commissioner (Immunization), along with officials from lead implementers provide technical oversight in programme (including programme planning, implementation, monitoring and evaluation and reporting). They are assisted by a team of other professional officers including specialists in procurement & cold chain and epidemiologists. At state, district and below levels the state teams of lead implementers coordinate with National teams regarding technical and managerial issues related to UIP.

Immunization Technical Support Unit (ITSU) has been working in alignment with Immunization Division of MoHFW providing techno-managerial support to Immunization Division. ITSU has a multidisciplinary technical team of thematic experts with expertise in program design and management, immunization and its technical areas, policy research, advocacy and communications. ITSU has been instrumental in support for introduction of new vaccines; strengthening AEFI program of UIP with AEFI secretariat housed at ITSU; health system strengthening for immunization, data intelligence, cold chain and vaccine logistics and other service delivery and demand generation activities.

The lead partners in UIP are WHO, UNICEF, UNDP and JSI.

Headquartered in Delhi, WHO National Public Health Surveillance Project (NPSP) has 6 regional offices (North, East, Central, South, Uttar Pradesh and Bihar) comprising 279 field unit offices with a workforce of 350 medical officers and 950 field monitors covering all states/union territories of country and caters to each district. The NPSP's robust surveillance system draws strength from the network of 40,000 reporting sites and eight WHO accredited national poliovirus laboratories. As a lead partner agency for health, WHO provides technical support to the Government of India for routine immunization intensification activities; polio eradication; expansion of VPD surveillance; measles elimination & rubella control; new vaccine introduction, etc.

UNICEF-India has 13 field offices at state headquarters and in other states operations are handled centrally by the Country Office in New Delhi. UNICEF is the key partner of GoI in routine immunization, cold chain system strengthening, coverage & equity, communication and demand generation, polio eradication, measles and rubella control and new vaccine introduction. UNICEF reviews all the activities conducted at state and national level on regular basis and conducts mid-year review and end year review on annual basis.

UNDP has played an essential role in strengthening of cold chain space in UIP through eVIN implementation. UNDP has a national team at New Delhi with state team comprising of 3 personnel including the state team lead, IT officer and admin and finance assistant.

JSI has laid a foundation in UIP with being the lead partner for introduction of rotavirus vaccine. JSI has also developed ASHA FAQs which serves as an important tool for addressing the demand side issues related to immunization.

The CSOs that are involved in health care contribute in multiple ways, often acting as intermediaries between communities and governments, by creating demand for, as well as providing services in response to community needs, adapted to local conditions and lobbying for equity and pro-poor health policies. The CSOs reach remote and underserved areas and populations, providing a range of technical skills from planning to service delivery. Acting as catalysts, CSOs also contribute to public understanding and enhancing of public information, thus building better and more effective interaction between services and clients and enhancing community control over health interventions.

These organisations have played a pivotal role in contributing to certain achievements in India's public health sector, especially in polio eradication and RI. It is evident that polio eradication efforts created opportunities to deliver other interventions but often those opportunities could not be used due to lack of infrastructure. With timely and appropriate involvement of CSOs at different levels, these will be tapped to improve equitable immunization coverage.

Strengthening ongoing multi-stakeholder partnerships with community-based (district, block, and village level) institutions and engaging different CSOs networks of national and state presence, professional bodies such as IAP/IMA, in order to create an influencer/ ambassadors that can play a role of positive advocates for the immunization programme, reinforce the reach of demand generation in communities will be essential in facilitating mobilization and motivating communities for uptake of RI and new vaccines. Different networks and partnerships that have already been engaged and will be further strengthened include influencers' (religious, occupational and community) network, Village Health Sanitation and Nutrition Committees, Rogi KalyanSamiti, Self-help Groups, Mahila Smakhya; partnership with local-government institutions including State Institute of Rural Development, Panchayati Raj Institutions, municipal bodies; partnership with folk-culture for indigenous tribes, faith-based organizations etc., partnership with academic institutions and engaging members of the Alliance for Immunization and Health (Gavi-supported CSO platform) in India.

The cross sector collaboration has been increased with the launch of IMI. The IMI strategy require support from key ministries and departments; strong leadership through meaningful collaboration between different arms of the government, working closely with the community, civil society and the youth.

- Other ministries which provide support for Intensified Mission Indradhanush are Women & Child Development (WCD), Panchayati Raj, Urban Development, Housing and Urban Poverty Alleviation, Defence, Sports & Youth Affairs, Human Resource Development, Education, Minority Affairs, Information & Broadcasting, Railways, Home Affairs, Labour and Employment.
- The departments in MoHFW involved are Urban Health division (NHM), Maternal and Child Health division, Rashtriya Bal Swasthya Karyakram (RBSK), Information, Education & Communication (IEC) Division.
- NGOs, Public Relations, CSOs, Rotary International, NSS, National Cadet Corps (NCC), Nehru Yuva Kendra, MSW, along with relevant stakeholders are involved as mobilizers in the activity.

4. PERFORMANCE OF GAVI GRANTS IN THE REPORTING PERIOD

4.1. Programmatic performance

Gavi supported

a. Measles- Rubella campaigns

India is a signatory to the 2013 South-East Asia (SEA) Regional Committee resolution, setting the goal for Measles elimination and Rubella/CRS control by 2020. In line with this goal, the Government of India launched the Measles-Rubella Vaccination Campaign on 5 February 2017,to vaccinate approximately 400 million children in the age group of 9 months to <15 years over a period of over 2 years (2017-19). The campaign is followed by introduction of Rubella vaccine into routine immunization, to rapidly build population immunity against measles and rubella. Gavi is supporting the initial phases of the campaign, covering over 40% of the target population.

Like any large scale vaccination campaign, there were challenges during the implementation of phase 1 of the campaign, including social media rumours, inadequate coordination among various ministries, variable support from the private practitioners, political commitment and reluctance from private schools. Based on the MR India Expert Advisory Group (IEAG) recommendations, India stepped up its efforts to ensure timely roll-out of the remaining phases of MR campaign with high coverage (>95%). lesson learnt from Phase I campaign states that have been incorporated in the Phase 2 preparations include the following:

- Net campaign duration revised to from 4 to 5 weeks (2 weeks school+ 2 weeks outreach+1-week sweeping activity)
- School activities have been stretched to two weeks school campaign (extended from one week to two weeks now)
- Special training materials developed for school teachers, for use in parent teachers meeting and orientations
- Urban area focus have been prioritized further with heightened social mobilization
- Sensitization of school teachers and paediatricians with structures meeting for IAP/IMA
- Underserved areas with dedicated SMO/RRT deployment in identified urban pockets in minority population
- Standardized pre-campaign preparedness assessment tool used by central monitors from the national level
- More focused social media messaging for MR vaccination campaign designed for use in WhatsApp
- Celebrity engagement including Amitabh Bachchan at the national level and other state level film stars at state level

About 60 million (6 crore) children are reported to have been vaccinated with MR vaccine under the two phases of this campaign completed in 11 states and ongoing in two states. The MoHFW has now issued directives to 11 states for MR campaign in January 2018 and 5 states in April 2018 to begin preparations for the forthcoming phases.
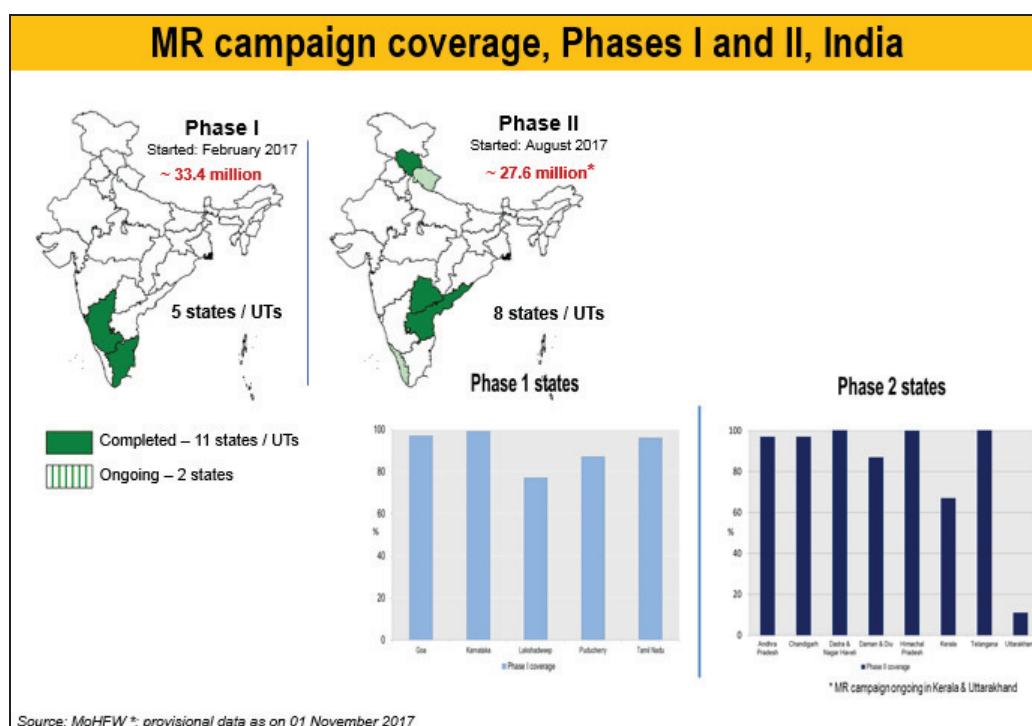

Figure 11: MR Campaign coverage, Phase I and Phase II

Real-time Rapid Convenience Monitoring (RCM) during campaigns, sero-surveys and post-campaign coverage evaluation surveys are planned/ conducted to assess the reach of the MR campaign in the identified high risk and underserved populations.

Establishment of laboratory-supported, outbreak-based surveillance network across the country is providing vital assistance for measles control activities in the country to guide policy-making. The system is supported by 14 WHO-accredited laboratories, including two reference labs. Currently, the quality and sensitivity of surveillance is being enhanced through transitioning from outbreak-based to modified case-based surveillance initiated in 15 states during 2016-17. There are now more than 41 000 measles-rubella

reporting sites in the country. Lab-supported MR surveillance will be expanded in the future through a network of 45 viral testing labs run by the Indian Centre of Medical Research (ICMR), with WHO technical assistance. Sentinel-site congenital rubella syndrome surveillance has been established at six locations in India for burden estimation by the Indian Council of Medical Research.

b. Pneumococcal conjugate vaccine (PCV) introduction

On 13 May 2017, the Government of India introduced PCV nationally through a phased rollout (as per the plan given in box), with the catalytic support from Gavi.

> - **Year 1:** Himachal Pradesh (100%), Bihar (50% state birth cohort [SBC]), Uttar Pradesh (10% SBC)
>
> - **Year 2:** Bihar (100%), Uttar Pradesh (20%), Madhya Pradesh (100%), Rajasthan (25%)
>
> - **Year 3:** Bihar (100%), Uttar Pradesh (30%), Rajasthan (50%)

Currently, the vaccine has been rolled out to approximately 2.1 million (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.   For the partial-state introductions, districts selection was based primarily on under-five mortality rate and geographical contiguousness.

Figure 12: Geographical scope of PCV roll out

To ensure smooth introduction of PCV, MoHFW worked in collaboration with development partners such as WHO, UNICEF, UNDP, ITSU, GHS as per their defined roles and responsibilities. Rapid monitoring of PCV introduction indicated smooth introduction of the vaccine so far.

As per administrative coverage data, more than 0.5 million children have been vaccinated with PCV in 35 districts of three states through October 2017.
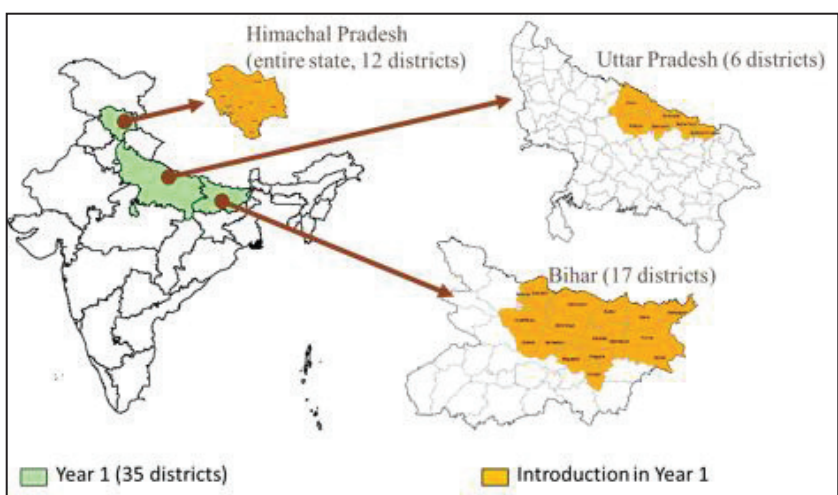
MoHFW in consultation with WHO and other development partners is now working on tentative roll-out timelines for phase II PCV introduction plan in 2018, keeping in mind other competing priorities including IMI, new vaccine introductions, MR campaign.

c. IPV introduction

India has now been polio-free for more than 6 years. Moving forward with the agenda to safeguard its polio-free status until global polio certification in sync with the global polio endgame strategy, India switched from tOPV to bOPV in April 2016, as well as introduced inactivated poliovirus vaccine (IPV) into the immunization schedule in phases by state, beginning in five states in November 2015.

Based on recommendations of Strategic Advisory Group of Experts on immunization (SAGE), India Expert Advisory Group (IEAG) for polio eradication and NTAGI, the Government of India decided to introduce a single dose of inactivated poliovirus vaccine (IPV) in the Universal Immunization Programme.

Due to global IPV supply shortage and backed by IEAG recommendations, India decided to introduce two-dose fractional IPV schedule in the remaining 8 high performing states/UTs before the switch and subsequent switchover from full-dose IPV to two dose fIPV schedule in the other states. As of November

2017, all 36 states/UTs switched from using a full dose (single dose at 14 weeks) to a fractional dose of IPV (two doses at 6 & 14 weeks, 0.1 (intradermal) as a dose-sparing strategy.

Prior to IPV introduction, WHO, UNICEF and other partner agencies supported MoHFW with a number of preparatory activities. These included assessing district/state preparedness, developing operational guidelines including technical training package for capacity-building of immunization managers and health workers, implementing comprehensive communications strategies, and updating recording, reporting and tracking tools. Simultaneous rapid monitoring findings shared with MoHFW were pivotal in planning for expansion of fIPV schedule in the remaining states.

Since the introduction in November 2015 until July 2017, an estimated 12.4 million children have been vaccinated with full dose of IPV, about 8.3 million children have received first dose of IPV and 4.9 million children received second dose of fIPV.

An example of India's efforts to prevent further cases of polio and treat any evidence of the virus as an emergency is the response in Telangana state to the detection of a single isolate of vaccine-derived poliovirus type 2 in an environmental sample from a sewage system serving the districts of Hyderabad and Rangareddy. Within 14 days – the recommended maximum interval – the state conducted a mass vaccination campaign using fractional IPV, during which more than 311 000 children aged six weeks to three years of age were vaccinated over six days at fixed sites in two districts, achieving an estimated coverage rate of 94%.

Following the first year of introduction, the IPV programme has been successfully transitioned from Gavi to the Government of India in 2016.

d. Pentavalent vaccine introduction

The nationwide rollout of pentavalent vaccine from 2011 – 2015 was supported by Gavi. This vaccine programme was also successfully transitioned to the Government of India in 2016.

e. Gavi HSS Phase 1 (2014 - 2017)

The Gavi HSS 1 grant ($107 million) focuses on 12 high priority states to address the main causes of coverage and equity deficits of the immunization system. The grant is implemented by WHO, UNICEF, and UNDP. The original implementation period was 2014-2016. Upon request by the Government of India, a no-cost extension was granted for selected activities that are being implemented by UNICEF and UNDP. At the time of submission of this joint appraisal report, further extension of selected activities is being considered, to carry forward <1% of the grant amount into early 2018.

Table 4 shows the targets achievements for the tailored intermediate results indicators.

Table 4. HSS 1 grant – tailored intermediate results indicators, and achievement against targets

Indicator	Targets			Achievement		
	2014	2015	2016	2014	2015	2016
Number of HSS supported states (9) where cold chain breakdown rate meets the national standard of less than 2%	2	4	9	5	5	
Percentage of monitored session sites where all vaccines and diluents are available: - UP - Bihar	80% 60%	83% 65%	85% 75%	71% 60%	78% 73%	
Percentage of high risk areas receiving RI services as per RI micro-plans	50%	60%	75%	94%	94%	95%
Percentage of front-line workers who have received intensified and focused RI training	50%	70%	90%	84%	85%	

Selected achievements under each of the five HSS objectives is summarised below:

Objective 1: Strengthen cold chain management in poor performing states through improved human resources capacity, institutional strengthening and supporting supervision (led by UNICEF)

- *Expansion of Cold Chain Capacity (5,433 Cold Chain Equipment procured):*
    - Ice lined Refrigerators (ILR) and Deep Freezers (DF): 5160
    - Walk-in Cold rooms along with associated equipment (DG Set and Servo Stabilizer): 54
    - Cold Chain Toolkits & spare parts for repair and maintenance of Cold Chain equipment: 175
    - Solar Direct Drive refrigerators (SDD): 100

- *Increased capacity to repair and maintain CCE*
    - Development modules for repair and maintenance of WIC/WIF, ILR/DF and voltage stabilizer, CCE and spare parts identification and Cold Chain handlers' module
    - Total of 2,282 Staff trained which includes 766 Cold Chain Technicians, 1415 staff on NCCMIS module and 102 program managers on ECCVMC module. A pool of master technicians was created
    - Training film was developed on repair and maintenance of ILR/DF and Voltage Stabilizer
    - National Cold Chain and Vaccine Logistics Action Plan (NCCVLAP) was developed

- *Innovation and New Technology*
    - Shipment and Installation of Solar Direct Drives is in progress
    - Prototype was developed for "No frost" and "anti-freeze" technology ILR at NCCRC, Pune
    - Solar Hybrid Study was conducted in Maharashtra
    - Prototype was developed for Vaccine Carrier with digital thermometer
    - Generic faceplate was developed and piloted for all kinds of ILR & DF

- *Data Management*
    - Web based tool- "NCCMIS" was developed to monitor the cold chain system in real time setting across the country

- *Strengthening Institutional Capacity*
    - Establishment of the National Cold Chain Vaccine Management Resource Center (NCCVMRC) in Delhi and strengthening of the National Cold Chain Training Center (NCCTC) in Pune and good utilization of the facilities.
    - Cold Chain Secretariat was established at NCCVMRC, Delhi
    - Innovation and CCE test laboratory development at NCCRC, Pune

- *Monitoring and Supervision*
    - Android tool was developed for monitoring and supportive supervision of cold chain points
    - A total of 2,673 supervisory visits were made and cold chain dashboards were developed which were shared with Govt and partners
    - EVM assessment was conducted at national level and state specific in 11 states

Indicators not achieved:

Activity 1.3	Implement EVM improvement plans
	- No. of states that have completed an EVM assessment - No. of states who have developed an improvement plan (IP) - No. of states who have integrated an IP into the annual health plan
	Target for all the above indicators was 12 states and 11 states achieved the target. EVM was not conducted in state of Gujarat due to following reasons: -
	EVM was conducted in state of Gujarat in 2012 and the next assessment was due in 2017. However, the state had decided to conduct the assessment using the new, global EVM 2.0 tool, but the development had been delayed. Also, the state was in process of implementation of previous EVM recommendations; hence, EVM in Gujarat was re-scheduled to 2018.

Objective 2: Design and implement an eVIN (electronic Vaccine Intelligence Network) that will enable real time information on cold chain temperatures and vaccine stocks and flows (led by UNDP)

All the targets agreed in the grant performance framework have been achieved, as detailed below:

Table 5. HSS 1 grant – tailored intermediate results indicators, and achievement against targets

Indicator	Targets			Achievement			
	2014	2015	2016	2014	2015	2016	October 2017
Percentage of cold rooms operational with wireless data loggers for temperature monitoring	1%	2%	100%	**1%**	**2%**	**100%** (4614/4617)	**96%** (9697/10128)
Percentage of states implementing online vaccine stock management system	0%	25%	100%	**0%** (0/12)	**25%** (3/12)	**92%** (11/12)	**100%** (12/12)
Number of vaccine logistics cold chain managers trained on eVIN	0%	6%	100%	**0%** (0/371)	**43%** (160/371)	**97%** (359/371)	**100%** (378/378)
Percentage of vaccine logistics managers provided with refresher training for vaccine intelligence	0%	0%	100%	**0%** (0/371)	**0%** (0/371)	**43%** (160/371)	**100%** (378/378)
Number of media analysis reports for 2013, 2014, 2015 and 2016	50%	75%	100%	**50%** (2/4)	**75%** (3/4)	**100%** (4/4)	**NA**
Establishment of a research network set up for evidence building	100%	100%	100%	**0%** (0/1)	**100%** (1/1)	**100%** (1/1)	**100%** (1/1)

State specific achievements are provided in annexure.

- eVIN (electronic vaccine intelligence network) was rolled out in 2015 to strengthen immunization vaccine logistics and cold chain management. By 2017, eVIN has been rolled out in 12 states of India - representing more than 60% of the target population. eVIN improved the capacity of 17,237 government cold chain handling staff, in managing the vaccine stocks information, through a smartphone. Moreover, 13,664 vaccine storing cold chain equipment were made operational with wireless data loggers for temperature monitoring.
- With more than 100 million temperature samples and 2 million online transactions logged into the server every month, eVIN is now a warehouse of big data, encouraging transparency, accountability and providing policymakers the tools to ensure equity in service delivery[13].
- Availability of live data of vaccine stocks through eVIN has helped in managing vaccine stocks and preventing instances of abnormal stock in the states. In a short span of time a 72% reduction is recorded in 'Stock out' events. Moreover, the stock out duration reduced from 5 days to 3 days[14].
- eVIN has been pivotal in aiding states in (a) identifying and utilizing older stocks of vaccines, prior to new vaccine introduction and (b) identifying near expiry stock and planning its timely utilisation. This reduced vaccine wastage and incurred huge cost savings.

Objective 3: Increase demand for RI through a national Behavioural Change and Communication (BCC) strategy, develop, broadcast and communicate immunization messages (led by UNICEF)

- *Strengthening institutional structures through State and District SBCC Cells*
    - Odisha state strengthened its Centre of Excellence in communication, set up in the State Institute of Health and Family Welfare (SIHFW), and 30 District- SBCC cells
    - Madhya Pradesh state converted its existing EIC Bureau as SBCC cell, and set up two District SBCC Cells
    - Uttar Pradesh set up an SBCC Cell at the office of the National Health Mission, and 18 Divisional SBCC cells
    - Assam set up an SBCC Cell in the Department of Health and Family Welfare
    - Other states strengthened their IEC Bureaus with dedicated SBCC HR, supported under Gavi
    - State-specific communication strategies developed

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[13] https://www.huffingtonpost.com/the-immunization-innovations-of-tomorrow-are-here
[14] https://www.technet-21.org/Pradeep-Haldar-Day-2_Plenary

- *Enhanced PIP budgeting*: In major Gavi states of Uttar Pradesh, Madhya Pradesh, Jharkhand and Chhattisgarh, sustained advocacy under HSS led to improved planning for SBCC in the annual Program Implementation Plans (PIPs) of the states.

- *Capacity Building*
    - To build capacity of health work force in social and behaviour change communication (SBCC) for Routine Immunization demand generation, a training package 'Tarang' was developed by C4D. The package was used across 12 States to strengthen SBCC capacity.
    - Critical Appraisal Skill Program: Developed with Experts from Oxford and Reuters to develop capacities of key media professional and students across the country. In2015 CAS pilot programme with 40 journalism students from IIMC and 40 mid-level journalists was done. In 2017 60 key media influencers (journalists and academicians) trained as trainers to deliver the public health module
    - AEFI spokesperson training: Six Regional AEFI training workshops were held where 250 officials were trained which includes State and District Immunization Managers and State and District AEFI Committee members

- *Media Engagement:*
    - From 2014-2017 nearly 150 media went to high priority states of Mission Indradhanush, for documenting success stories on immunization. This resulted in 400 media articles and photo essays
    - Engagement with Radio: 12 capacity building workshops were held and over 180 radio jockeys were trained. A Radio4Child Facebook page was created with over a 1000 radio journalists from across the country. Radio4Child awards were established with first award held in Mumbai in the presence of UNICEF Celebrity Advocate Ms. Madhuri Dixit.
    - Engagement with Urdu media: From 2014-17, eight capacity building interventions and over 15 media field visits have been conducted with participation of over 50 media in each workshop. More than 1,000 articles have been published and around 5 mainline Urdu dailies are dedicating a complete page on health issues including RI. This has led to a 70 per cent increase in balanced reportage on RI in Urdu media.

- *Celebrity Engagement:*
    - 360 degree communication strategy featuring Mr. Amitabh Bachchan was created. The strategy aim is to simplify the number of visits a child needs to be taken to the facility for completing the vaccination with a slogan "5 saal 7 baar" meaning 7 times in 5 years to complete the vaccination. The package includes TV spot, Radio spot, Press Ads, Leaflets, poster, Banner, Cinema slides and Video FAQs for FLWs
    - Ek Star Aisa Bhi: Former Indian Cricket Captain, Virender Sehwag was mobilized for RI TV Series and AEFI films, titled "Ek Star Aisa Bhi". Films were telecast across 8 channels of Zee News reaching out to over 90 million viewers.

- *Mid media*
    A total of 18,290 shows of street plays and AV shows were conducted which reached out to over 1.6 million target audience in 10 states leading to increase in the knowledge on RI and change in attitude towards RI.

- *Social Mobilization for Routine Immunization- SMNet*
    - Total 297,685 IPC sessions (Mother Meetings) were held from January 2014 to May 2017
    - Impact of SMNet interventions on RI in high-risk pockets: Increase in immunization coverage in high risk pockets from 70% in 2011 to 81% in 2015 in Uttar Pradesh and from 69% in 2011 to 88% in Bihar in 2015. (source: Community Mobilizer Field Book SMNet MIS)

- *Communication Monitoring*
    - Communication Monitoring Tools (3) were developed and institutionalized
    - Six monthly dashboards- sharing with states and districts for action
    - Through Communication monitoring and supportive supervision, the communication plans availability and IEC visibility went up significantly across the states

Indicators not achieved:

Activity 3.1	Implement Multi-pronged national BCC strategy development and operational plans
	Number of states that have developed their own evidence-based BCC and social mobilization plan for immunization. (Total State 12 = Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Manipur, Nagaland, Odisha, Rajasthan, and UP)
	Target of 3 North East States could not be completed. Communication consultants were placed in these states to support in planning and implementation of communication activities. There were two consultants, one for Nagaland and Manipur and a second for Arunachal Pradesh. These three states are very small and the consultants were able to fulfil the need of SBCC cell in the states.

Objective 4: Strengthen the evidence base for improved policy-making on programmatic areas through a well developed and implemented national M&E plan and research framework (led by UNDP)

UNDP supported the setting up of a 'Vaccines & Immunization Research Network' and its "Scientific Advisory Group (SAG)" for evidence building and to guide new research and rolled-out, four researches recommended by SAG.

Objective 5: Leverage the success of the National Polio Surveillance Project to strengthen RI service delivery and VPD surveillance in 8 priority states (Led by WHO)

Under GAVI HSS I, WHO India was provided US$ 25.5 million for leveraging its polio experience and field network to support Government of India's routine immunization intensification efforts through the following activities: (a) strengthening of accountability mechanisms; (b) monitoring of routine immunization activities; (c) capacity-building of government health staff and frontline workers; (d) micro-planning for inclusion of high-risk populations identified under polio programme into routine immunization; (e) risk assessment, planning and monitoring of special immunization drives such as Mission Indradhanush; (f) supporting surveillance for vaccine-preventable disease (VPDs) such as diphtheria, pertussis and neonatal tetanus; (g) supporting introduction of new and underutilized vaccines through preparedness assessment, capacity building and monitoring of activity; (h) facilitating surveillance cum UIP reviews.

With HSS support both for activities and human resources cost, it was possible to scale up some of the existing activities and undertake some additional activities to support the intensification of the routine immunization programme in eight states (Bihar, Uttar Pradesh, Rajasthan, Haryana, Jharkhand, Chhattisgarh, West Bengal and Madhya Pradesh).

WHO NPSP has achieved all the targets agreed in the grant performance framework, as detailed below:

| Indicator	Annual target			Achievement
	2014	2015	2016	
Number of states where >80% measles outbreak are investigated out of flagged outbreaks, which should have been investigated	88%	100%	100% (8/8)	100%

Percentage of sentinel sites sending timely and complete VPD surveillance reports	35%	45%	55%	State-wide VPD surveillance started in 4 states. 95% of reporting sites sending timely and complete VPD surveillance reports.
Number of states where >80% reporting sites send timely and complete measles surveillance reports	88% (7/8)	100% (8/8)	100% (8/8)	100%
Number of VPD surveillance workshops conducted at sentinel sites	2	4	6	10 state-level VPD surveillance workshops conducted. District VPD surveillance workshops completed in all 4 states.
Number of measles surveillance workshop conducted at the district level	5	5	5	3,343 District Measles surveillance workshops conducted between 2014 and 2016.
Percentage of districts with at least 60% of the identified high risk settlements that are linked to RI session sites	50% (144/287)	70% (201/287)	90% (258/287)	98% of HRAs tagged in RI micro-plans.
Percentage of districts where intensified RI monitoring feedback for action is shared with district officials on quarterly basis	50% (144/287)	65% (187/287)	75% (215/287)	Feedback shared in all dist & during 66%DTFI conducted at least once in every quarter in 2016 .
Percentage of states with a state task force on immunization constituted to review RI programme and take appropriate action	50% (4/8)	70% (5/8)	90% (7/8)	100%
Percentage of districts with a district task force on immunization constituted to review RI programme and take appropriate action.	50% (144/287)	70% (201/287)	90% (258/287)	100%

WHO India shared technical and financial reporting updates on optimum utilization of the entire allocated fund throughout the implementation period with MoHFW and GAVI Secretariat using its own internal standardized, transparent reporting mechanisms. Audit reports/certificates for the funds received and expenditure incurred were prepared and shared through appropriate reporting mechanisms.

All the targets agreed in the grant performance framework have been achieved.

- *Strengthening of accountability mechanisms*

Figure 13: STFI & DTFI details: accountability framework in 8 Gavi states
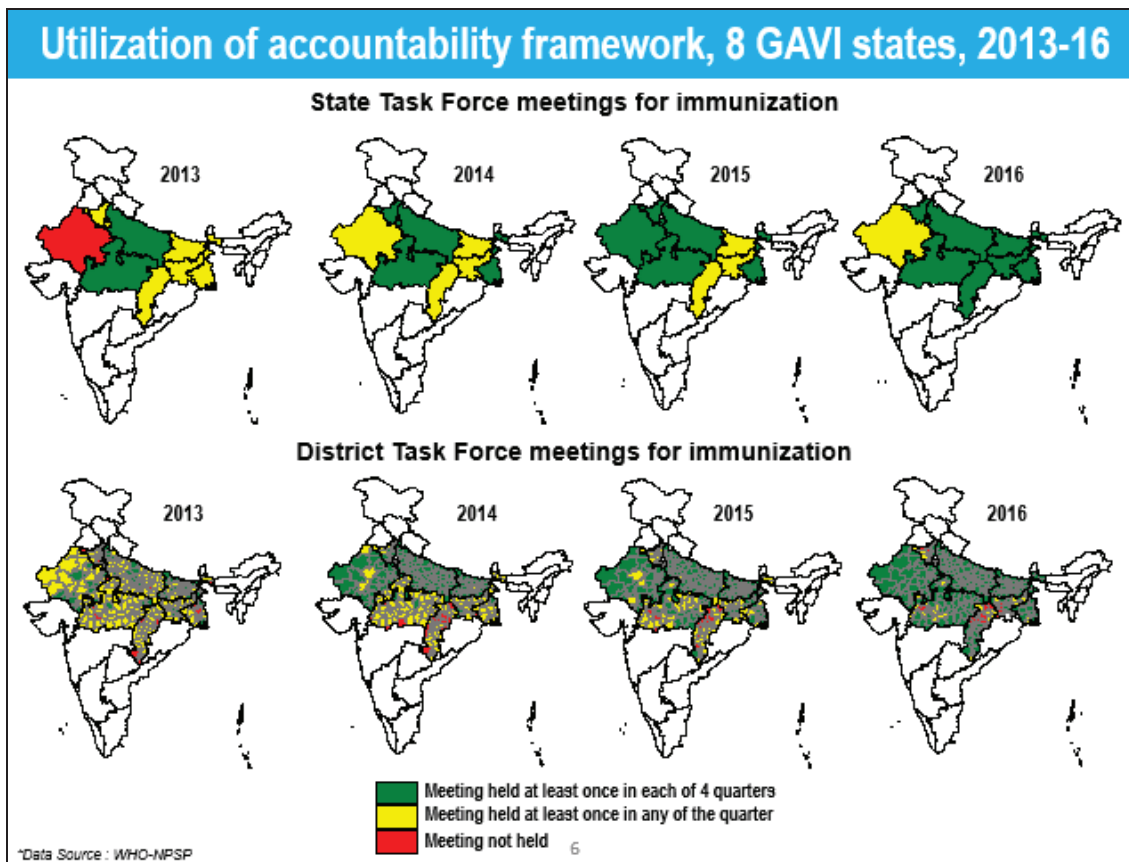
- *Monitoring of routine immunization activities*(see Section 3.2 for illustration of the data usage) & new vaccine introduction activities (as given below)
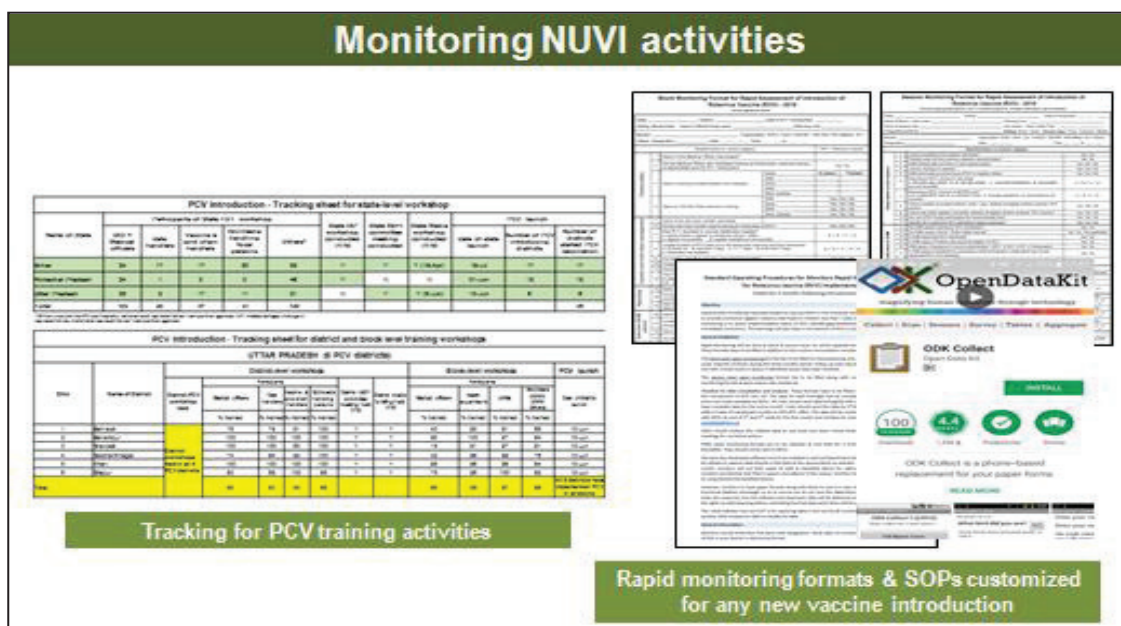

Figure 14. Monitoring NUVI activities

- *Capacity-building of government health staff and frontline workers*

- Revised Medical Officers' Immunization Handbook – 2016, updated in 2017:
  - Supported state ToTs in select states
  - Facilitated district ToTs at district (financially supported by NHM)
  - Extensive use of WHO polio network to monitor quality of trainings at sub-district level
- Routine Immunization micro-planning package revised
  - Strengthened micro-planning in Bihar, Himachal Pradesh, Nagaland, Uttar Pradesh, and Uttarakhand
  - District & sub-district workshops tracked
- 1 million health workers out of 1.3 million trained in 8 Gavi states

- *Micro-planning for inclusion of high-risk populations identified under polio programme into routine immunization.*

Figure 15. Micro-planning
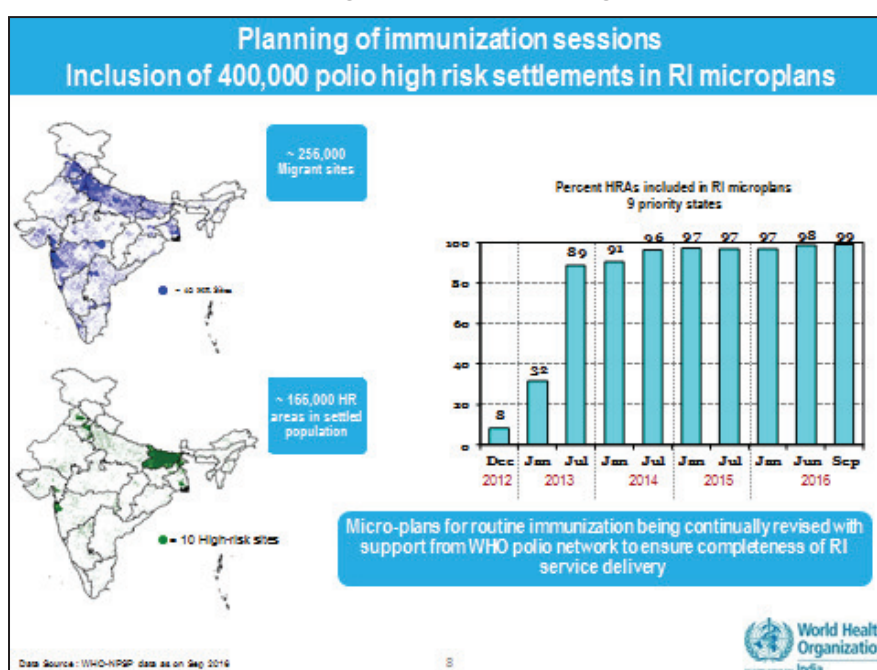
- *Surveillance for vaccine-preventable disease (*See Section 3.3 data) *and surveillance cum UIP reviews* (given below)
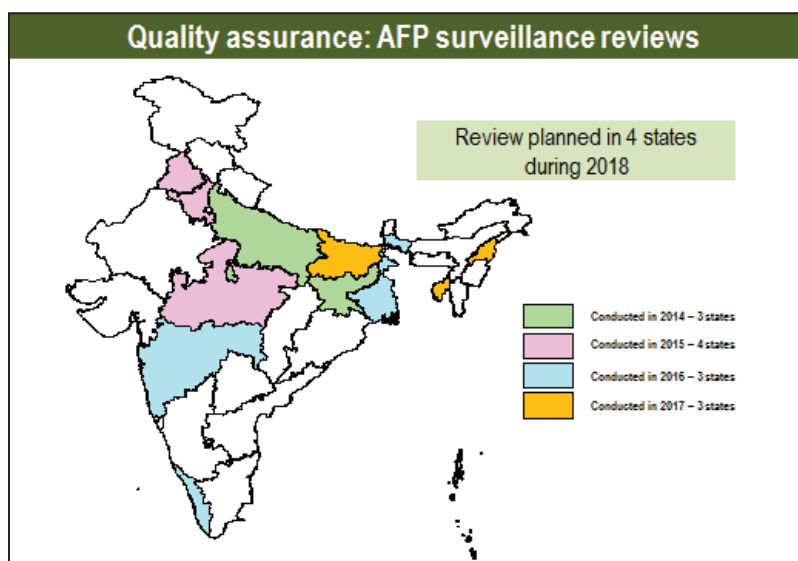

Figure 16. AFP surveillance reviews

- *Risk assessment, planning and monitoring of special immunization drives such as Intensified Mission Indradhanush*

Figure 17. Support to IMI, 2017
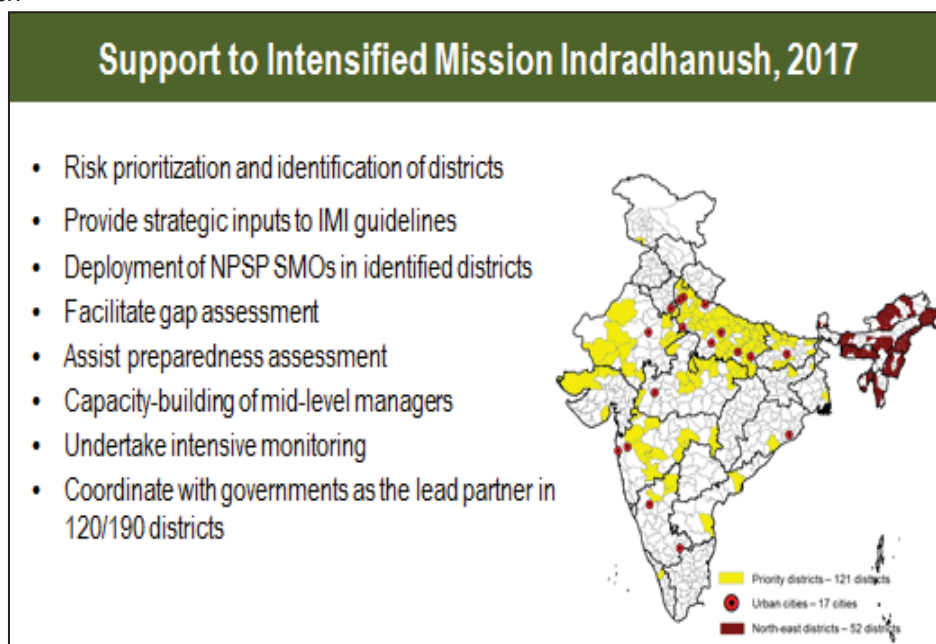
- *Support for new vaccines introduction: Evidence generation; preparedness assessment; development of operational guidelines and training material; capacity-building at national/state/district levels; tracking quality of trainings; rapid monitoring to provide feedback for corrective actions; post introduction evaluation/coverage survey*

Figure 18. Support to new vaccines introductions
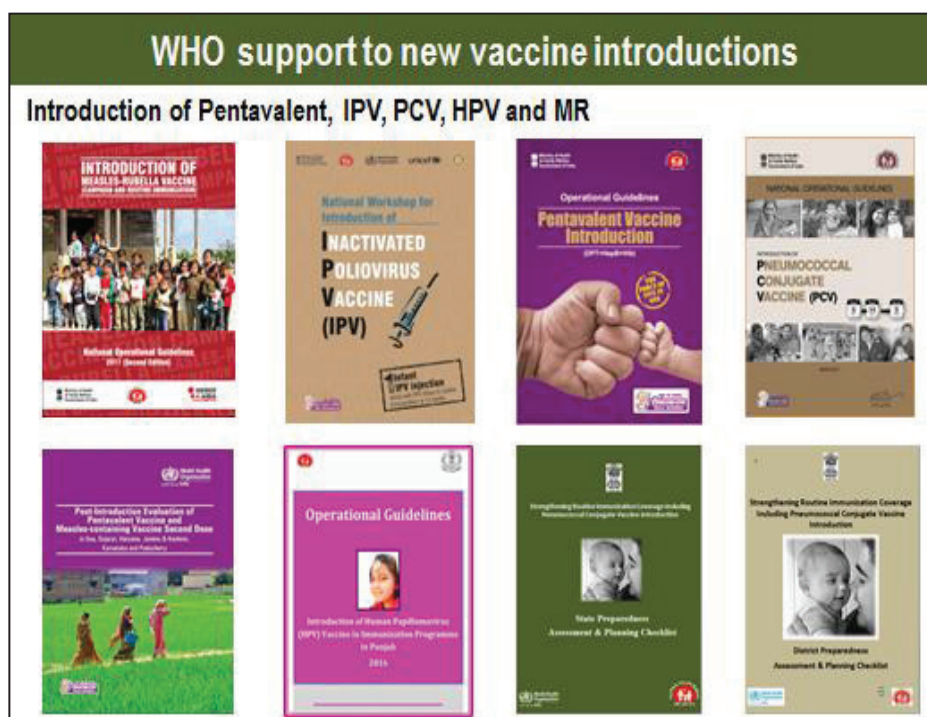
Domestically-financed / Non-Gavi supported

There have been a few vaccine introductions, while not Gavi-supported, that are included for reference in this report. The Central/State government funded introductions demonstrate the country's commitment to immunization and the overall momentum in new vaccines the last two years.

a. Rotavirus Vaccine introduction

In March 2016, India became the first country in Asia to launch indigenous rotavirus vaccine in the Universal Immunization Program (UIP). MoHFW introduced Rotavirus vaccine in 4 states (Haryana, Himachal Pradesh, Odhisa and Andhra Pradesh) of the country in Phase-I in 2016, with domestic funding. In phase-II, MOHFW has expanded the vaccine in 5 more states in 2017 - Madhya Pradesh, Rajasthan, Tripura and Tamil Nadu. Now, the vaccine is planned to be expanded in Jharkhand in December 2017. The vaccine is also planned to be expanded in Uttar Pradesh as part of Phase –III in 2018; this phase will be Gavi-supported.

To expand the vaccine to other parts of the country in a timely manner, it was required that the Phase -I introduction in terms of the preparedness and readiness of the immunization system as well as the uptake and sustainability of the vaccine in the system was reviewed. In this regard, Programme Implementation review (PIR) was conducted by MoHFW with support from Indian council of medical research (ICMR) with the objectives of reviewing the processes involved in rotavirus vaccine introduction in the vaccine introducer states (Phase-I) across various implementation levels. The PIR brought out certain good practices as well as identified areas requiring further strengthening in subsequent phases of RVV expansion. The plan of expansion of Rotavirus vaccine in the new states was similar to as that of Phase-I.

RVV coverage is estimated through reports submitted by states monthly. Recently, GoI has also included RVV field in Health Management information system (HMIS) and states have started reporting also from July 2017 onwards. Till September 2017 almost 10 million doses of Rotavirus vaccine have been administered to children in nine states of the country (Haryana, Himachal Pradesh, Odisha, Andhra Pradesh, Assam, Madhya Pradesh, Rajasthan, and Tripura & Tamil Nadu).

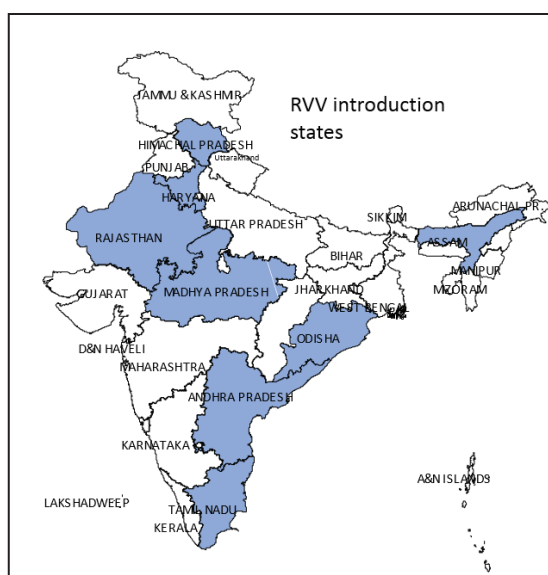**Figure 19. RVV introduction states**

Key lessons learnt from RVV introduction in India:

- The preparation for roll out for any new vaccine should start at least 2-3 months prior to vaccine introduction

- State and district preparedness assessment should be conducted well in time to foresee the possible gaps in the RVV preparedness so that necessary arrangement to address the gaps could be done.

- Inform and engage professional bodies (IAP, IMA), other stakeholders (Rotary, Lions) and CSOs for advocacy and supporting the programme.
- Ensure 100% Health workers are trained on all aspects of the new vaccine before the vaccine introduction.
- Strengthen supportive supervision and feedback mechanisms through government officials so that the gaps are identified timely and appropriate actions can be taken by the authorities.

Table 6: Rotavirus vaccine coverage and drop outs

State	Launch Date	Annual Target	Monthly Target	Numbers Since Introduction till Oct 2017			Coverage (%)			Drop out (RVV1 to RVV3) (%)
				RVV1	RVV2	RVV3	RVV1	RVV2	RVV3	
Andhra Pradesh	20-04-16	846500	70542	1021004	935717	885561	72.4	69.8	69.7	8.0
Haryana	11-04-16	564100	47008	648159	566794	522347	68.9	63.5	61.7	12.3
Himachal Pradesh	15-03-16	115000	9583	117317	110067	104567	61.2	60.4	60.6	2.4
Odisha	26-03-16	811300	67608	965417	890646	820046	71.4	69.3	67.4	4.9
Assam	14-06-17	692237	57686	196354	134486	94590	74.5	65.4	63.9	3.4
Madhya Pradesh	02-04-17	1880331	156694	730453	578634	481272	66.9	61.9	61.8	-4.8
Rajasthan	23-03-17	1756672	146389	680353	521296	424978	63.7	56.6	54.9	8.4
Tamil Nadu	20-09-17	967488	80624	95282	16007		86.5	54.1		
Tripura	18-02-17	55183	4599	27785	19661	15199	72.0	57.8	51.7	16.9
Total Number of Doses administered				4482124	3773308	3348560				

Source: HMIS data and Manual reporting data

b. Introduction of Human Papillomavirus Vaccine (HPV) in Punjab

Globally, every year, estimated 250 000 women die of cancer, with India being the fourth largest contributor to these deaths with estimated 67 000 deaths per year and accounts for one death in every eight minutes.

Punjab is the first of all states to pilot the introduction of HPV vaccination in its immunization programme for the targeted group of girls aged between 9–13 years. This was an initiative of the state government, and was prompted by a concern for the state's high cervical cancer rate. The pilot was deemed successful – with a reported 97% coverage rate of the target population – which was attributed to the establishment of a Technical Expert Group that provided advice and served as a credible resource to the media and public. The Punjab government will be expanding HPV vaccination to the entire state.

Between November 2016 and November 2017, concerted efforts made by Government of Punjab and partners led to successful vaccination of 20 000 girls studying in class six of government schools with two doses of HPV. Successful introduction of HPV in Punjab will serve to test and select the most cost-effective delivery strategy for HPV vaccination that is tailored to the community, health and education infrastructure.

HPV introduction across India is less certain, as the vaccine has not yet been recommended by the NTAGI. However, a few states, such as Sikkim, are considering introducing the vaccine with their own funding.

4.2.   Financial management performance (for all cash grants, such as HSS, vaccine introduction grants, campaign operational cost grants, transition grants, etc.)

By the end of 2017, the cash utilisation rate of the HSS 1 grant was 99.4% (Figure 20). WHO utilised the funds fully by December 2016, the original grant end date, and UNICEF by June 2017 during the no-cost extension period. UNDP had a small unspent balance, which is under consideration for a further no-cost extension for a few months into 2018. The delays in implementation were primarily due to the late signing of the Partnership Framework Agreement between Gavi and the Government of India back in 2015.

Figure 20. HSS 1 grant – Financial utilisation up to 2017 (agency-wise)
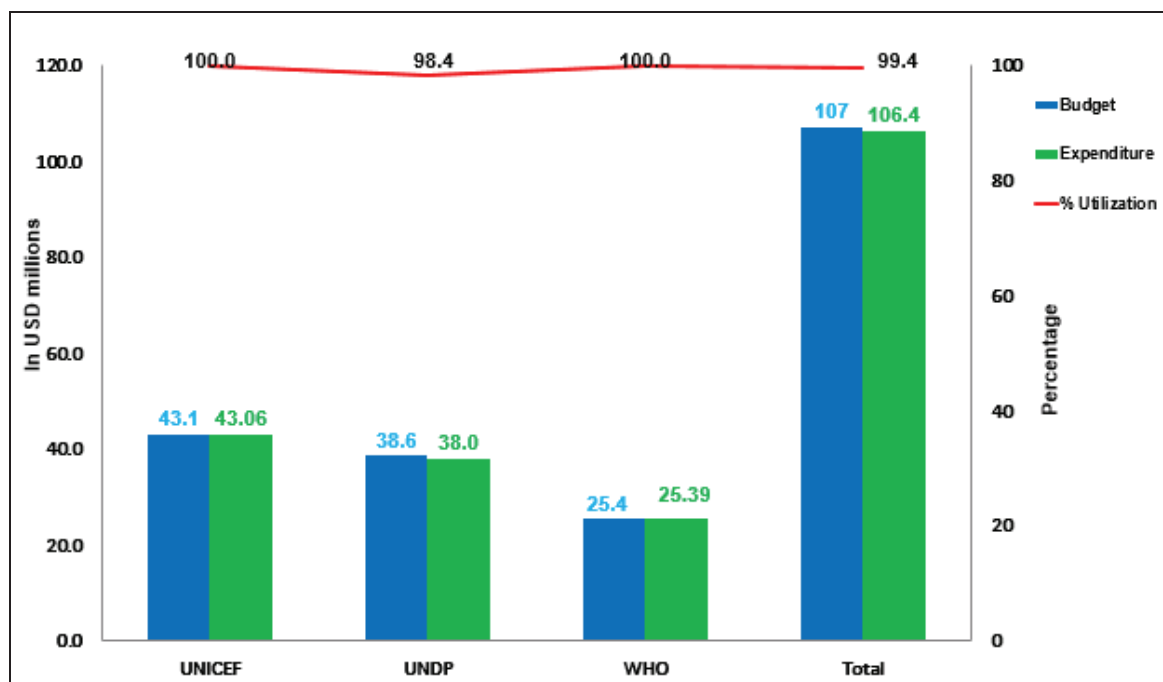
All agencies shared regular financial reporting updates on utilization rate via the quarterly HSS reporting form. Audit reports/certificates for the funds received and expenditure incurred were also shared through appropriate reporting mechanisms.

4.3.   Sustainability and (if applicable) transition planning

While many of the HSS 1 (2014-2017) interventions are carried forward to HSS 2 (2017-2021), there are selected areas which have been supported by Gavi where transition of support is being planned, or a cost-sharing model is already put in place to ensure sustainability. These are highlighted below.

Cold chain institutions

The NCCVMRC (National Cold Chain and Vaccine Management Resource Centre) was established in 2013 as a joint initiative of the Ministry of Health & Family Welfare (MoHFW), NIHFW and UNICEF for the effective management of cold chain and vaccine logistics and capacity building of the managerial and technical Staff working at various level of the health system. Subsequently, funds for building and infrastructure were placed with NIHFW by the MoHFW and physical construction of the centre started in 2013-14. The NCCVMRC building was inaugurated by the Minister of Health and Family Welfare, Shri Jagat Prakash Nadda, on 9th March 2015. Currently, NCCVMRC derives its establishment and operational costs from the GoI with financing of certain key positions and activities from GAVI-HSS. It is placed under the direct supervision of the Nodal Officer (Immunization), NIHFW with functional oversight provided by the Immunization Division, MoHFW. Technical and financial support for GAVI-HSS activities are provided through UNICEF.

National Cold Chain Training Centre (NCCTC) has been established in Pune, Maharashtra as a MoU between NIHFW and Director of Health Services, Maharashtra. This center subsequently retitled as the National Cold Chain Resource Centre (NCCRC) conducts training courses for cold chain technicians; on the repair and maintenance of WIC/WIF, voltage stabilizers; non CFC ILR / DF; and installation and maintenance solar equipment/WIC /WIF; and SNCU (sick new born care unit) equipment. There are various cross cutting activities which the NCCVMRC and NCCRC complements each other. Besides that the NCCRC also in the process of establishing the cold chain equipment testing lab for the testing and calibration of the cold chain equipment with the financial and technical support of MoHFW and UNICEF. Technical and financial support for GAVI-HSS activities are provided through UNICEF.

Transitioning from polio to public health – National Polio Surveillance Project to National Public Health Surveillance Project

India has been polio free for more than 6 years now. Over the past two decades, polio assets that include human workforce, infrastructure, equipment and systems (processes) established in the country have contributed to the polio eradication initiative by supporting surveillance for poliovirus detection, achieving and maintaining high population immunity against polio through supplementary immunization activities, supporting response to polio outbreaks and implementation of strategies outlined in the global endgame strategic plan.

Following the polio eradication, the resources from Global Polio Eradication Initiative (GPEI), currently financing almost two-third budget of WHO NPSP will come to an end by 2019. Therefore, a core group under the leadership of GoI has been constituted with membership of stakeholders and donors to guide the transition process for NPSP. WHO NPSP has developed guiding principles for the transition of its network from polio to public health. There will be close collaboration and partnership with government for a smooth transition.

Consensus is being built with the government and stakeholders on use of polio infrastructure for broader health goals such as elimination of neglected tropical diseases. Following consultations with government, donors and other stakeholders, WHO has developed a Draft of Joint Framework for transition of NPSP and shared with MoHFW for review. GoI has released $ 1.2 million as first tranche for transition support to NPSP in 2017.

Based on country's public health needs and demands from the government, WHO-NPSP has broaden its scope to support other priority public health activities including routine immunization strengthening including Intensive Mission Indradhanush (IMI) activities, vaccine preventable disease (VPD) surveillance, elimination of measles and neglected tropical diseases such as Kala azar, etc.

In collaboration with Ministry of Health and Family Welfare and Centers for Disease Control and Prevention (CDC), a three-year WHO Epidemic Intelligence Service (WHO-EIS) programme on applied field epidemiology has been launched. It has been specially designed to strengthen the capacity of WHO-NPSP medical officers to shoulder new responsibilities in public health through on-the-job training and close mentorship. Nearly 75 SMOs will be trained in collaboration with NCDC, MoHFW and CDC, the remaining SMO will also be trained on epidemiology.

eVIN

eVIN provides a robust MIS for the entire vaccine and cold chain inventory in the country which is crucial for policy makers and programme managers at national and state levels to develop policy and strategies for improving vaccine and cold chain logistics and supply chain management. The success and relevance of eVIN has convinced GoI to make it the mainstay of the national vaccine and cold chain logistics and MIS.

GoI is committed to fund the entire cost of eVIN in the 12 implementing Gavi states once the HSS-1 funds are over. All eVIN recurring costs viz. human resource, hardware and software logistics, infrastructure will be supported by GoI and be included in state PIPs. Guidelines for states on including eVIN in their respective PIPs have been developed and will be used for the upcoming annual work plan 2017-18.

eVIN system has been designed in a way that lends to a smooth transition to the state health department right from its inception. The eVIN hardware – smart phones and temperature loggers were handed to the state governments at the beginning of the programme, the entire basic data for eVIN is entered into the software by cold chain handlers who are existing government employees, with UNDP providing technical support, the vaccine cold chain manager who works at the district level is costed at NHM salary rates to ensure a smooth takeover by the state government at the time of eVIN handover. All UNDP staff in the field are placed in the health ministry premises and work closely with the state and district immunization officers thus facilitating a smooth knowledge transfer to the key officials on a daily basis

SMNet

As part of the Polio Endgame Strategy, the SMNet is now focusing on boosting routine immunization via working with the government to strengthen communication planning, capacity development, social mobilization, media sensitization, monitoring, supportive supervision and evidence-based, real-time planning for routine immunization activities.

UNICEF's Social Mobilization Network (SMNet) with over 7,000 community mobilizers reaches 2.2 million children in some 2.7 million households with lifesaving messages related to immunization services in some of the most underserved, marginalized and at risk communities in India. Under Gavi HSS2 grant SMNet will continue creating awareness and mobilize communities for routine immunization in high risk areas of Uttar Pradesh and Bihar.
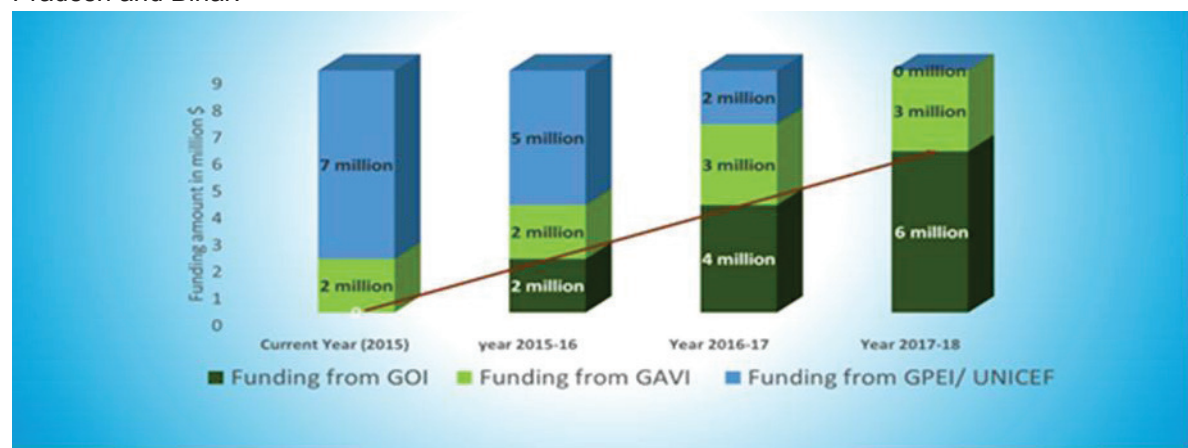

Figure 21. Funding by GAVI

As SMNet transitions out of donor funds, HSS2 funds is expected to provide part of total requirement and GoI will be contributing remaining funds. These funds will be utilized in conducting social mobilization activities in underserved areas of two highest priority states (UP and Bihar) with maximum number of not fully immunized children in the country.

Government of India and UNICEF reached agreement on the transition of the Social Mobilization Network (SMNet) in November 2015. The Ministry of Health and Family Welfare, agreed to fund the states of UP and Bihar for the SMNet progressively leading up to March 2018, thereafter the states will have to determine the funding and future of SMNet. The UP Government covered approximately 18% of SMNet costs for 2015-2016, and 42% 2016-2017 and Bihar government covered 49% of SMNet cost for 2016-2017 and 63% for 2017-2018. Gavi contribution in HSS1 was $ 2 million per year (21.7%) and remaining contribution was from UNICEF, GPEI partners and GoI.

4.4.   Technical Assistance (TA)

WHO

Measles-Rubella technical assistance support:

Lessons learnt from the phase I & II measles-rubella campaigns are being strongly enforced with robust pre-campaign preparedness assessment plan, intensive concurrent monitoring, HR surge with deployment of additional WHO and UNICEF workforce as well as government staff (rapid response team members), strong engagement of schools, convergence with local professional bodies, robust communication & media strategy spanning social media network and other networking resources. Real-time Rapid Convenience Monitoring (RCM) during campaigns, sero-surveys and post-campaign coverage evaluation surveys planned/conducted to assess the reach of the MR campaign in the identified high risk and underserved populations. This is to ensure high coverage (>95%) in the remaining campaign phases. (plan given in the figure below).

Figure 22. Recommended MR SIA plan
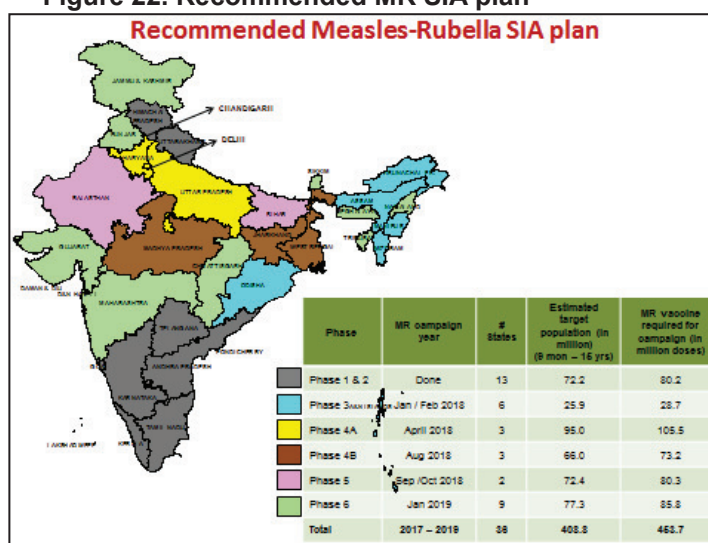
For this, MoHFW requested WHO India for surge-capacity through deployment of surveillance medical officers to ensure effective planning, implementation and monitoring of the MR campaign across the country.

WHO NPSP was approved a funding support of USD 7.1 million from Gavi to support MR campaign related activities including surge capacity through deployment of medical officers and rapid response team members to support state and districts in planning, capacity building, monitoring, inter-sectoral coordination and strengthening accountability mechanisms; training of state and district program managers, master trainers from districts and partners for MR campaign; training of sub-district program managers and trainers from blocks/ planning units and partners for MR campaign; orientation of private practitioners at state/ district on MR campaign and AEFIs management; and preparedness assessment of state and districts to undertake MR campaign; rapid monitoring through independent monitors. This funding is not part of the Partners' Engagement Framework (PEF) Targeted Country Assistance (TCA) funding, but a re-allocation of funds from the Gavi Board-approved $500 million funding envelope to India for 2017-2021.

PEF/TCA: The 2017 PEF/TCA funds were used to address immunization equity issues in states with low immunization coverage, with a focus on the North Eastern states.

UNICEF

Measles-Rubella technical assistance support: Similar to the situation with WHO, given lessons learnt from both phases of the MR campaign, there was a need for additional TA in strengthening the communication strategy to ensure a successful campaign. UNICEF contributed $200,000 from its regular resources and $600,000 from headquarters (Measles Rubella partnership funds) in 2017 to support the MR campaign.

A requirement of $3.5 million to support development & printing of training materials for front-line health workers and teachers; conduct of state/regional media workshops, professional bodies and religious leaders' workshops; social media management including content development, posting, media monitoring and social media management and SMNet deployment to high risk districts was estimated as necessary for the remaining phases in 2018/19.

With limited funds availability and as per UNICEF's discussions with MoHFW, $1.5 million was requested of Gavi for additional UNICEF TA for the next two phases of the campaign. This was approved, also as part of the re-allocation within the existing funding envelope to India.

PEF/TCA: PEF/TCA funds were used to provide technical support for Mission Indradhanush, with a focus on high priority 5 states, MR vaccination campaign and new vaccine introductions (PCV and Rotavirus vaccine). This will complement HSS-2 funds and state PIP to provide operational support for cold chain strengthening, Mission Indradhanush, demand generation activities, introduction of newer vaccines and MR vaccination campaign.

JSI

Gavi funded JSI Research & Training Institute, Inc. to provide technical assistance to MoHFW for the following two activities-

1. To prepare a standard package of Frequently Asked Questions (FAQs) customized each for Medical Officers (MOs), health workers, mobilisers and parents/caregivers
2. To review the full immunization incentives system for ASHA vis-à-vis the improvement in full immunization coverage reported in recent surveys and to document opportunities and challenges, and develop standard operating procedure and provide recommendations in reaping the full benefit of these incentive systems.

Owing to rapid development of UIP and new vaccine introduction, there have been several changes in the existing protocols. To ensure a beneficiary-driven improvement in UIP, it was important that stakeholders at all levels are well acquainted to the latest advancements made in routine immunization. To address to this need, JSI worked together with the MoHFW to prepare a standard package of FAQs customized for all stakeholders, answering to the common queries of various stakeholders including program managers, medical officers, health workers, mobilisers, parents/caregivers, influencers and media persons. To enable a wider dissemination of these FAQs, a mobile-based application with an exhaustive list of FAQs along with graphics that will work on smartphones was also developed.

Accredited Social Health Activists (or ASHA) serve as an interface between the community and public health system and receive performance-based incentives for promoting routine immunization in the community. In spite of the incentive scheme in place for almost four years, the immunization coverage rates seem to be growing at a slower pace. To improve full immunization coverage, it was important to increase the mobilization of parents and caregivers for which ASHA's role is pivotal. JSI, together with the MoHFW, reviewed the immunization incentives system for ASHAs vis-à-vis the reported improvement in full immunization coverage. JSI also developed standard operating procedures and provided recommendations to streamline the process of incentivising ASHA.

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL
Table 7.

Prioritised actions from previous Joint Appraisal (2015)	Current status
1. Pentavalent vaccine rollout and transitioning	Done
2. IPV vaccine rollout and transitioning	Done
3. IAG meeting frequency	Indicator added to Grant Performance Framework; Quarterly meeting expectations set
Additional significant IRC / HLRP recommendations (if applicable)	**Current status**
HSS2 proposal: • New cMYP to be completed by the end of 2017. This should inform subsequent work planning and budget.	cMYP 2018-22 to be developed by March 2018

HSS2 proposal:	Two rounds of meetings have been held with Immunization Division, MoHFW. MMP Cell to finalize geographical scope and specifications of tablets. Based on the final recommendations from the MoHFW, UNICEF will procure the tablets. MoHFW in parallel will be developing the protocol for the independent assessment of ANMOL.
• Independent assessment of the readiness of ANMOL for national rollout supported by HSS2 and cost projections based upon rollout in AP and Rajasthan. Findings to provide a foundation for capacity building needs and budgetary projections in HSS2.	
HSS2 proposal: • Demand generation components, on incorporating skills transfer plans into the overall SBCC package, and clearly defining the roles between SMNet and CSOs to maximise synergies.	UNICEF is working closely with CSOs, to strengthen engagement of community and to increase demand and generate awareness for routine immunization. CSOs are currently supporting UNICEF in Routine immunization & MR campaign: - 1) Rotary and Lions Club- Supporting in advocacy and communication activities in states, and important national partner in Routine Immunization & MR campaign 2) Professional bodies- especially Indian Academy of Paediatrics (IAP) and Indian Medical Association (IMA)- appeal to their members, spokespersons in media briefings and in case of AEFI and member of expert committees 3) Child health foundation- to support national roundtable of private practitioners on measles elimination and rubella control 4) Shikhar and Power Foundation to mobilize voices of religious leaders for giving information/positive messaging on Routine Immunization and MR and to create new media content which reaches out to minority groups and addresses vaccine confidence. 5) All India Radio Part-time Correspondents and Radio Jockeys for FM channels- they consist of stringers for AIR and they also double up as local media reporters for DD and other language publications SMNet has helped in creating awareness and mobilization of communities for OPV vaccination and has helped in decreasing the resistance in the community against polio vaccination. SMNet has played an important role in elimination of polio from the country. Now the SMNet is helping in increasing awareness about routine immunization and also is playing important role in high resistant areas during MR vaccination campaign. The SMNet uses CSOs like Aligarh Muslim University, Jamat Ul Mila as one of the partners in bridging the gaps in communication activities to create positive environment. SMNet is mainly present in Bihar and Uttar Pradesh whereas CSOs are present all over the country. These two networks complement each other and helps inpromoting awareness on immunization thus leading to demand generation.
Roll out of eVIN	8 states and UT's have been listed for roll out in Q1 2018

6. ACTION PLAN: SUMMARY OF FINDINGS, ACTIONS AND TECHNICAL ASSISTANCE NEEDS IDENTIFIED AND AGREED DURING THE JOINT APPRAISAL

Key activity 1	PCV scale-up
Agreed country actions	PCV expansion to 6 new districts of Uttar Pradesh, 21 new districts of Bihar, 9 districts of Rajasthan and entire Madhya Pradesh.
Associated timeline	PCV expansion by 1st quarter 2018- 19
Technical assistance needs	
Key activity 2	RVV scale up
Agreed country actions	Uttar Pradesh
Associated timeline	2018-19
Technical assistance needs	
Key activity 3	MR scale up
Agreed country actions	MR campaign in Arunachal Pradesh, Manipur, Odisha from Jan/Feb 2018. Remaining states in 2018-19
Associated timeline	2018-19
Technical assistance needs	

7. JOINT APPRAISAL PROCESS, ENDORSEMENT BY THE NATIONAL COORDINATION FORUM (ICC, HSCC OR EQUIVALENT) AND ADDITIONAL COMMENTS

Briefly describe how the Joint Appraisal was reviewed, discussed and endorsed by the relevant national Coordination Forum (ICC, HSCC or equivalent), including key discussion points, attendees, key recommendations and decisions, and whether the quorum was met. Alternatively, share the meeting minutes outlining these points.

If applicable, provide any additional comments from the Ministry of Health, Gavi Alliance partners, or other stakeholders.

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* IAG Meeting held on 3rd January, 2018 under the chairpersonship of Mrs. Vandana Gurnani, Joint Secretary (RCH) at Nirman Bhawan, New Delhi. – The Minutes of the meeting are annexed (section 8.5)

Insights from field visit

As a part of the Gavi India Joint Appraisal 2017, Gavi team along with officials from CDC Atlanta, WHO HQ, immunization partners at national & state level and centre & state government officials visited Indore and Sehore districts of Madhya Pradesh. One of the team visited Sehore to understand the operability of ANMOL and other team visited urban area of Indore to assess Routine Immunization.

a. The team visited, Karman Khedi village, Sehore district, MP to assess the operability of ANMOL (ANM Online) on Village Health & Nutrition Day (VHND) at Aaganwadi Centre (AWC). ANMOL is a job aid tool for ANMs which provides a readily available information such as due list dashboard and guidance based on data entered. 14 districts in Madhya Pradesh are live with ANMOL functioning were 3400 ANMs are trained and 1950 ANMOL tablets are being used.

Following were the key points from the visit:-

- The team had a discussion with DIO Sehore, District Programme Manager, Block Community Mobilizer, ANM and ASHA which were present at the session site.
- Key modules in ANMOL are
  - Real time dashboard for ANM work
  - Digital copy of RCH register
  - Ready-made due-list, logistics, and work plan to facilitate ANM
  - Eligible couples, pregnant women, and child data entry with on time medical and job aid alerts
  - Audio and video counselling to support IEC activities
  - Automatic synchronization of data on availability of 3G/2G or Wi-Fi
- ANM at AWC demonstrated the functioning of ANMOL. She presented the complete procedure on how to enter all the details pertaining to immunization, on ANMOL tablet.
- As ANMOL being the replica of RCH portal it provides all the details as mentioned in the portal.
- It is perceived by ANMs that although initially there is added work to complete registers and enter data in ANMOL, but the eventual work load will decrease once the data will be fed only in ANMOL.
- ANMOL application is handy to use and provides ease of doing work for ANM
  - The application has comprehensive User Interface (UI) with multilingual support with regional dialect.
    - It provides counselling alerts for anaemic, high risk and low birth weight beneficiaries
    - Audio and video counselling support for IEC activities
  - It work in offline mode also without internet connectivity and syncs at availability of internet connection.
  - It provides access to daily, weekly or customizable work plan.
  - Auto generate VHND due-list
  - AADHAR QR code can be scanned offline to capture beneficiary demographic details
  - Notifications and updates from state and centre government can be received.
  - A dedicated helpdesk and ticket system for ANM is available to raise support request.
  - Digital e-register module is fed into ANMOL.
- Data once synced is safe with the central server.
- If there is any operability issue, the district team helps ANM to resolve the problem; and if necessary escalates to state team.

- ANM also highlighted the easy interface for data entry with selections, drop downs for minimum typing; ready count of beneficiaries; standard medical guidance for critical parameters like Hb, weight, any complications etc.; auto generated growth charts of child based on height and weight; validations to ensure quality data input; field for AEFI data entry also available; inbuilt call and SMS functions to connect with beneficiaries.

- It helps to generate ANM wise , sub centre and ASHA wise work plans
- ANMOL dashboard provides data on family planning indicators, maternal health indicators, child health indicators, immunization indicators, critical indicators and KPI indicators.
- The e-register is categorized into 8 categories- RCH register, EC register, PW register, ANC register, delivery and PNC register, high risk register, severe anaemic register, child tracking and immunization register.
- ANMOL also helps in capacity building of ANM through tutorials which are state specific.
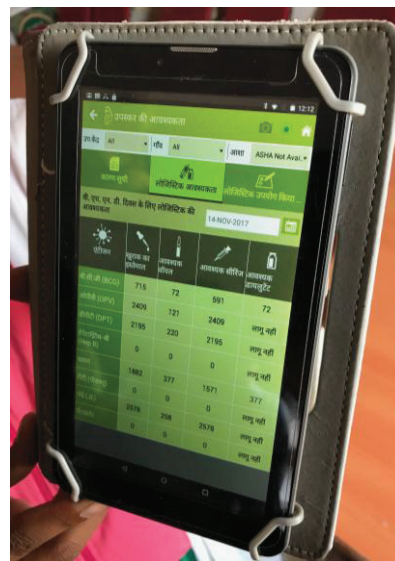
b. As a part of the Routine Immunization Monitoring, the other team visited urban area in Indore - RI session at High Risk Area, Cold Chain Point, and District Hospital. Following observations were made during the visit:

- Visit to South Toda High Risk Area:
  o The team visited a RI session being held at High Risk Area located at South Toda Block of Indore.
  o ANM was interacted about the process she followed for immunizing children and pregnant women: – House to House survey, due list preparation, entry in vaccination card, open vial policy.
  o AWW was interacted about her role in mobilization of the community for immunization.
  o The District Immunization Officer displayed the Mission Indradhaunsh Umbrella to the team, which is developed by Madhya Pradesh as a part of IEC for the campaign.
  o Parents were interacted about their awareness of Immunization- immunization schedule, benefits of immunization.
- Visit to MOG Lines Cold Chain Point:
  o The process of functioning of eVIN was explained by the Project Officer, UNDP as how it enables real time visibility of vaccine stock thereby preventing vaccine wastage.
  o SEPIO shared a success story of eVIN in Indore. The DPT vaccine which were due to be expired in 3 months was shown by eVIN. Thereby, a campaign was designed for vaccinating school children in the same week. As a result, all the vials were consumed well within the date of expiry.
- Visit to District Hospital Indore
  o Deputy Director, Immunization of Madhya Pradesh displayed the vaccination trolley designed for administering BCG birth dose.
  o Administration of BCG birth dose was observed in female ward.
  o The mothers in the ward were interacted for the breast feeding practices.
  o Waste disposal mechanism of biomedical waste of the district was discussed.

c. Following the day visit, DC (I/c), Immunization Division, MoHFW, made a presentation on new vaccines introduction in India. The members of both teams were present and following were the key points:

- Steps for introduction of fIPV, PCV, RVV and MR from STSC meetings to selection of states by Expert Working group
- India's step towards Polio Endgame strategy; with India being first country to introduce fIPV.
- The country is making continuous efforts for strengthening surveillance for VPD.

- Pre vaccine introduction assessment of the states and districts helps to ascertain the preparedness of the state for the introduction of new vaccine.
- In order to have seamless introduction of vaccine, timely cascaded trainings are held.
- Media sensitization workshops have been pivotal in generating more positive stories.
- Inter- ministries convergence for IMI and MR campaign.
- Lessons learnt from MR campaigns for better social media advocacy.
- Review for Measles 2nd dose to track complete immunization coverage to be done.

The field visits were followed by an interactive discussion on the next day, where key risks and mitigating actions were discussed. The details are in Section 8.3.

d. A debriefing session was chaired by Joint Secretary (RCH) at MoHFW, post field visit. The following were the key points:

- Vaccine stock management system was appreciated by Gavi officials.
- Gavi team valued the motivation of human resource in the field.
- The country requested Gavi to undertake peer reviews with involvement of international academia for documenting best practices for strengthening immunization services.
- To strengthen vaccine security in the country, Gavi was requested to explore road maps in consultation with the manufacturers and also consult with the manufacturers regarding uniformity in vaccines in term of dosage schedule, storage conditions and interchangeability.
- The country is exploring the funding options to conduct surveys post Intensified Mission Indradhanush (IMI). It was requested to Gavi to recheck the grants or extend support for the same.
- GoI has taken initiatives like IMI to strengthen routine immunization.

8. ANNEXURE

8.1. Compliance with Gavi reporting requirements

Please confirm the status of reporting to Gavi, indicating whether the following reports have been uploaded onto the Country Portal.

It is important to note that delayed reporting may impact the decision by Gavi to renew its support.

	Yes	No	Not applicable
Grant Performance Framework (GPF) reporting against all due indicators			
Financial Reports			
Periodic financial reports			
Annual financial statement			
Annual financial audit report			
End of year stock level report			
Campaign reports			
Immunization financing and expenditure information			
Data quality and survey reporting			
Annual desk review			
Data quality improvement plan (DQIP)			
If yes to DQIP, reporting on progress against it			
In-depth data assessment (conducted in the last five years)			
Nationally representative coverage survey (conducted in the last five years)			
Annual progress update on the Effective Vaccine Management (EVM) improvement plan			
Post Introduction Evaluation (PIE)			
Measles-rubella 5 year plan			
Operational plan for the immunization program			
HSS end of grant evaluation report			
HPV specific reports			
Transition Plan			

In case any of the required reporting documents is not available at the time of the Joint Appraisal, provide information when the missing document/information will be provided.

8.2.   2018 key activities timeline

	Activity description	Agency	Quarter 1	Quarter 2	Quarter 3	Quarter 4
	New vaccine introduction					
1.	MR scale up	MoHFW	x	x	x	x
2.	PCV scale up	MoHFW	x			
3.	Rota scale up	MoHFW	x			
	HSS2					
	Objective 1. To strengthen and maintain robust data systems to improve evidence based decision making					
1.1	Routine immunization monitoring to improve coverage and address equity issues	WHO	x	x	x	x
1.2	Expansion of VPD Surveillance	WHO	x	x	x	x
1.3	Introduction of ANMOL to improve data collection and management – improves availability of real time data, helps create automated due lists for immunization	UNICEF	x	x	x	x
1.4	Coverage Evaluation Survey	UNICEF				
1.5	To establish an effective platform for various stakeholders to work together in the area of research and immunization	UNDP	x	x	x	x
	Objective 2. To improve service delivery through improved capacity of human resources					
2.1	Capacity building of master trainers for microplanning and RI strengthening	WHO	x	x	x	x
2.2	Developing a framework for implementation of training activity and implementation of RISE package	JSI	x	x	x	x
2.3	Development of a tribal strategy for immunization programme	UNICEF	x	x	x	x
2.4	Enhancing routine immunization quality and coverage, and addressing inequities in urban areas	WHO	x	x	x	x
	Objective 3. To strengthen cold chain and Vaccine logistics systems					
3.1	Capacity development of cold chain and vaccine handlers, technicians and vaccine logistics managers	UNICEF	x	x	x	x
3.2	NCCMIS augmentation and Immunization Supply Chain-Cold Chain data harmonization	UNICEF	x	x	x	x
3.3	Support Govt. in review and implementation of EVM Improvement Plans	UNICEF	x	x	x	x
3.4	Strengthening of Institutions, cold chain infrastructure and equipment	UNICEF	x	x	x	x
3.5	Establish eVIN system infrastructure in the additional new States/UT	UNDP	x	x	x	x
	Objective 4. To improve demand generation for immunization services to improve coverage and address inequities					
4.1	Capacity development of FLWs /providers on SBCC and IPC through training of master trainers	UNICEF	x	x	x	x
4.2	Communication planning linked with micro planning to reach high-risk/underserved through SBCC cells	UNICEF	x	x	x	x

	Activity description	Agency	Quarter 1	Quarter 2	Quarter 3	Quarter 4
4.3	Strengthening community based multi-stakeholder partnerships	UNICEF	x	x	x	x
4.4	Effective use of Polio Network (SMNet) for routine immunization health systems strengthening	UNICEF	x	x	x	x
4.5	Communication monitoring and supportive supervision through use of standardized formats, dashboard analysis	UNICEF	x	x	x	x
4.6	Creating enabling environment for immunization through Policy, Media and Advocacy at the national and state level	UNICEF	x	x	x	x

8.3. Key implementation risks and mitigating actions

Key risk as highlighted by visiting Gavi team	Mitigating actions
• Competing priorities and lack of a clear and comprehensive plan	• Develop a master plan/calendar with all key events at national/state • Develop an annual work plan for immunization
• Lack of HR (vacancy and workload issues)	• Develop plan for HR surge support based on master plan/ calendar for specific activities (IMI etc.) • Human Resource for Immunization are presented by the States and discussed during NPCC meetings during PIP approval process for the respective States • States are provided feedback on the gaps in HR after preparedness assessments are carried out for various programmes/new vaccine introduction and during various /monitoring visits.
• Urban challenges	• Coordination with NUHM division in MoHFW/ states to strengthen NUHM infrastructure for RI service delivery • Develop urban-specific strategies
• Insufficient planning at state level	• Preparedness assessment through checklists • All new vaccines: Earlier notification from Centre to States (current ongoing)
• Lack of budget/coordination on communication-related activities	• Budgets are available in the framework of NHM through PIP. States to be guided on communication planning • Better social media planning • Better CSO utilization within existing framework of Gavi HSS2
• M&E/Data system issues	• Develop overarching data strategy (cMYP), including exploring inter-operability of systems, optimising data integration, and ensuring clear data feedback loop
• Lack of AEFI reporting to build vaccine confidence	• Continue sensitisation on AEFI reporting and capacity building of the states/districts

8.4 eVIN data December 2017

States	Districts	Number of Cold Chain Points	% Coverage	Number of Cold Chain Handlers and Link Persons	% Trained*	Number of Temperature Loggers Installed	% Coverage**
Total	**371**	**10510**	**100%**	**17237**	**100%**	**13664**	**96%**
Assam	27	721	100%	1452	100%	938	102%
Bihar	38	654	100%	1289	99%	1149	101%
Chhattisgarh	27	553	100%	1100	100%	714	96%
Gujarat	33	1977	100%	2028	103%	2228	100%
Himachal Pradesh	12	382	100%	763	100%	NA	NA
Jharkhand	24	241	100%	480	100%	456	102%
Madhya Pradesh	51	1184	100%	2323	98%	1698	101%
Manipur	9	114	100%	231	101%	138	100%
Nagaland	11	123	100%	250	102%	113	108%
Odisha	30	1163	100%	2296	99%	1352	98%
Rajasthan	34	2231	100%	2710	100%	2419	99%
Uttar Pradesh	75	1163	100%	2315	100%	2685	105%

* Additional government staff was trained in some states.

** The denominator of '% Coverage' is number of currently working cold chain equipment. This number is ever changing due to changing status of equipment between working to under repair and installation of new cold chain equipment.