



# Maharashtra Comprehensive UIP Review

A report: November 2018





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# ABBREVIATIONS

<b>AAA</b>	ANM, ASHA, AWW
<b>AD</b>	Auto-Disable
<b>AEFI</b>	Adverse Event Following Immunization
<b>AFP</b>	Acute flaccid paralysis
<b>ANM</b>	Auxiliary Nurse Midwife
<b>ASHA</b>	Accredited Social Health Activist
<b>AVD</b>	alternate vaccine delivery
<b>AWW</b>	<i>Anganwadi</i> Worker
<b>BCC</b>	behaviour change communication
<b>BCG</b>	Bacillus Calmette Guerin
<b>BRIDGE</b>	Boosting Routine Immunization Demand Generation
<b>CBO</b>	Community Based Organization
<b>CCE</b>	Cold Chain Equipment
<b>CCH</b>	Cold Chain Handler
<b>CCP</b>	Cold Chain Point
<b>CCT</b>	Cold Chain Technician
<b>CHC</b>	Community Health Centre
<b>CHV</b>	Community Health Volunteer
<b>CMHO</b>	Chief Medical and Health Officer
<b>CRF</b>	Case Reporting Form
<b>CTFI</b>	City Task Force for Immunization
<b>DEO</b>	Data Entry Operator
<b>DF</b>	deep freezer
<b>DHS</b>	District Health Society
<b>DM</b>	District Magistrate
<b>DEMO</b>	District Extension and Media Officer
<b>DPM</b>	District Programme Manager
<b>DPT</b>	Diphtheria Pertussis Tetanus
<b>DQA</b>	Data Quality Assessment
<b>DRCHO</b>	District Reproductive and Child Health Officer
<b>DSO</b>	District Surveillance Officer
<b>DTFI</b>	District Task Force for Immunization
<b>DTFUI</b>	District Task Force for Urban Immunization
<b>DVS</b>	district vaccine store
<b>EPI</b>	Expanded Program on Immunization
<b>eVIN</b>	Electronic Vaccine Intelligence Network
<b>EVM</b>	Effective Vaccine Management
<b>FCIF</b>	Final Case Investigation Form
<b>FIC</b>	Full Immunization Coverage



<b>fIPV</b>	Fractional dose Inactivated Polio Vaccine
<b>FLW</b>	Front Line Worker
<b>GHS</b>	Global Health Strategies
<b>GNM</b>	General Nurse and Midwife
<b>GSA</b>	<i>Gram Swaraj Abhiyan</i>
<b>HMIS</b>	Health Management Information System
<b>HR</b>	human resource
<b>HRA</b>	High Risk Area
<b>HS</b>	Health Supervisor
<b>IAP</b>	Indian Academy of Paediatrics
<b>ICDS</b>	Integrated Child Development Services
<b>iCIP</b>	Immunization Coverage Improvement Plan
<b>IDSP</b>	Integrated Disease Surveillance Programme
<b>IEC</b>	Information, Education and Communication
<b>IERB</b>	Institutional ethical review board
<b>IFM</b>	Immunization Field Monitor
<b>ILR</b>	ice-lined refrigerator
<b>IMA</b>	Indian Medical Association
<b>IMI</b>	Intensified Mission <i>Inradhanush</i>
<b>IMR</b>	Infant mortality rate
<b>IPC</b>	inter personal communication
<b>ITSU</b>	Immunization Technical Support Unit
<b>JE</b>	Japanese Encephalitis
<b>JSI</b>	John Snow, Inc
<b>LHV</b>	Lady Health Visitor
<b>MAS</b>	<i>Mahila Arogya Samiti</i>
<b>MCP</b>	Mother and Child Protection
<b>MCV</b>	Measles Containing Vaccine
<b>MI</b>	Mission <i>Inradhanush</i>
<b>MO</b>	medical officer
<b>MoHFW</b>	Ministry of Health and Family Welfare
<b>MPR</b>	monthly progress report
<b>NCC</b>	National Cadet Corps
<b>NCCVMRC</b>	National Cold Chain and Vaccine Management Resource Centre
<b>NFHS</b>	National Family Health Survey
<b>NGO</b>	Non-Governmental Organization
<b>NHM</b>	National Health Mission
<b>NHSRC</b>	National Health Systems Resource Centre
<b>NID</b>	National Immunization Day
<b>NIHFW</b>	National Institute of Health and Family Welfare
<b>NPSP</b>	National Public Health Surveillance Project
<b>NSS</b>	National Service Scheme
<b>NUHM</b>	National Urban Health Mission





<b>NYK</b>	<i>Nehru Yuva Kendra</i>
<b>ODK</b>	Open Data Kit
<b>OPV</b>	oral polio vaccine
<b>PCIF</b>	Preliminary Case Investigation Form
<b>PHC</b>	primary health centre
<b>PIP</b>	Programme Implementation Plan
<b>PRAGATI</b>	Pro-Active Governance and Timely Implementation
<b>PRI</b>	<i>Panchayati Raj</i> Institution
<b>PU</b>	planning unit
<b>RCH</b>	Reproductive and Child Health
<b>RI</b>	routine immunization
<b>RISE</b>	Rapid Immunization Skill Enhancement
<b>RMNCH+A</b>	Reproductive, Maternal, New-born, Child and Adolescent Health
<b>SBCC</b>	social and behavioural change communication
<b>SDP</b>	Service Delivery Point
<b>SFWB</b>	State Family Welfare Bureau
<b>SIA</b>	Supplementary Immunization Activity
<b>SOP</b>	standard operating procedure
<b>STFI</b>	State Task Force for Immunization
<b>SVS</b>	state vaccine store
<b>ToT</b>	Training of trainers
<b>U5MR</b>	Under-Five Mortality Rate
<b>UIP</b>	Universal Immunization Programme
<b>UNDP</b>	United Nations Development Programme
<b>UNICEF</b>	United Nations Children's Fund
<b>UPHC</b>	Urban Primary Health Centre
<b>VCCH</b>	vaccine cold chain handler
<b>VLM</b>	Vaccine and Logistics Manager
<b>VPD</b>	vaccine preventable disease
<b>VVM</b>	Vaccine Vial Monitor
<b>WHO</b>	World Health Organization
<b>WIC</b>	Walk-in Cooler
<b>WIF</b>	Walk-in Freezer



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## EXECUTIVE SUMMARY

India's Universal Immunization Programme (UIP) is the largest in the world, catering to an annual cohort of 2.6 crore infants and 3 crore pregnant women through around ninety lakh sessions. However, over the past many years, Full Immunization Coverage (FIC) among children aged 12-23 months in the country has increased at a very slow pace of around 1% each year (from 35% in 1992-93 to 62% in 2015-16).

Under its resolve to achieve 90% FIC by December 2020, the Ministry of Health & Family Welfare (MoHFW) launched a massive catch up campaign "Mission *Indradhanush* (MI)" in December 2014. First two phases of MI contributed to an increase in FIC by 6.7 percentage points according to the Integrated Child Health & Immunization Survey (INCHIS). Hon'ble Prime Minister of India has advanced the timeline for reaching the goal of 90% FIC to 2018 and to achieve this, Ministry of Health and Family Welfare (MoHFW) further intensified the Mission *Indradhanush* activities in October 2017.

### Rationale of the review

To achieve the ambitious target of 90% FIC by December 2018, it is pertinent for the states to identify bottlenecks and gaps in all program components through comprehensive UIP review, assess supply and demand side gaps, plan interventions and measure progress. While different fragmented assessments and reviews are carried out by different agencies driven by their mandate and with different data collection methods for example, AFP surveillance cum UIP review, Data Quality Assessment (DQA) and Effective Vaccine Management (EVM) assessment, there is a growing need to integrate different assessments in the form of a comprehensive review of UIP.

Maharashtra, the second most populous state of India, contributes to more than 7% (19.4 lakh) of India's annual birth cohort. As per NFHS - 4 (2015-16), the full immunization coverage (FIC) in the state among children aged 12-23 months was 56%, as compared with the national average of 62%. The full immunization coverage (FIC) in Maharashtra has shown a declining trend during 2005-06 to 2015-16. Additionally, the inequities in immunization coverage across socio-economic groups are relatively wide in the state.

Hence, there was an urgent need to conduct a comprehensive UIP review in the state to identify the gaps and formulate strategies to improve immunization coverage.

## Aim

The review aimed at a comprehensive assessment of strengths, weaknesses and bottlenecks in the immunization program to assist the state in formulation of a plan for improving routine immunization coverage, with clearly defined roles and responsibilities of government and partners with defined timelines.

## Objectives

### Supply side

- 🔗 To analyse programme planning and implementation for routine immunization at different levels of the health care delivery system
- 🔗 To assess governance, accountability and partnerships for UIP in the state
- 🔗 To assess vaccine and logistics supply chain mechanism in the state
- 🔗 To assess the data recording and reporting system, data quality and the use of data as evidence for action
- 🔗 To assess the knowledge and gaps against reporting and surveillance for Adverse Event Following Immunization (AEFI) and Vaccine Preventable Diseases (VPDs)

### Demand side

- 🎯 To assess communication strategies and their implementation, including planning, advocacy, partnerships and social mobilization; and

- 🎯 To assess community perspective and identify the reasons of low uptake of immunization at the level of beneficiaries

### Urban Immunization

- 🔗 To assess additional unique supply side and demand side factors affecting immunization coverage in urban areas

## METHODS

### Area for review

The state was divided into two zones considering geographic and demographic characteristics. For selection of review districts, they were scored on following 3 key indicators from NFHS-4 data:

1. % full immunization coverage (FIC)
2. % drop out for BCG – DPT3
3. % institutional deliveries

Each indicator was given a value ranging from 1 to 5. The scoring was designed such that a higher score represents poor performance. Total score for each district was calculated by adding the values for each of the three indicators. One **good performing** and one **poor performing** district was selected from each of the two zones. In case two or more districts scored the same, one district was randomly selected. From each of the selected districts, one good performing and one poor performing block was selected on the basis of full immunization coverage (HMIS data). Further, two subcentres from each block were chosen randomly. In total, four districts and urban area of the state capital were chosen for review.



## Review approach and tools

For ease of classification, the review was divided into the following four components:



Programme implementation



Logistics and supply chain



Data recording and reporting system



Programme communication

For quantitative data collection, structured questionnaires were administered to the key respondents to assess programme implementation, vaccine logistics and cold chain and data recording and reporting systems. Additionally, an excel tool adapted from WHO methodology was used for Data Quality Assessment (DQA). For qualitative data collection, semi-structured questionnaires were used under programme communication. A detailed methodology for each component is discussed in relevant sections of this report. The questionnaires were designed into an android based ODK tool for ease of data collection and analysis. The review was conducted from 28<sup>th</sup> August to 1<sup>st</sup> September 2018. The data presented in the report pertains to the period between April 2017 and March 2018, unless specified otherwise.

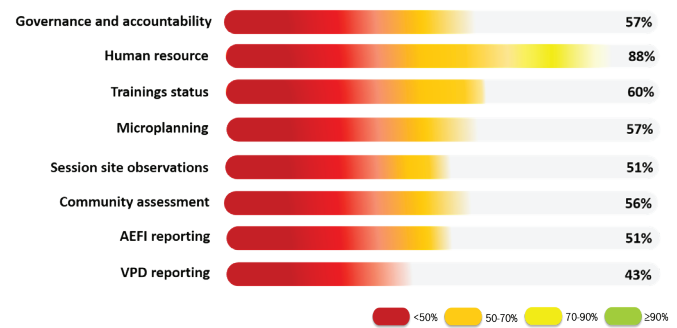
### Coordination with technical experts from government and partners

At each step of shaping the process of review, Immunization division and experts from CORE, GHS, JSI, NCCVMRC, NHSRC, NIHF, UNDP, UNICEF and WHO were consulted through multiple meetings and communications. Experts from partner agencies also participated in the field review.

## SNAPSHOT OF FINDINGS

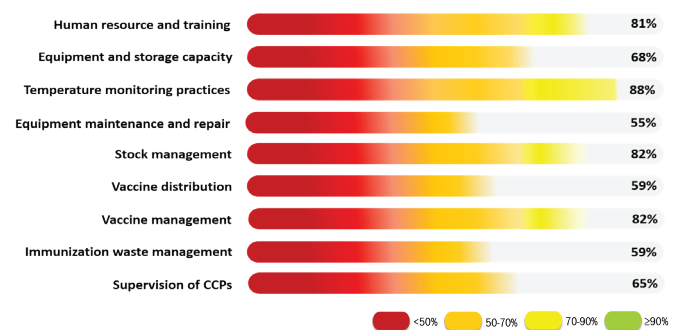
To summarise the findings, a snapshot is illustrated for each thematic area and divides performance of state into four categories ( $\geq 90\%$  - good; 70 - 90% - fair, 50 - 70% - average and  $<50\%$  - poor). Low percentage would indicate inadequate performance of the state for that indicator.

### Programme implementation



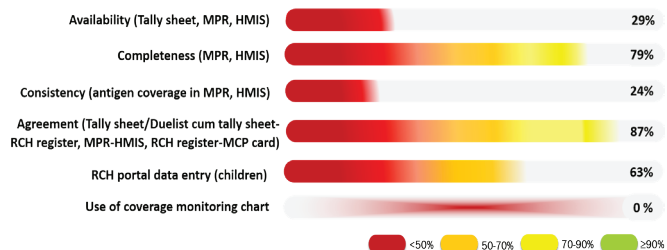
Under the program implementation domain, state has an average governance and accountability, microplanning, session site and community coverage. Status of human resource was found to be fair while trainings were average. Reporting of AEFI cases scored average but coordination mechanism for VPDs reporting was poor.

### Logistics and supply chain



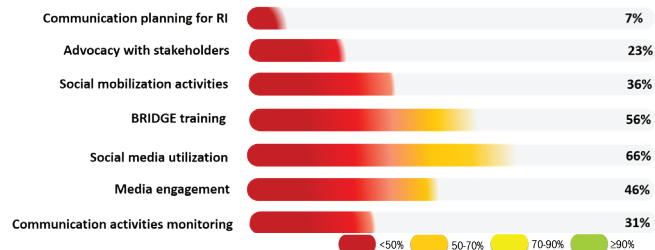
In the vaccine, logistics and cold chain domain, human resource and training on cold chain, temperature monitoring practices, stock and vaccine management was found to be fair. Remaining processes were found to be average.

### Data recording and reporting system



There was poor availability of tally sheets, MPR and HMIS reports along with poor consistency in the MPR and HMIS reports. While completeness of available records and agreement between different recording and reporting formats scored fair, the status of RCH data entry in the portal scored average. Use of coverage monitoring chart scored poor.

### Programme communication



For programme communication, social media utilization and BRIDGE training were found to be average, while rest of the processes scored poor.

### Way forward

Critical gaps in the immunization processes identified during the review will help the states to formulate an immunization coverage improvement plan in consultation with partners. This iCIP will be broadly guided by the 'Roadmap for achieving 90% full immunization coverage in India by December 2018 and sustaining thereafter' envisaged and formulated at the national level.



# 1 INTRODUCTION

## Background

Immunization is a proven, cost-effective<sup>1</sup> and the most powerful<sup>2</sup> public health intervention to prevent morbidity and mortality from vaccine preventable diseases.<sup>3</sup> According to WHO estimates, immunization averts an estimated 20 lakh to 30 lakh deaths every year from diphtheria, pertussis, tetanus and measles, and an additional 15 lakh deaths can be averted if global vaccination coverage is improved.<sup>4</sup>

India's commitment to improve child health is reflected in its Universal Immunization Program (UIP). It is the largest public health program in the world, catering to an annual cohort of ~2.6 crore infants and 3 crore pregnant women, through 90 lakh sessions every year.<sup>5</sup> Despite the strenuous efforts to improve child health, Infant Mortality Rate (IMR) of India is 41 and the under-five mortality rate (U5MR) is 50 per 1000 live births.<sup>6</sup> Immunization coverage is a key driving force to meet the Sustainable Development Goal -3.

Over the past many years, immunization coverage among children age 12-23 months in the country has increased at a very slow pace of around 1% each year (from 35% in 1992-93 to 62% in 2015-16).<sup>7</sup> With the aim to increase full immunization coverage to 90% by 2020, Mission *Indradhanush* was launched in December 2014 to reach out to unvaccinated and partially vaccinated children through focus on hard-to-reach & high-risk areas.

As per the report of Integrated Child Health and Immunization Survey (INCHIS), first two phases of MI contributed to an increase in FIC by 6.7 percentage points. While acknowledging the impact of MI in improving immunization coverage across the districts over the phases, Hon'ble Prime Minister of India, emphasized the need to increase the immunization coverage to 90% by December 2018.<sup>8</sup> To achieve this, Ministry of Health and Family Welfare (MoHFW) launched Intensified Mission *Indradhanush* (IMI) in October 2017 in 190 high focus districts/ urban areas of the country. Regular review of this programme is conducted under Pro-Active Governance and Timely Implementation (PRAGATI) by Hon'ble Prime Minister of India.

<sup>1</sup>WHO, UNICEF, World Bank. State of the world's vaccines and immunization, 3rd ed. Geneva: World Health Organization, 2009.

<sup>2</sup>[http://www.searo.who.int/immunization/documents/regional\\_immunization\\_strategy\\_2010-2013.pdf?ua=1](http://www.searo.who.int/immunization/documents/regional_immunization_strategy_2010-2013.pdf?ua=1)

<sup>3</sup>World Health Organization (WHO). 2017. 10 Facts on Immunization. retrieved from: <http://www.who.int/features/factfiles/immunization/en/>

<sup>4</sup><http://www.who.int/mediacentre/factsheets/fs378/en/>

<sup>5</sup>Comprehensive Multi Year Plan 2013-2017

<sup>6</sup>International Institute for Population Sciences (IIPS) and ICF. 2017. *National Family Health Survey (NFHS-4), 2015-16: India*. Mumbai: IIPS.

<sup>7</sup>International Institute for Population Sciences (IIPS) and ICF. 2017. *National Family Health Survey (NFHS-4), 2015-16: India*. Mumbai: IIPS.

<sup>8</sup>Press Information Bureau, Government of India, Ministry of Health and Family Welfare. 2017. retrieved from: <http://pib.nic.in/newsite/printrelease.aspx?relid=171499>

<sup>9</sup>A guide for conducting EPI reviews [www.who.int/immunization/documents](http://www.who.int/immunization/documents)

<sup>10</sup>Based on estimates received from Immunization Division, MoHFW

<sup>11</sup>Full Immunization Coverage is defined as receipt of one dose of Bacillus Calmette-Guerin (BCG), three doses of oral polio vaccine (OPV) and three doses of diphtheria, pertussis, tetanus (DPT) or Pentavalent, and one dose of measles containing vaccine.

<sup>12</sup>International Institute for Population Sciences (IIPS) and Macro International. 2007. *National Family Health Survey (NFHS-3), 2005-06: India*. Volume I. Mumbai: IIPS.

<sup>13</sup>International Institute for Population Sciences (IIPS) and ICF. 2017. *National Family Health Survey (NFHS-4), 2015-16: India*. Mumbai: IIPS.

## Rationale

It is pertinent for the states to identify bottlenecks and gaps in all program components that are likely to delay achievement of 90% FIC, through comprehensive UIP review, and to have an updated state-specific coverage improvement plan which can be guided by measurable indicators to assess progress. Different fragmented assessments and reviews are carried out by different agencies driven by their mandate and with different data collection methods, for example AFP surveillance cum UIP review, Data Quality Assessment (DQA) and Effective Vaccine Management (EVM) assessment. Hence, there was a growing need to integrate different assessments in the form of a comprehensive review for UIP. A comprehensive review will also help in assessing determinants of immunization coverage. Further, to formulate or revise coverage improvement plans, reasons for inequities within the state have to be assessed in detail.

Comprehensive programme assessment promotes consistency across assessments and strengthens advocacy efforts.<sup>9</sup> The coverage improvement plans will guide and strengthen the review mechanism of state and district task forces and assess the progress made.

Maharashtra, the second most populous state of the country, contributes to more than 7% (19.4 lakh) of India's annual birth cohort of 2.6 crore children.<sup>10</sup> According to National Family Health Survey-4 (NFHS-4), the infant mortality (24 deaths per 1,000 live births) and under five mortality (29 death per 1,000 live births) rates in the state are better than the national average (41 deaths/1000 live births - IMR and 50 deaths/1000 live births - U5MR). However, the full immunization coverage (FIC)<sup>11</sup> among children aged 12-23 months has declined from 59%<sup>12</sup> in 2005-06 to 56% in 2015-16 which is much below the national average of 62%.<sup>13</sup> In spite of conducting four phases of MI in the state from 2015 to 2017, 11 out of 35 districts of the state were identified for IMI. There is a requirement to identify the problems in the operationalization of the programme, and to address these on an urgent basis. As the country is

approaching the deadline of December 2018 to reach the goal of 90% FIC, a comprehensive gap assessment of this state becomes a priority, followed by formulation and implementation of a coverage improvement plan.

Inter-district disparities in FIC within Maharashtra are huge, with coverage ranging from 32.8% in Nandurbar to 82% in Gadchiroli. Keeping state level inequalities in mind, interventions may be different for good and poor performing districts.

Urban healthcare including immunization is delivered by 36 Municipal Corporations and 360 Municipal councils (including *nagar panchayat*) as per Directorate of Municipal Administration, Maharashtra. Maharashtra has 95 cities under National Urban Health Mission (NUHM). Rapid population growth in urban areas due to migration, along with shortage of infrastructure, leads to poor access to and utilization of immunization services. Hence, urban immunization requires special emphasis in terms of identifying unique challenges for urban areas and making a need-based improvement plan.

### Aim and objectives

**Aim:** The review aimed at a comprehensive assessment of strengths, weaknesses and bottlenecks in the immunization program to assist the state in formulation of a plan for improving routine immunization coverage, with clearly defined roles and responsibilities of government and partners with defined timelines.

#### Supply side objectives

- 🔗 To assess and analyze programme planning and implementation for routine immunization at different levels of the health care delivery system
- 🔗 To assess governance, accountability and partnerships for UIP in the state
- 🔗 To assess vaccine and logistics supply chain mechanism in the state
- 🔗 To assess the data recording and reporting system, data quality and the use of data as evidence for action
- 🔗 To assess the knowledge and gaps against reporting and surveillance for Adverse Event Following Immunization (AEFI) and Vaccine Preventable Diseases (VPDs).

#### Demand side objectives

- 🎯 To assess communication strategies and their implementation, including planning, advocacy, partnerships and social mobilization
- 🎯 To assess community perspective and identify the reasons of low uptake of immunization at the level of beneficiaries.

#### Urban Immunization

- 📄 To assess additional unique supply side and demand side factors affecting immunization coverage in urban areas





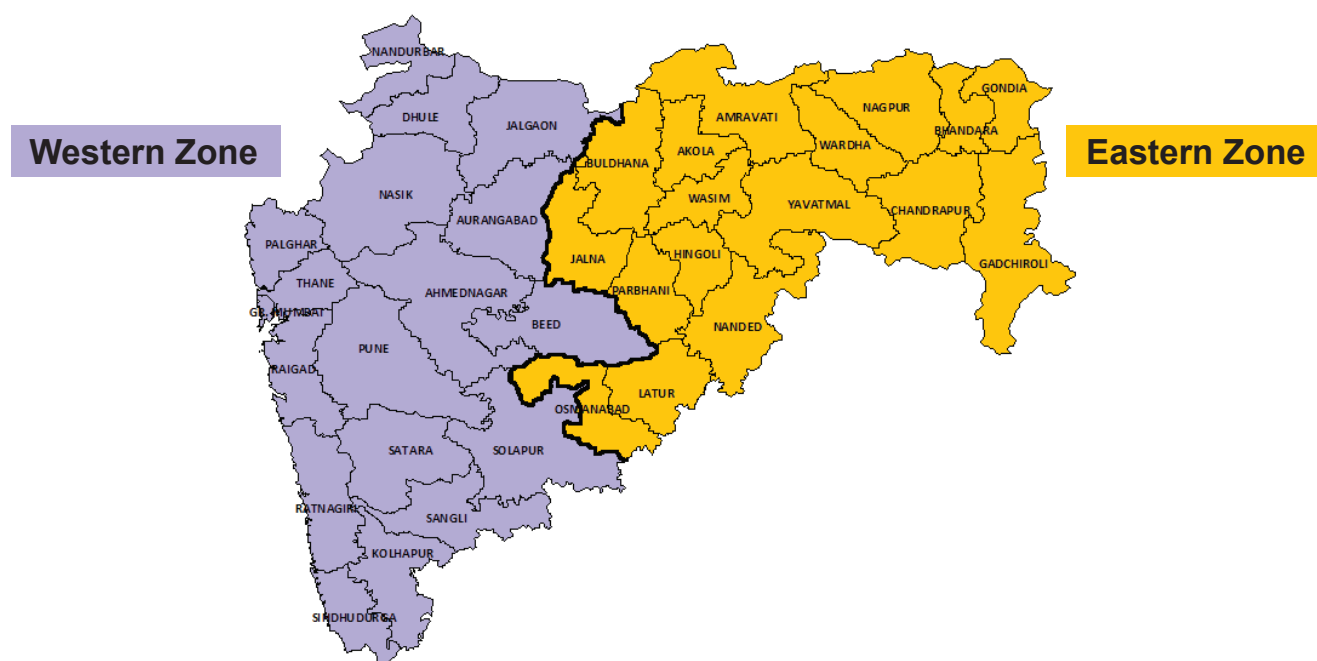
# 2

# METHODOLOGY

## Review design

### A. Selection of area for review

**Figure 1: State's division into two zones**



The state was divided into two zones based on geographic and demographic characteristics (Fig. 1). The **western zone** consists of 18 districts while **eastern zone** consists of 17 districts. In total, four districts and urban planning units of the state capital were selected for review through a composite scoring system based on three indicators from NFHS-4.

1. % full immunization coverage (FIC)
2. % drop out for BCG – DPT 3
3. % institutional deliveries

Districts were allocated a score for each of the three indicators as per Table 1 given below. The evaluation was designed in such a way that a higher score represented poor performance.

**Table 1: Scoring system for districts selection**

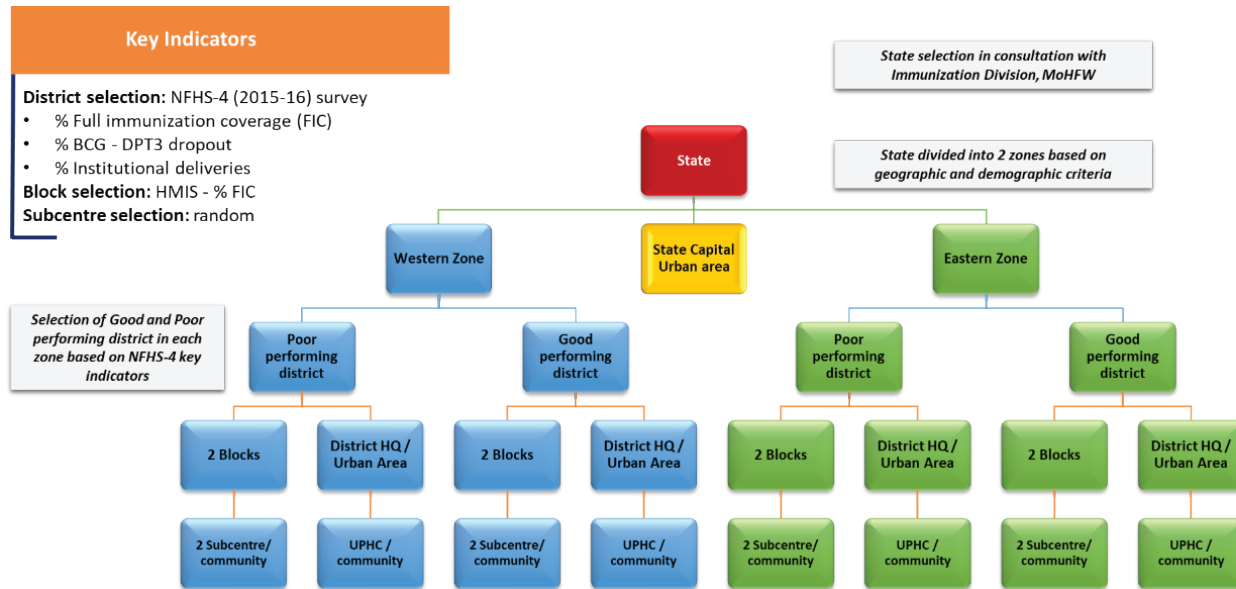
Indicators			Score allocated
FIC	BCG – DPT 3 drop out	Institutional deliveries	
≥90%	<10%	≥90%	1
75–90%	10-20%	80-90%	2
60–75%	20-30%	70-80%	3
45–60%	30-40%	60-70%	4
<45%	≥40%	<60%	5



The total score was calculated for each district by adding the individual score for each of the three indicators. One **good performing** and one **poor performing** district was selected from each of the two zones based on aggregate scores. If more than one district scored the same, one district was selected randomly. From each of

the selected districts, one good performing and one poor performing block was selected on the basis of FIC (HMIS data). Subcentres in the selected blocks were chosen randomly, and the state capital urban area and urban areas in all reviewed district headquarters (HQ) were selected to assess urban immunization (Fig. 2).

**Figure 2: Selection of review area**



*b. Approach for the review*

Both quantitative and qualitative information related to UIP was collected in selected districts on programme implementation, vaccine logistics and cold chain, data recording and reporting system and programme communication. A detailed methodology for each component is discussed in relevant sections of this report. The data reviewed pertains to the period between April 2017 and March 2018, unless specified otherwise.

*c. Duration of review*

The review was conducted from 28<sup>th</sup> August to 1<sup>st</sup> September 2018, followed by a debriefing of the state and respective district officials on key qualitative findings on 1<sup>st</sup> September 2018.

**Tools used for the review**

For ease of classification, the review was divided into four components, namely Programme implementation, Data recording and reporting system, Vaccine logistics and cold chain and Programme communication.

*a. Review questionnaires*

- 📄 For quantitative data collection, structured questionnaires were administered to the key respondents. Additionally, an excel tool adapted from WHO methodology was used for DQA
- 📄 For qualitative data collection on 'programme communication', semi-structured questionnaires were used for interviewing key respondents
- 📄 Additional information and observations, if any, were captured in 'remarks' section

*b. Data entry and analysis plan*

The questionnaires were designed on an android based ODK tool. A set of indicators was finalized for analysis, based on the requirement and scope of the review. An excel based calculation worksheet was prepared for the agreed indicators for analysis, and a comparative analysis across relevant indicators for districts was done.

*c. Ethical considerations*

An ethical approval was sought from JSI-IERB (Institutional ethical review board) for this review, for which the study protocol, questionnaires, DQA data entry tool and SOPs on DQA were submitted. After a thorough review, IERB decided to exempt this review from full scrutiny. Moreover, to maintain the regular protocols of ethics, an informed consent was obtained from the respondents and no attempt was made to capture the identity of the interviewees.

*d. Quality control*


The following steps were taken to ensure the quality of review:

- 🔍 Pretesting of questionnaire and data entry tools
- 🔍 Pre-visit to Maharashtra for understanding of recording and reporting mechanism

- 🔍 Induction training of all investigators on review questionnaires and ODK tool
- 🔍 Establishment of control room to review the daily feedback through conference calls and resolve queries on an immediate basis
- 🔍 Supervisory visits during actual field visits.

*e. Coordination with technical experts from government and partners*

At each step of preparation for the review, Immunization division and experts from CORE, GHS, JSI, NCCVMRC, NHSRC, NIHF, UNDP, UNICEF and WHO were engaged to give inputs through multiple meetings and communications. Experts from partner agencies also participated as reviewers.



# 3.1

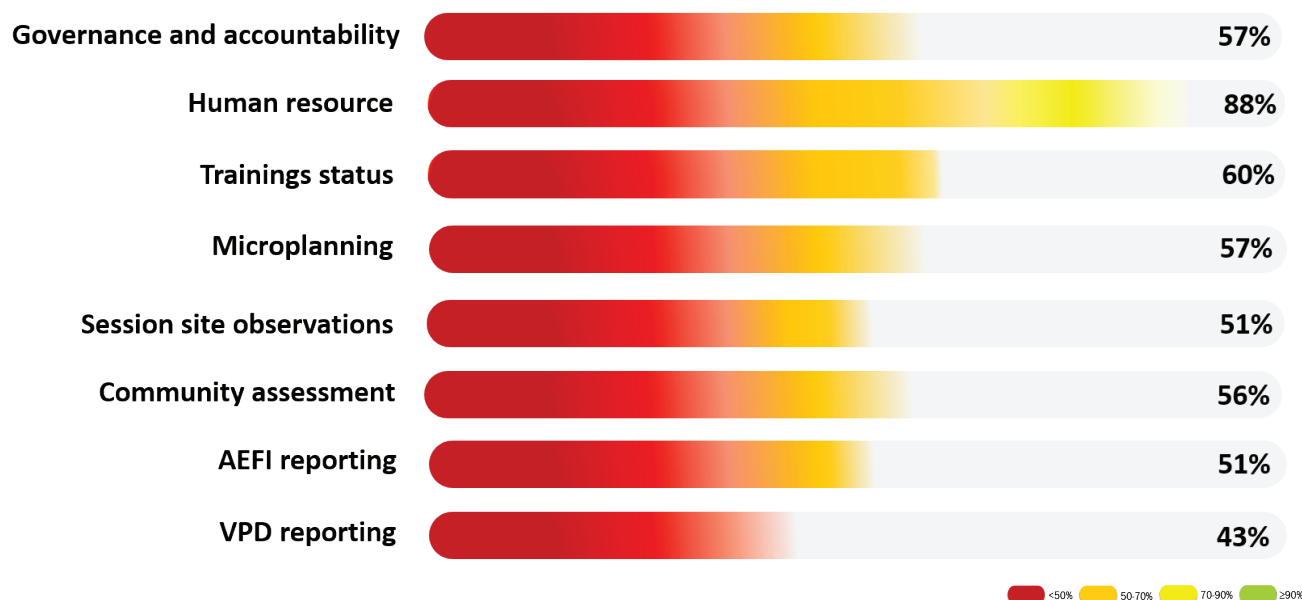
## PROGRAMME IMPLEMENTATION

## Review approach

The review was conducted at the state level, in four identified districts and Mumbai city. The sample includes nine urban and eight rural planning units along with 29 session sites and 298 children.

The information collected was analysed under different subheads – Programme management, human resource and capacity building, service delivery and AEFI and VPD reporting. A cumulative score across all the levels was calculated for each subhead as illustrated below in Figure 3.

**Figure 3: Snapshot of review findings - Programme implementation**



## Programme management

Findings related to the existing governance and accountability mechanism, including supportive supervision and inter-sectoral coordination are summarised below:

### i) Governance and accountability

**At the state level**, immunization programme is led by Additional Director- State Family Welfare Bureau (SFWB), State EPI Officer-SEPIO with support from Deputy Director (EPI) & Assistant Director RI and RI cell consisting of a Programme officer, Monitoring and Evaluation officer and a Vaccine & logistics manager, along with State Cold Chain Officer

The state has devised various committees, task forces and fora for periodic programme reviews and minutes from these meetings have been analysed.

State had conducted one state steering committee meeting; however, no minutes were available for the meeting to comment further.

State conducted four STFIs in 2017-18, however minutes of only one meeting were available. As per minutes available, discussions were held on planning and findings of IMI where social mobilization strategies, and due listing were focused. Comprehensive review of critical components of routine immunization like human resource status, microplanning, fund utilization, reported coverage data and communication plans was not conducted in the task force meeting.

State had conducted eight RCH review meetings with District Reproductive and Child Health Officer (DRCHOs) in 2017-18. Poor performance of districts as per HMIS coverage data is discussed in detail during these reviews, but no minutes were available for these meetings to comment further. Recent review took place in August 2018, where routine immunization was discussed along with other RCH components.

State level officers were nominated for poor performing districts for IMI in 2017-18. However, such nomination has not taken place for RI. While three-fourth of the assessed districts were visited by a state official for review of various health programmes including RI during the last 3 months, visit report was available only in one district.

In order to create a robust system of concurrent monitoring, state has made a provision to fund 130 Immunization field monitors (IFM) through NHM and now their district wise deployment is in process.

**At the district level,** District task Force for Immunization (DTFI) has been constituted in all districts under the chairmanship of District Magistrate (DM), which is expected to review programme performance once a month. Further, Chief Medical and Health Officers (CMHO) are expected to conduct quarterly reviews for RI with block medical officers.

Figure 4 shows that only 33% of the expected DTFI meetings were held, ranging from 8% to 75% in the reviewed districts. Minutes of DTFIs were available for 81% of meetings held. As per available minutes, DTFIs were held only for campaigns like IMI and Polio NIDs. Comprehensive review of critical components of routine immunization like human resource status, microplanning, fund utilization, reported coverage data and communication plans were not conducted in these task force meetings. Furthermore, the state has no mechanism to check the quality and comprehensiveness of discussions and decisions taken in DTFIs.

Almost all districts had weak mechanism of quarterly review for RI. Only one out of four assessed districts conducted quarterly review meetings for RI. Discussions and participation during these reviews cannot be commented upon due to poor availability of related minutes.

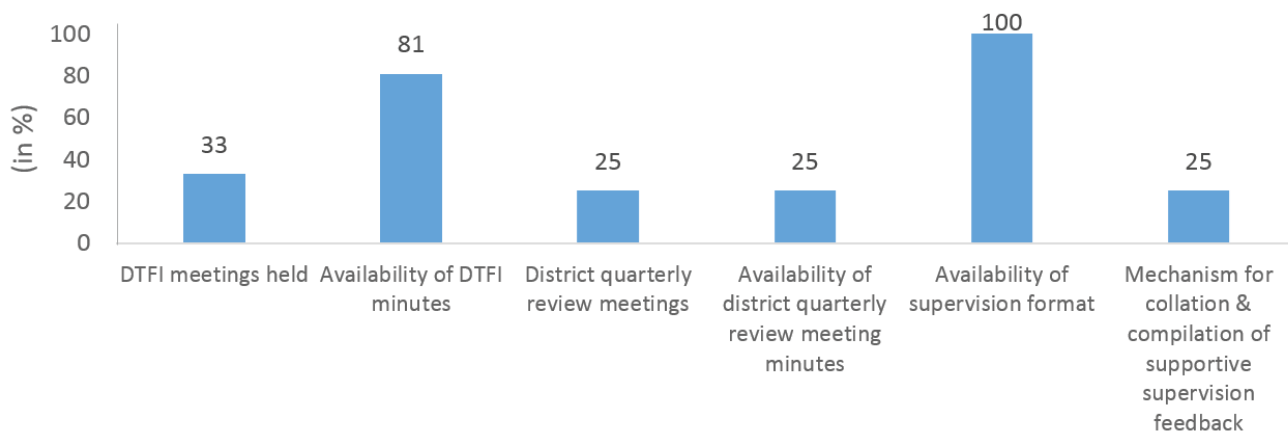
While 75% of districts had identified their poor performing blocks based on HMIS coverage data, only two-third of them had assigned district level officers for their supervision. Although a checklist for supervision of RI was present in all assessed districts, it was being filled in only half of these districts by district level officers. Only one of these districts had any mechanism of collation and compilation of feedback generated by officers. RI feedback was largely being shared with block level officers either through review meetings or through letters/ emails; no mechanism of feedback sharing existed in one-fourth of the districts.

**At rural planning unit level,** review of immunization programme was generally in the form of monthly meetings (in approx. 63% planning units) with health workers and supervisors. Representation from ICDS department was minimal during such reviews.

Although more than 60% of the rural planning units were visited by a senior official in last three months for supervision of RI activities, no documentation for such visits was available.

Variable mechanism of supportive supervision was seen at block level. Only 62% of the subcentre microplans had any supervisor assigned, but a documentation related to findings of RI supervision was found with less than 15% of supervisors involved in RI. Supervisory visits were found at 66% of session sites.

**Figure 4: District level programme activities conducted against expected performance**



Source: Analysis of available minutes/attendance records/presentations from reviewed districts

## ii) Inter-sectoral coordination

### Inter-department coordination

State has issued directives for convergence between ANM, ASHA and *Anganwadi* workers through coordination meetings; however, this mechanism was not found to be existing in one-fourth of the districts. In spite of the directives, almost 60% of the rural planning units had no fixed day meeting mechanism in place for AAA convergence. Moreover, a weak participation from ICDS is seen at block level for immunization review meetings.

### Partner coordination

Development partners work with the state government on various aspect of immunization programme (Table 2 and Fig. 5). WHO-NPSP, through its presence at the state level and in 11 field units, coordinates concurrent monitoring and microplanning for routine immunization and special campaigns. There is no mechanism of 'joint monitoring'

by government and partners for routine immunization.

UNDP supports strengthening supply chain through Electronic Vaccine Intelligence Network (eVIN) implementation. UNICEF supports social mobilization, monitoring and training through its presence at state and in 5 districts. JSI supports 'Rapid Immunization Skill Enhancement (RISE)' project at state.

## Human resource and capacity building

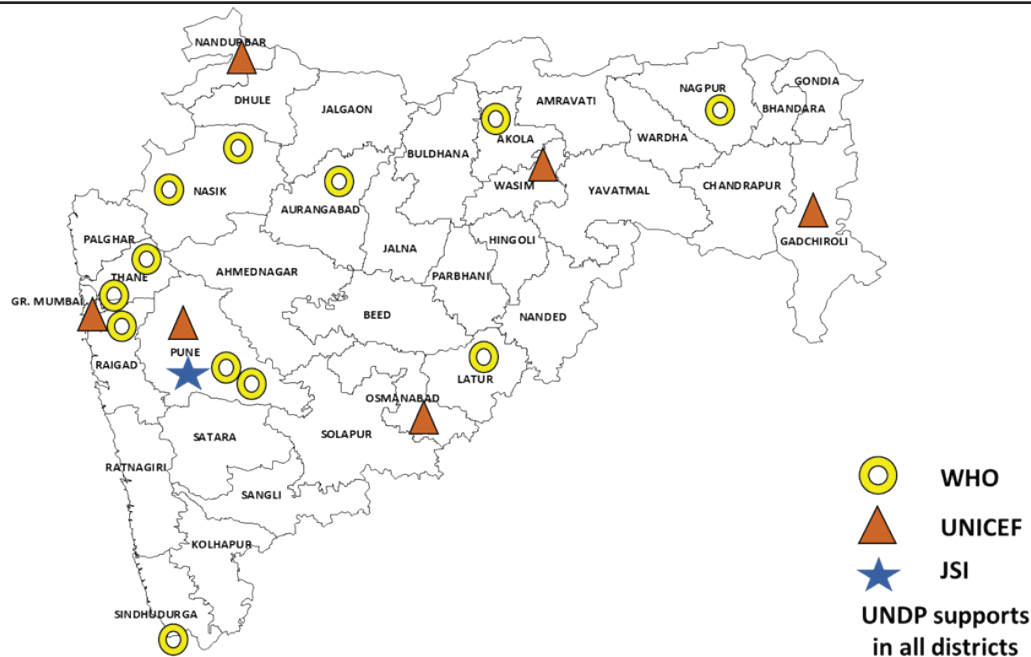
In half of the reviewed districts, position of a regular DRCHO was vacant and immunization programme was being managed either by district health officer of another programme or a '*taluka*' health officer. Almost all DRCHOs were given charge of additional programmes. Vacancy status of human resource cadre engaged in immunization is depicted in Table 3.

Districts had moderately high vacancies of MOs (both

**Table 2: Immunization partners' support by thematic areas**

Immunization partners	WHO-NPSP	UNICEF	UNDP	JSI
<b>Presence in state</b>	State and 11 field units	State and 5 field units	State and all districts	State level
<b>Thematic areas</b>	Microplanning and monitoring of RI and SIAs for polio, Measles elimination and rubella control	Social mobilization, monitoring and training	Supply chain management (eVIN)	Rapid Immunization Skill Enhancement (RISE)

**Figure 5: Immunization partners' landscape: Maharashtra**



regular and contractual). Although the state average of regular ANMs vacancy is low, but three fourth of the districts assessed had high vacancies. Figure 6 illustrates district wise vacancy of regular MOs.

*Capacity Building*

Training for MOs on Immunization handbook takes place

at 7 regional health and family welfare training centres. Training status of MOs and Health Workers' (2-day) training on immunization module in last two years and cold chain handlers training on VCCH module is given in Table 4. Weak planning of training batches is evident from the table.

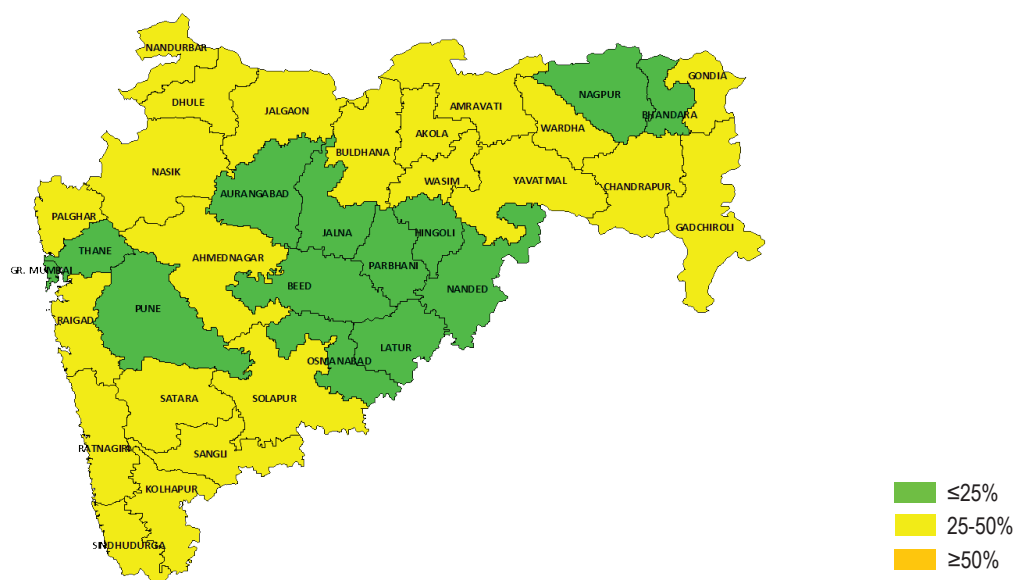
Training status of ANMs was also assessed at session sites. Only three-fifth of the ANMs interviewed had

**Table 3: Human resource vacancy status**

HR Cadre	% Vacancy					
	District A	District B	District C	District D	Average (A, B, C & D)	State (35 districts)
<b>MO- Regular</b>	15	24	3	30	18	30
<b>MO- Contractual</b>	34	0	38	0	35	22
<b>LHV</b>	22	26	14	18	20	11
<b>HS</b>	11	18	9	0	12	Not Available
<b>ANM-Regular</b>	39	25	9	38	31	9
<b>ANM- Contractual</b>	1	1	1	23	4	9
<b>ASHA</b>	1	1	7	0	2	1
<b>AWW</b>	0	0	0	10	4	3

Source: Recent available data received from State/District Programme Management Units

**Figure 6: Vacancy status of regular medical officers**



received two days training on immunization. Only 55% ANMs could correctly explain how to identify suspected diphtheria, pertussis, neonatal tetanus, measles and AFP cases; only 17% and 10% of ANMs were aware of reporting of VPDs in MPR and 'S' form of IDSP respectively.

Nearly one-fifth (17%) ANMs could not tell correct age, dose and route of fIPV administration. Nearly one-third

were not aware of the correct sequence of administering multiple antigens during a single visit.

Knowledge on AEFI reporting among health workers was found to be poor. As high as three-fifth of the ANMs could not mention even a single type of serious AEFI; remaining could mention only 'death'. Similarly, nearly half of ANMs

**Table 4: Status of immunization trainings**

Immunization training	% Staff planned against existing	% Staff trained out of planned
Medical Officers (2016-17 and 2017-18)	19	90
Health workers (2016-17 and 2017-18)	13	100
Cold Chain Handlers (CCH)	Data not available	91

Source: Data as received from state

were not aware of the nearest AEFI management centre. Only one-third were aware of the reporting of AEFI cases in block/planning unit AEFI registers.

### Service delivery

The following components of immunization service delivery were reviewed:

- I. Microplanning
- II. Session site observations
- III. Community coverage assessment

#### Microplanning

State has not yet conducted any training on microplanning. Microplans from 21 planning units were assessed for availability and quality, out of which RI microplan at one urban planning unit was not available. Sixteen of these microplans were further analysed for updation, HRA

coverage plan, alternate planning for vacant subcentres and incorporation of IMI sessions (wherever applicable), while remaining four microplans could not be reviewed in detail, as required information on above components was unavailable at district level.

Only 55% of the total microplans were prepared on state prescribed formats, while remaining were available either on older format or as a single pager. AVD plan was not available in three-fifth of microplan while columns for newer vaccines were not available in nearly one-third of microplans (Table 5).

Of the 151 ANM/subcentre plans assessed, major issues were noted regarding availability of AEFI management centre details and subcentre maps. ANM roster and enlisting of all villages/*mohallas*/hamlets/HRAs were not available in nearly half of the subcentre plans. Detail of district-wise status of microplans reviewed is seen in Figure 7.

**Table 5: Microplan analysis**

Indicators	%	
Availability of microplan (n=21 planning units)	95	
Availability on state specified format (n=20 planning units)	55	
Availability of AVD plan (n=20)	40	
Columns for new vaccines	IPV (n=20)	65
	JE (n=3)	67
Subcentre/ANM area wise plans with enlisting of villages/ <i>Mohallas</i> , hamlets and HRAs (n= 151)	54	
Subcentre/ANM area wise plans with the number of beneficiaries available (n=151)	71	
Subcentre/ANM area wise plans with the subcentre map available (n=151)	11	
Subcentre/ANM area wise plans with vaccine and logistic formats available (n=151)	67	
Subcentre/ANM area wise plans with details of AEFI management centre (n=151)	3	
Subcentre/ANM area wise plans with ANM roster (n=151)	55	
Subcentre/ANM area wise plans with supervisor assigned (n=151)	62	
Sessions with mobilizers name mentioned in microplan (n= 797)	33	
One supervisor assigned to more than five subcentre areas (n=37 supervisor)	54	
Vacant subcentre plan with fixed ANM accountability (n=7 planning units)	14	
IMI sessions incorporated in RI microplan (n=16 sessions)	88	



One-third of the subcentre plans lacked vaccine logistics format. Supervision plan was available in nearly three-fifth of subcentre plans but more than half of supervisors were assigned five or more subcentres for supervision.

Planning for vacant subcentres was assessed in planning units having such subcentres. Alternate arrangement with fixed accountability to cover such subcentres was found only in 14% planning units.

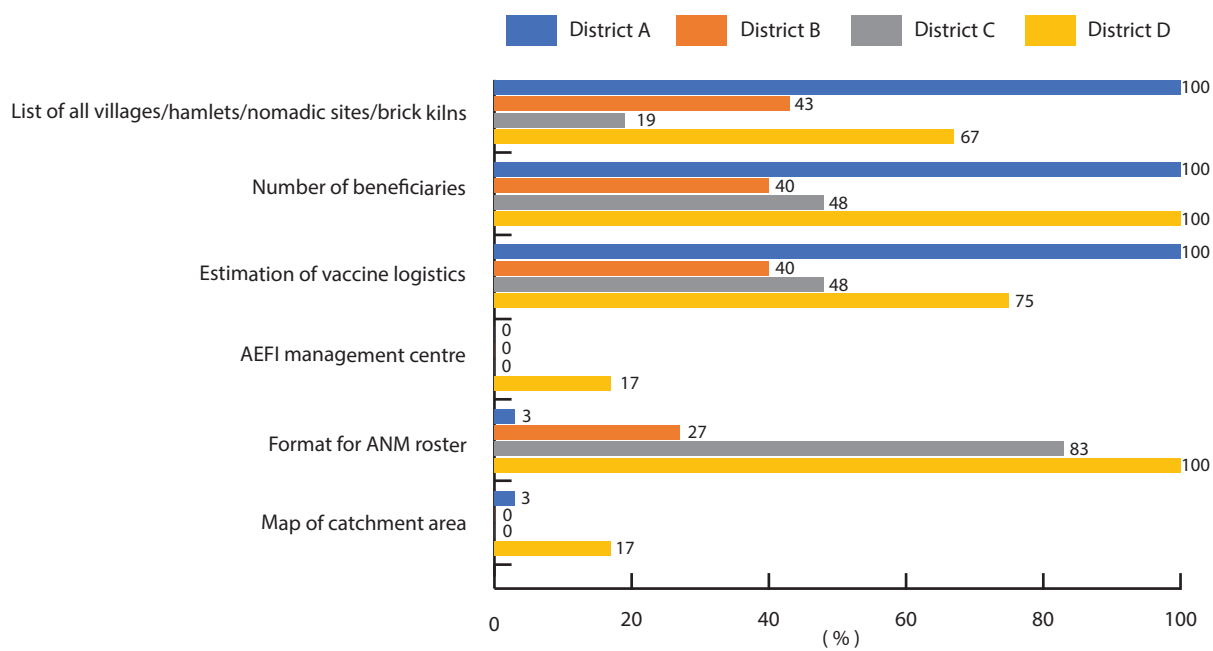
Only 33% of the session sites had a mobilizer assigned

in the microplan. While HRAs for RI were identified, two-third of the HRAs had been tagged to existing sessions, nearly 20% covered by independent sessions, and 6% were planned during special campaigns only. 88% of the exclusive IMI sessions have been included in RI microplans.

*Session site observations*

A total of 29 sessions were assessed in rural and urban areas for various critical processes affecting service delivery. All sessions were conducted as per microplan.

**Figure 7: Availability of critical components in microplans (%)**



While ASHAs were found to be present at nearly 80% of session sites, AWWs were present at only 35% session sites visited. A few key indicators are shown in Table 6.

(a) **Headcount survey, due listing and tracking of left outs/drop outs:** Mobilizers at nearly 62% sessions sites failed to show a record of headcount survey. Updated headcount survey was present at only 10% of session sites. Due list was available at 83% of the session sites; however, an updated due list was available at less than half of the session sites. Nearly 55% of due lists were not available on standard formats.

Active tracking of drop outs and left outs by health workers was assessed by scrutinizing previous due lists and records at the session sites. It was found that health workers at only 52% of the sessions were performing active tracking. More than half of the ANMs

were hesitant to vaccinate children with a minor illness like mild fever/diarrhoea. At the end of the session, less than 10% ANMs prepared and shared the due list for the next session with ASHAs/mobilizers for updation.

(b) **Immunization safety:** All of the ANMs were seen to use a separate syringe for reconstitution of each vial of BCG, Measles and JE vaccines (wherever applicable). Although almost four-fifth of ANMs gave four key messages, more than half of the ANMs did not ask caregiver to wait for 30 minutes after vaccination.

(c) **Supervision:** Only 66% of the sessions were visited by any supervisor before visits by the review team.

(d) **ASHA incentives:** ASHAs seemed to be less aware of incentive for mobilization of beneficiaries

**Table 6: Session site findings on key processes (n=29)**

Indicators	%
Session site as per microplan	100
ASHA found working as a mobilizer	79
AWW found working as a mobilizer	35
Record of updated headcount survey availability	10
Due list availability	83
Updated due list availability	45
Preparation and sharing of the next month session's due list by ANM with ASHA/mobilizer at the end of the current session	7
Supervisory visit	66
ANM received 2-day training on immunization	59
Knowledge about correct sequence of administering multiple antigens	69
ANM awareness about VPD case reporting in MPR	17
ANM awareness about atleast one type of serious AEFI cases	41
ANM awareness about the recording of AEFI cases in register available at planning units	31
ANM awareness about designated AEFI management centre	48
ANM delivering 4 key messages to caregivers (n=23)	78

to session site as compared to full and complete immunization component. Almost 52% ASHAs had received RI incentives in the last quarter.

(e) **Knowledge of ANMs:** Information has been dealt with in the 'capacity building' section.

#### *Community coverage assessment*

Caregivers of 298 children in the age group 0–23 months were interviewed to assess the vaccination status of their children. MCP card retention was 89%. A little more than half of the children born at government or private health facilities had been given Hepatitis B birth dose (Table 7).

Seventy-four percent children (0–23 months) were

found to be vaccinated appropriately as per age. ANMs, ASHAs/CHV were the major source of information and mobilization of the beneficiaries.

Names of all beneficiaries were also cross-checked for inclusion in headcount survey record in order to assess the robustness and completeness of the survey. Only one-third of the names were present in the headcount survey. For remaining, either the name was not included or there was no headcount survey available with the mobilizer. However, **nearly three-fourth of the names of partially vaccinated and unvaccinated beneficiaries were missing from the available due list with mobilizers.**

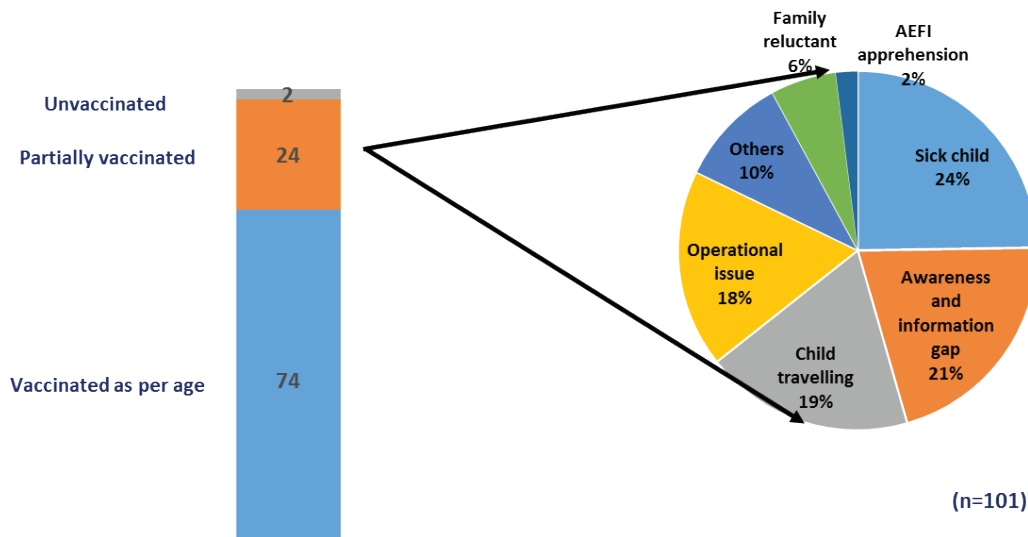
**Table 7: Community assessment findings**

Indicators	%
MCP card available with household (n=298)	89
Hepatitis B birth dose given to new born delivered in government or private health facilities (n=292)	55
Major source of information on vaccination to caregivers (n=316 responses)	ANM/ASHA/CHV – 88 AWW – 9
Mobilization of beneficiaries to session site by ASHA/CHV (n=342 response)	74
Name of partially vaccinated and unvaccinated beneficiaries available in the due list (n=78)	26
Name of children in the headcount survey (n=298)	34

Figure 8 illustrates the reasons for children being partially vaccinated and unvaccinated as per age. 'Child being sick' was the most common reason, followed by 'awareness and information gap'.

These findings are also substantiated with the fact that funds have been sub optimally utilized especially under 'ASHA incentive for full and complete immunization' at state. Along with this, the state has also spent inadequately under 'focus on slums and underserved areas in urban areas/alternate vaccinator for slums'.

**Figure 8: Reasons for partially vaccinated and unvaccinated children**



### AEFI and VPD reporting

All DRCHOs were trained on guidelines for AEFI Surveillance in 2015, followed by cascaded training till health worker level. Three state AEFI committee meetings were held in 2017-18 as against the expected norm of four meetings. Minutes of the meetings revealed that causality assessment was the main agenda and there was no discussion on the performance of districts, especially in terms of frequency of district AEFI committee meetings or on districts silent for case reporting.

Table 8 shows year-wise number of silent districts for AEFI reporting. Seven districts (Ahmednagar, Aurangabad, Latur, Nanded, Nandurbar, Solapur and Yavatmal) have not reported any serious/severe AEFI case from January 2015 till December 2017.

At the state level, line list for AEFI cases was found to be updated when matched with national linelist. Out of total 139 AEFI cases reported in 2017 (Jan-Dec), CRF of 2 cases, PCIF of 18 cases and FCIF for 50 cases were not shared with AEFI Secretariat. A few cases were also found in districts which did not reflect in state linelist.

While three out of the four districts reviewed had reported serious/severe AEFI cases in 2017-18, documents related to the reported AEFIs were available at all the districts. Moreover, all the districts assessed had some missed cases i.e. their documents had not been shared with national AEFI secretariat.

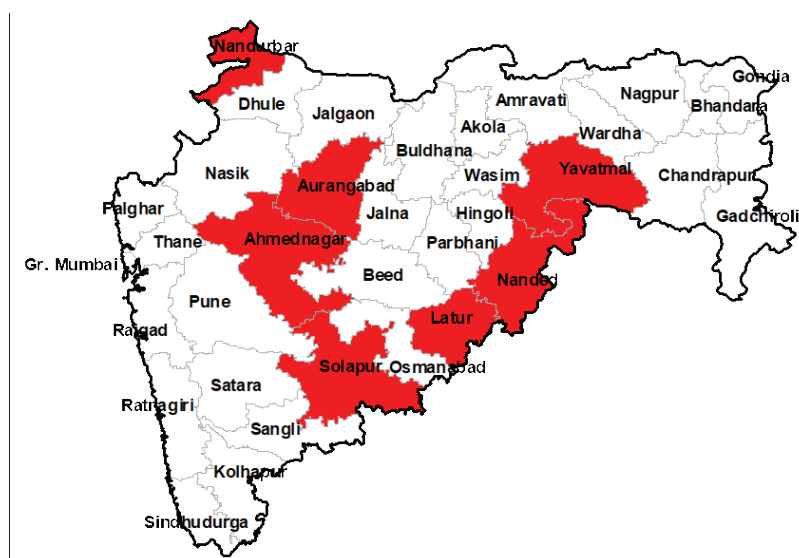
As per Table 9, district AEFI committee was constituted in all the districts. Three out of the four districts assessed had updated their AEFI committee members within last 1

**Table 8: Trend of silent districts for AEFI cases over 3 years**

Year (Jan-Dec)	Total no. of districts	No. of Silent districts	% of silent districts
2015	35	16	46
2016	35	18	51
2017	35	21	60

Source: AEFI Secretariat

**Figure 9: Districts silent for AEFI cases for the last 3 years**



Data as per 31<sup>st</sup> March 2018

year but less than 50% of the total expected district AEFI committee meetings were held in 2017-18. Updated line list of the reported AEFI cases was found to be maintained at all districts.

A total of 17 urban and rural planning units were assessed on critical AEFI surveillance related indicators (Table 10). Guidelines from the national level were sent to all the states including Maharashtra in 2016 for maintenance of block AEFI registers to report and record all types of AEFIs seen by health workers. In June 2017, another directive was sent explaining the mechanism of review of cases reported in these registers. Almost 41% planning units lacked these AEFI recording registers. Moreover,

review of AEFI recording registers was being done by the 37% of concerned medical officer of the planning unit where these AEFI recording registers were available.

While 47% of planning unit nodal officers (MOIC/MO) were trained/sensitized on AEFI surveillance in last three years, 53% of officers were not aware of serious AEFI which are to be reported. Blank case reporting formats (CRFs) were not available at almost 71% of the PUs. Furthermore, AEFI management kits were unavailable at 47% PUs. Planning units which were also AFP/VPD/AEFI surveillance reporting units were assessed for completeness of AEFI reporting. Only half of the PUs had either reported an AEFI case or were giving nil reports.

**Table 9: Status of district AEFI committee**

Indicators	%
AEFI Committee constituted	100
AEFI committee member list updated in the last year	75
Quarterly AEFI Committee meeting held against expected (for all 4 districts)	44
Line listing available at district HQ	100

**Table 10: AEFI surveillance status at planning unit (PU) level**

AEFI Indicators	%
Unavailability of AEFI reporting register	41
Nodal officers not trained on AEFI within last 3 years	53
Nodal officers not aware of serious AEFIs	53
Blank CRF not available	71
Unavailability of AEFI management kit	47



## Vaccine Preventable Disease (Measles) reporting

Although most of the reviewed districts had a weekly mechanism of sharing measles data between District Surveillance Officer (DSO-IDSP) and DRCHO office, a

mismatch in the number of measles cases reported in IDSP and DRCHO office report was found.





# 3.2

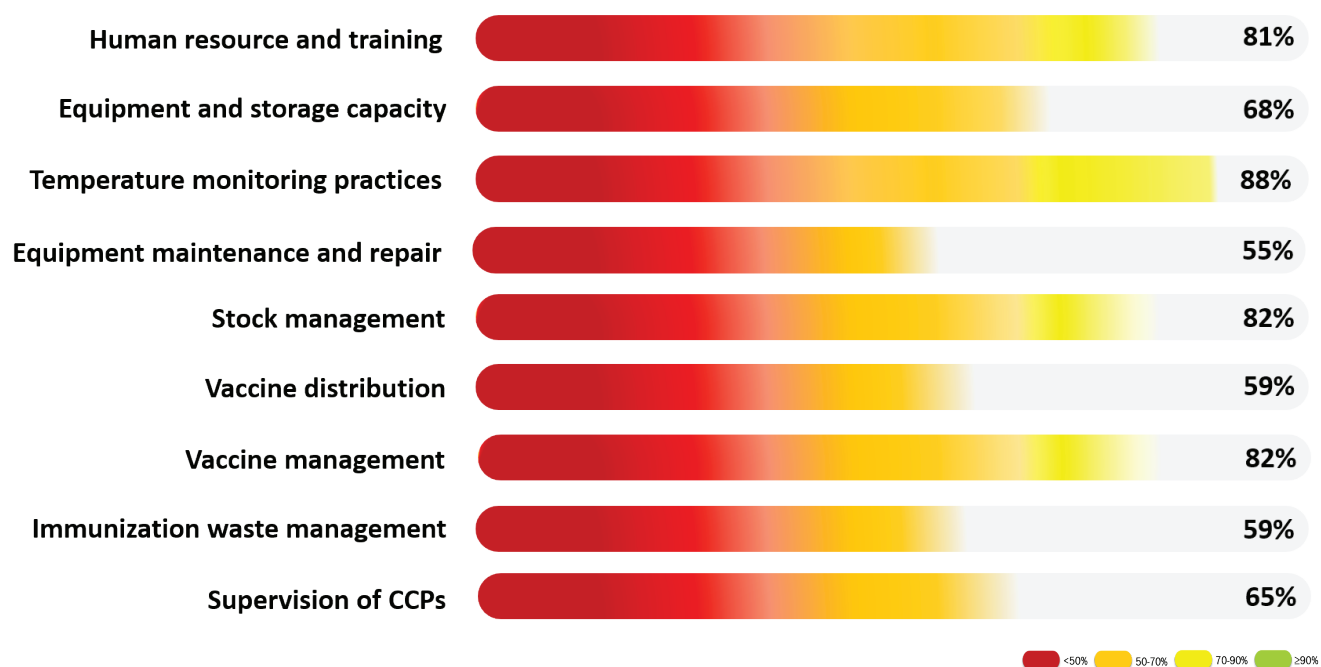
## LOGISTICS AND SUPPLY CHAIN

## Review approach

Logistics and supply chain data was collected at four levels - Primary Vaccine Store (State/Regional Vaccine Store), District Vaccine Store (DVS), Corporation Vaccine Store, Service Delivery Points (last cold chain points) and session sites.

The data is analysed under following thematic areas- human resource and training; equipment status and storage capacity; temperature monitoring practices; maintenance and repair; stock management; vaccine distribution; vaccine management practices; immunization waste management and supervision. The performance of the state is calculated through a cumulative score across all the levels for each thematic area (Fig. 10).

**Figure 10: Snapshot of review findings - Logistics and supply chain**



## Key Observations

A robust cold chain and vaccine logistics management is pertinent in ensuring uninterrupted availability of quality vaccines from manufacturer to the beneficiaries, so that opportunities to vaccinate are not missed because of unavailability of quality vaccines. The role of the supply chain is to ensure effective vaccine storage, handling and stock management; rigorous temperature control in the cold chain; and maintenance of adequate logistics management information systems.

The key findings for logistics and supply chain can be summarized into the following thematic areas:

### Human resource and training

Adequate numbers of trained human resource are crucial for smooth functioning of immunization supply

chain system. The findings at various levels were:

- » At the primary/state vaccine store, cold chain handler (CCH) has been assigned, whereas the Vaccine and Logistics Manager (VLM) position is vacant at SVS. At each of the district vaccine stores (DVS), there is at least one CCH assigned, and cold chain technician (CCT) is in position in 80% of the reviewed districts.
- » All districts had conducted training on VCCH module 2016, however, 33% CCHs at DVS were trained on it. Eighty eight percent of CCHs at all DVSs were trained on eVIN application and implementation as well. Eighty three percent of the DRCHOs were trained on VCCH module 2016. All the CCTs in position have been trained in cold chain equipment maintenance and repair during the last three years.



- » All service delivery points (SDP) observed have at least one CCH assigned, with an alternate CCH assigned at 56% of the SDPs. Amongst these, 46% of CCHs were trained in VCCH module 2016. CCHs at SDPs were yet to be trained on eVIN application, trainings were provided till district level during the review period as the eVIN is not yet fully rolled out in the state.

## Equipment status and storage capacity

### *Equipment status*

For ensuring potency of the vaccines, cold chain equipment (CCE) need to be maintained periodically. Walk-in freezer (WIF), Walk-in cooler (WIC), ice-lined refrigerator (ILR) and deep freezer (DF) were assessed across different levels. Following are the findings pertaining to the equipment status:

- » Twenty one percent of all CCEs at DVS level and half of all CCEs at SDP level were found to be working without separate stabilizers.
- » Cold chain sickness rate in the state was found to be 5 percent during the review.

### *Storage capacity*

There should be a dedicated space to keep cold chain equipment and logistics to ensure smooth supply chain management.

Primary vaccine store had adequate space for proper upkeep of CCE. However, it was found that BCG vaccine was brought to SVS based on need, leading to a mismatch between physical balance and stock register kept at the SVS.

The dry storage space was found to be inadequate at primary store. Nearly 80% DVSs had adequate space for CCE, whereas the dry storage space was found to be adequate at nearly 30% all the DVSs reviewed.

The cold chain space for vaccines storage (dependent upon number and type of ILR at SDP) was adequate at all service delivery points.

## Temperature monitoring practices

Maintaining appropriate temperature is essential to

ensure the efficacy and potency of the vaccines. The process to install eVIN data loggers has been initiated to record temperature and raise alarm on temperature breach. The temperature monitoring practices findings of the review are:

- » At the primary vaccine store, all WIC and WIF were found with functional temperature monitoring device. The temperature log book was available for all CCEs, and temperature was recorded twice daily, including holidays. At the district vaccine store, 86% ILRs and 91% DFs had functional thermometers. However, all CCEs had separate temperature log book. The temperature was being recorded twice daily at 50% of DVS.
- » The functional thermometer was available for 95% of ILRs and 86% of DFs at service delivery points. The temperature log book was not available for 10% of CCE. Temperature was recorded on the same day (including holidays) at 78% of SDPs.

## Equipment maintenance and repair

For ensuring cold chain sickness rate at minimal level, periodic maintenance and repair of equipment should be carried out. It is important to ensure that an arrangement is in place to carry out prompt repairs and preventive maintenance of equipment.

- » At the primary vaccine store, functional power back up was available for CCE. Similarly, nearly 30% of DVS and 40% of all service delivery points had functional power back up for CCE. Nearly one-fifth of SDPs reported instance in the past 1 month when continuous 8 hours of power supply was not available.
- » Of all cold chain technicians in position at DVS, 80% CCTs were having complete tool kit; whereas 50% of CCTs did not have all spare parts for CCE repair.
- » At SDP level, records of defrosting were available for 58% and 57% of ILRs and DFs respectively.
- » State committee has not been constituted for condemnation of CCE, however one-third districts have constituted this committee. Amongst all the districts reviewed, 50% of the DVS had CCE

pending for condemnation since last 3 years.

- » A preventive maintenance plan was available with 83% CCTs.
- » CCTs visited 61% SDPs in the last three months for maintenance and repair.

### Stock management

In order to maintain adequate quantity of vaccines, it is essential to keep complete and accurate records of all stocks and their transactions. Electronic Vaccine Intelligence Network (eVIN) is yet to be functional across the state. Records of vaccines (BCG, OPV, MCV and Pentavalent vaccine), diluents (BCG and MCV) and logistics (AD 0.1ml, AD 0.5ml and reconstitution syringes) were assessed; and following observations were noted:

- » At the primary vaccine store, standardized stock register was maintained for vaccines and diluents but not for logistics. The stock register was updated for OPV, MCV and MCV diluent but not for BCG, BCG diluent and Pentavalent vaccine. There was one incidence of stock out observed for MCV for 15 days in last three months owing to upcoming Measles Rubella campaign.
- » Standardized stock registers were maintained for vaccines and diluents at nearly 70% DVS and for logistics at 50% DVS assessed. Out of all the DVSs where stock registers were maintained, updated registers for vaccines and diluents were present at one-fourth and for logistics at one-third of the DVS. Incidences of stock out were observed for pentavalent vaccine

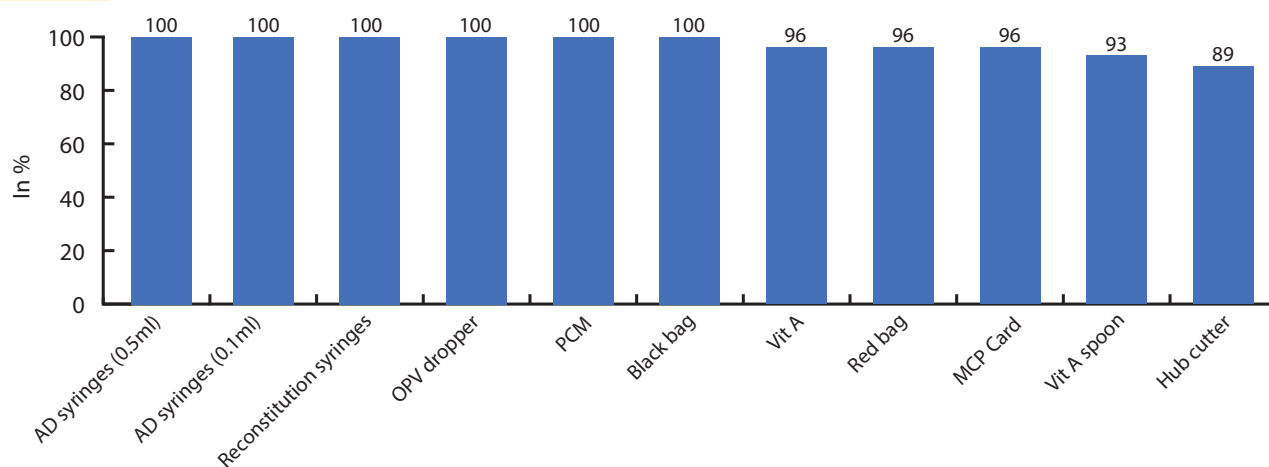
at 17% DVS and for MCV at 50% DVS in the last three months. Incidences of stock out were also observed in the last three months for AD 0.1ml and 5ml reconstitution syringes at one-third of all reviewed DVS. The maximum stock of OPV and MCV exceeded at one-fourth of all reviewed DVS in the last three months.

- » Standardized stock registers were maintained for vaccine and diluents at nearly 70% of SDPs, and for logistics at 60% of SDP assessed. Out of all SDPs where stock registers were maintained, registers were updated for vaccines and diluents at half of the SDPs and for logistics at 45% SDPs. The stock registers were not updated with daily transaction and a monthly cumulative entry was done in the registers. The entries under distribution registers were not done as per the guidelines (eg: 1/2 entered for open vial issued and returned under distribution register).
- » Stock outs for MCV and MCV diluent were observed at 53% SDPs in the last three months. At 27% SDPs, stock outs of 5ml reconstitution syringes were observed in the last three months. Excess stock of BCG and pentavalent vaccines were observed at more than 30% SDPs, and for OPV and MCV at 15% SDPs in the last three months.

#### Stock availability at session sites

- » In the sessions observed, OPV, Pentavalent and DPT were available at all the sessions. BCG vaccine and diluent were available at 93% of sessions, TT at 93% sessions, MCV vaccine and diluent at 89% sessions, and IPV was available at 85% of sessions.

**Figure 11: Logistics availability at session sites**



- » More than one-third of the sessions were not supplied vaccines as per due list.

The availability of logistics at reviewed session sites is depicted in Figure 11.

### Vaccine distribution

Timely deliveries of the required quantities of vaccines are important for ensuring high immunization coverage. The parameters assessed here ensure the effectiveness of the vaccine distribution between each level of the supply chain.

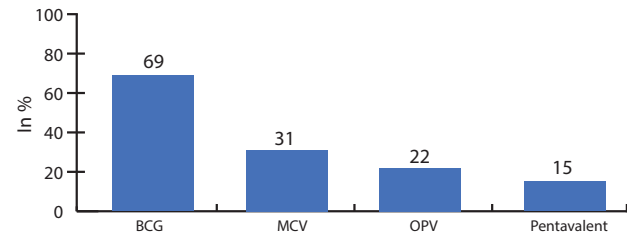
- » The primary vaccine store distributes vaccines as soon as received to DVS, usually following bi-monthly cycle.
- » At 83% of DVSs, the vaccines were distributed to SDPs when demand was raised, and at 17% of the DVS, vaccines were distributed as soon as received from SVS.
- » All the reviewed DVSs had a functional vaccine van.
- » Out of the sessions observed, 19% received vaccines exclusively through AVD system. The other mechanisms found were ANM collecting vaccine from SDP, and supervisor delivering vaccine to session sites.
- » All vaccines and diluents were received inside the vaccine carrier with four ice packs at all session sites.

### Vaccine management practices

This criterion is essentially applied to the service delivery level and session site.

- » At SVS and DVS, non-UIP vaccines were found in the ILR.
- » Job aids were displayed at the SVS, while job aids were displayed at 72% SDPs.
- » Contingency plan was not available at SVS. At 33% DVS and 44% SDPs, contingency plan was available.
- » At nearly 70% DVS, vaccines were not properly stacked in the ILR. At all SDPs, all the vaccines

**Figure 12: Vaccine wastage rate**



were stored in ILR and were stacked properly.

- » Open vials were stored in ILR at all SDPs and none were found beyond 28 days from day of opening.
- » Diluents were present in ILR 24 hours before session at 80% SDPs.
- » At 33% of SDPs, the CCH did not have knowledge about shake test.
- » The average wastage rates for the reviewed vaccines at the service delivery points are given in Figure 12.
- » The wastage rate of BCG and OPV vaccines are much higher than expected.

### Vaccine management at session sites

- » At 75% sessions, opened vaccine vials were issued and no vaccine was found to be used beyond 28 days of opening.
- » At 82% of reviewed session sites, date and time of opening was mentioned on all open vials.
- » At 8% of the sessions, open vials of BCG and MCV were found, which were not discarded after four hours of opening.
- » Vaccines were found with readable labels at all session sites, whereas vaccines with VVM beyond discard point were found in use at 7% sessions.
- » At 36% of the sessions reviewed, vaccines were not appropriately placed on/near the ice packs.
- » Vaccines were placed in zipper bag at 89% sessions, and at only 19% sessions multiple zipper bags were used to return the vaccines to SDP.

- » At all session sites, vaccines were found within the expiry date.

### **Immunization waste management**

The waste management practices at the service delivery points need more attention.

- » Immunization waste was returned to SDP from 67% of the session sites.
- » Less than half of the SDPs had safety pit constructed.
- » Regarding the waste disposal practices, at 17% of SDPs, immunization waste was disposed in the safety pits; at 44% of the SDPs it was outsourced; and at 39% of the SDPs did not follow waste management practices as it was burnt or thrown with other waste.
- » At 44% SDPs, CCH had knowledge about use and disposal of red and black bags for waste

disposal, and at 33% SDP, CCH had knowledge about disposal of immunization sharps wastes.

- » Hub cutter is used to cut both AD and reconstitution syringes at 88% sessions, where hub cutter is present (89% session sites). In these, the cut syringes were found to be segregated in red bag at 92% of session sites.

### **Supervision of CCP**

- » At the primary vaccine store, only one supervisory visit has been made by the state officials in the last three months.
- » At nearly 70% of reviewed district vaccine stores, an average of one supervisory visit were made by DRCHO in last three months.
- » There were no supervisory visits by the MOs at 33% of the SDPs.

# 3.3

## DATA RECORDING AND REPORTING SYSTEM



## Review approach

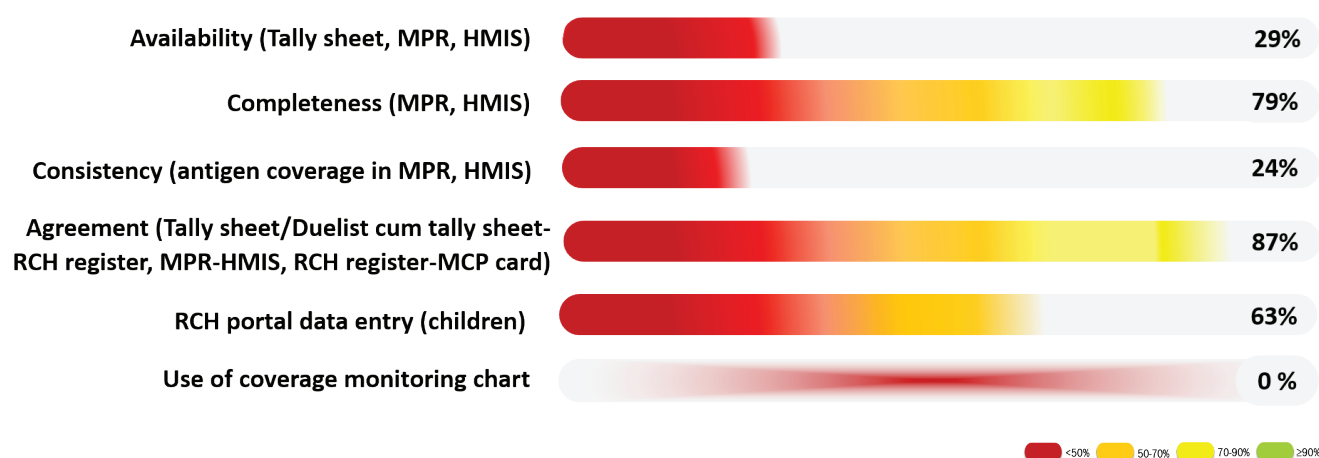
Immunization data is recorded in the RCH registers and tally sheets by the ANMs and consolidated in the form of a monthly report which is submitted to the planning units. Data entry operator uploads the data from the monthly progress report (paper copy) into the HMIS portal. It is of paramount importance that data is of the highest quality, so that it can be used to guide programme actions.

The objective was to assess the data recording and reporting system, data quality and the use of data for

action. The assessment was done in two parts; system of data recording & reporting and Data Quality Assessment (DQA). Structured questionnaires were used to assess the system of reporting, and an excel tool adapted from WHO methodology was used for DQA. Pre-visit to the state was conducted to ensure that the DQA tool was consistent with the data reporting mechanism of the state.

The performance of the state was calculated through a cumulative score across all the levels for each thematic area (Fig. 13).

**Figure 13: Snapshot of review findings – Data recording and reporting system**



## Data Quality Assessment

Six months data from January 2018 to June 2018 was used for DQA in seven rural and four urban planning unit. The assessment followed definitions as illustrated

in Table 11. For the DQA, eight antigen doses (BCG, OPV 1, OPV 2, OPV 3, Pentavalent 1, Pentavalent 2, Pentavalent 3 and MCV 1) were opted for analysis. An overview of the key findings of DQA is illustrated in Table 12.

**Table 11: Description of key Data Quality Assessment (DQA) indicators**

Indicators	Description
<b>Availability</b>	Physical availability of records and reports at the assessment site
<b>Completeness</b>	All the specified immunization related data fields filled up
<b>Consistency</b>	Data follows the logic that is expected from immunization system, for example OPV 1 ≥ OPV 3.
<b>Agreement</b>	Two documents that are supposed to have the same data are actually identical or not, for example recordings in the tally sheet with reporting in MPR

**Table 12: Overview of Data Quality Assessment (DQA) findings**

Indicators	Record / Report	Assessment findings (%)					
		District A	District B	District C	District D	State capital urban area	Overall average
Availability	Tally sheet / Duelist cum tally sheet	33	0	0	0	15	10
	MPR	100	100	42	94	100	86
	HMIS	100	100	100	100	100	100
Completeness	MPR	79	79	30	29	67	62
	HMIS	100	100	100	100	61	94
Consistency	<b>OPV 1 ≥ OPV 3</b>						
	MPR	50	0	100	0	0	25
	HMIS	50	0	50	0	0	22
	<b>*Penta 1 ≥ Penta 3</b>						
	MPR	50	0	100	0	0	25
	HMIS	50	0	50	0	0	22
Agreement	RCH Register - MCP cards	81	69	73	82	88	78
	Tally Sheet / Due list cum tally sheet- RCH Register	89	93	86	95	92	91
	MPR - HMIS	89	96	93	93	94	93

\*Penta – Pentavalent Vaccine

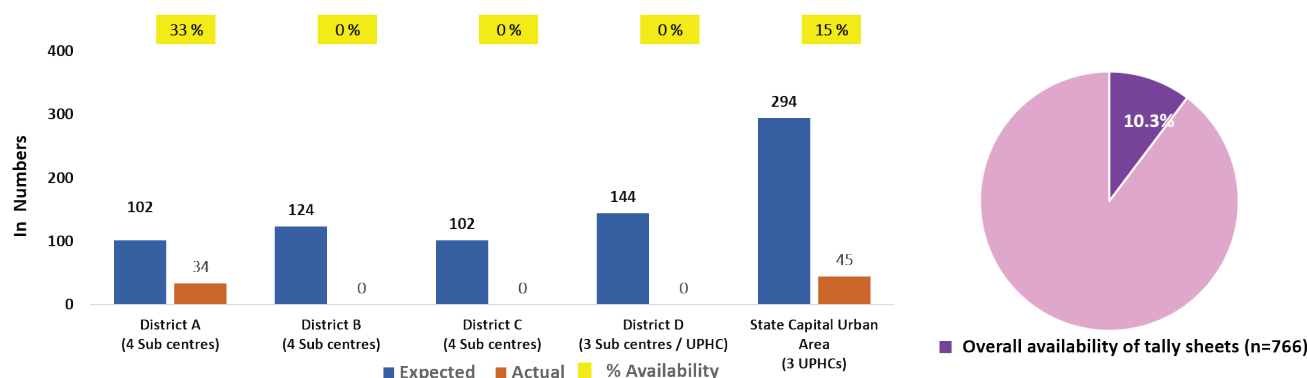
*i) Availability:*

Figures 14, 15 and 16 give an overview of availability of tally sheets, MPR and HMIS data respectively. Physical availability of records and reports were assessed out of the total expected records/reports. The availability was assessed for tally sheets at sub centre/UPHC, for MPR at

planning units and for HMIS report (e-copy) for specified six months.

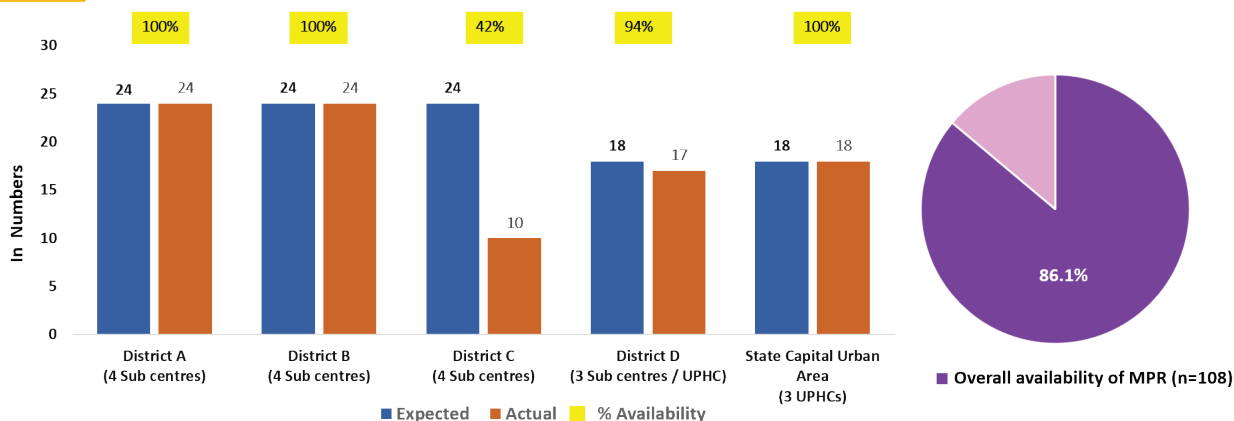
- » **Tally sheets:** Only 10% of the expected tally sheets/duelist cum tally sheets were available at the reviewed districts, ranging from 0% to 33% among the reviewed districts (Figure 14).

**Figure 14: Availability of tally sheets/due list cum tally sheet**



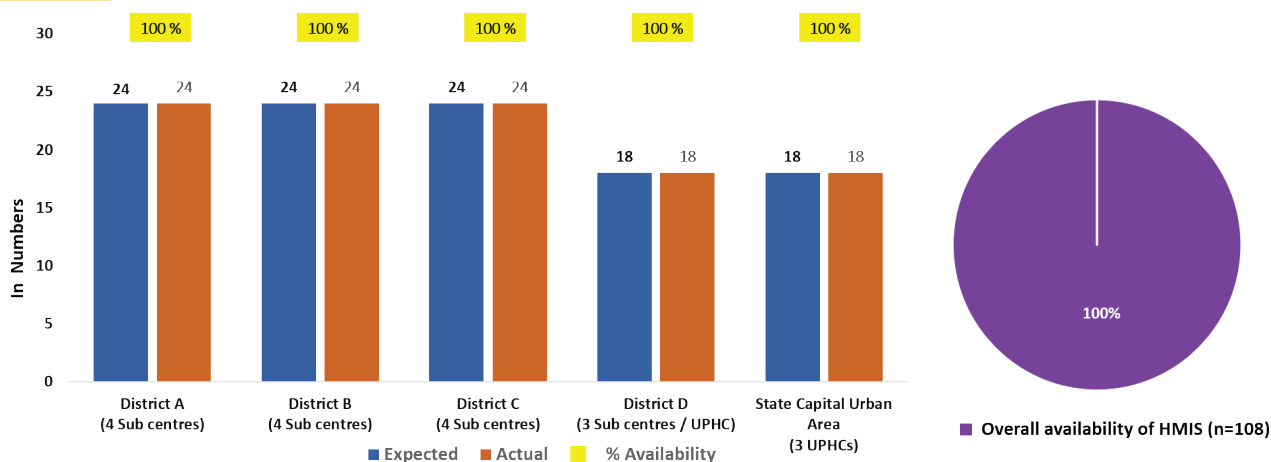
» **Monthly Progress Report (MPR):** Nearly 86% of expected MPRs were found available for the reviewed subcentres/UPHCs (Fig. 15).

**Figure 15: Availability of MPR**



» **HMIS data:** The availability of coverage report of subcentres / UPHCs in HMIS portal was found to be 100%. (Fig. 16).

**Figure 16: Availability of data in HMIS Portal**

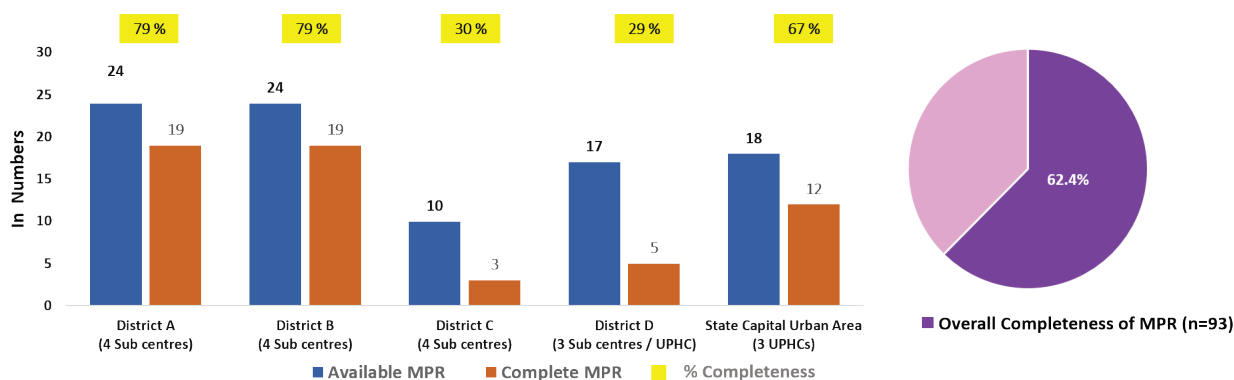


ii) **Completeness:**

Completeness implies that all immunization related data fields were filled up.

» **Monthly Progress Report (MPR):** During the review, it was found that only 62% of MPRs were complete, with a range of 29% to 79% among the reviewed districts. (Fig. 17).

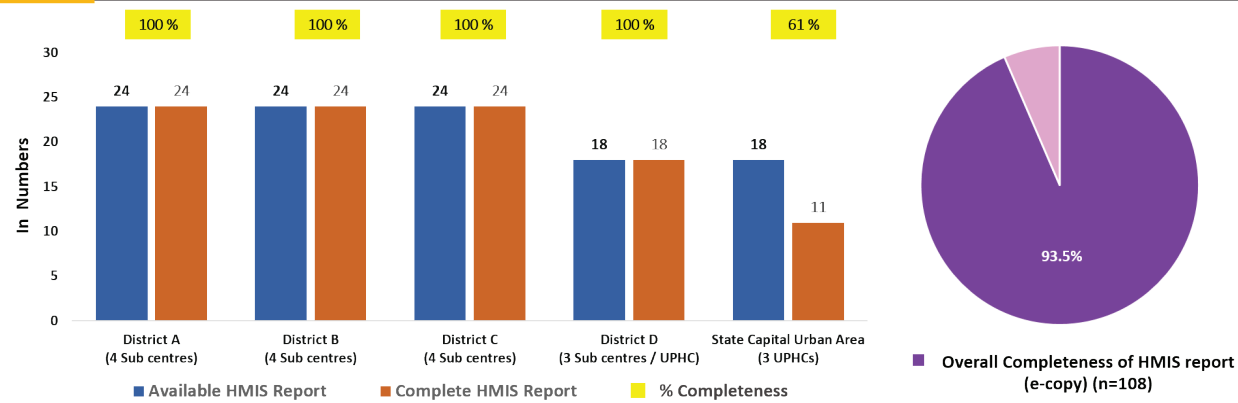
**Figure 17: Completeness of MPR**





» **HMIS:** During the review, it was found that 94% of HMIS portal reports were complete, with a range of 61% to 100% among the reviewed districts. (Fig. 18).

**Figure 18: Completeness of HMIS**

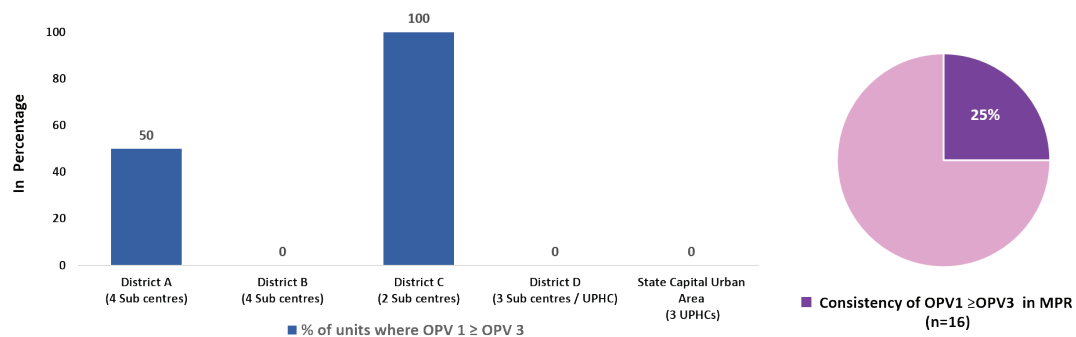


*iii) Consistency:*

Consistency measures if the reported data follows the logic that is expected from an immunization system. For example, coverage of OPV 1 should be either equal or more than the coverage of OPV 3 in a subcentre/UPHC. Consistency was assessed in MPR and HMIS reports between:

- » OPV 1 and OPV 3
- » Pentavalent 1 and Pentavalent 3
- » **Consistency in MPR:** During the review, it was observed that only 25% of the reviewed subcentres/ UPHCs had consistency in MPRs for OPV 1 & OPV 3 with a range from 0% to 100% (Fig. 19). Similar consistency was seen between Pentavalent 1 & Pentavalent 3.

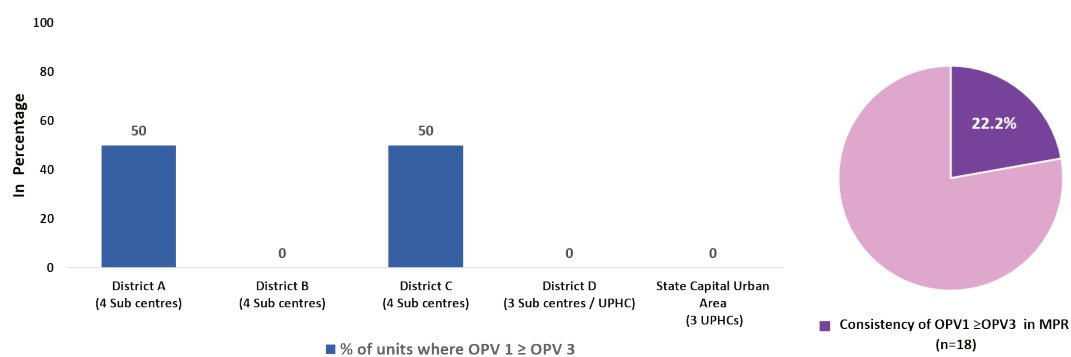
**Figure 19: Consistency between OPV 1 and OPV 3 in MPR**



» **Consistency in HMIS:** In the HMIS reports, it was found that only 22% of the reviewed subcentres/ UPHCs followed a consistent pattern

for OPV 1 and OPV 3 with a range from 0% to 50%. Similar consistency was seen between Pentavalent 1 & Pentavalent 3 (Fig. 20).

**Figure 20: Consistency between OPV 1 and OPV 3 in HMIS**

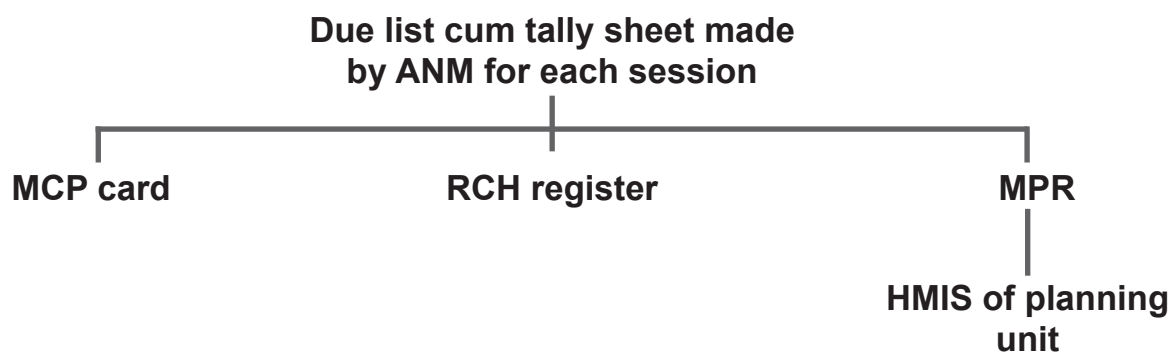


iv) Agreement:

As data flows from peripheral health centre to the next higher level, different records and reports at each level must be in

agreement with each other to ensure data accuracy. The flow of data from the session site has been illustrated in Figure 21.

**Figure 21: Data flow from session site to planning unit**



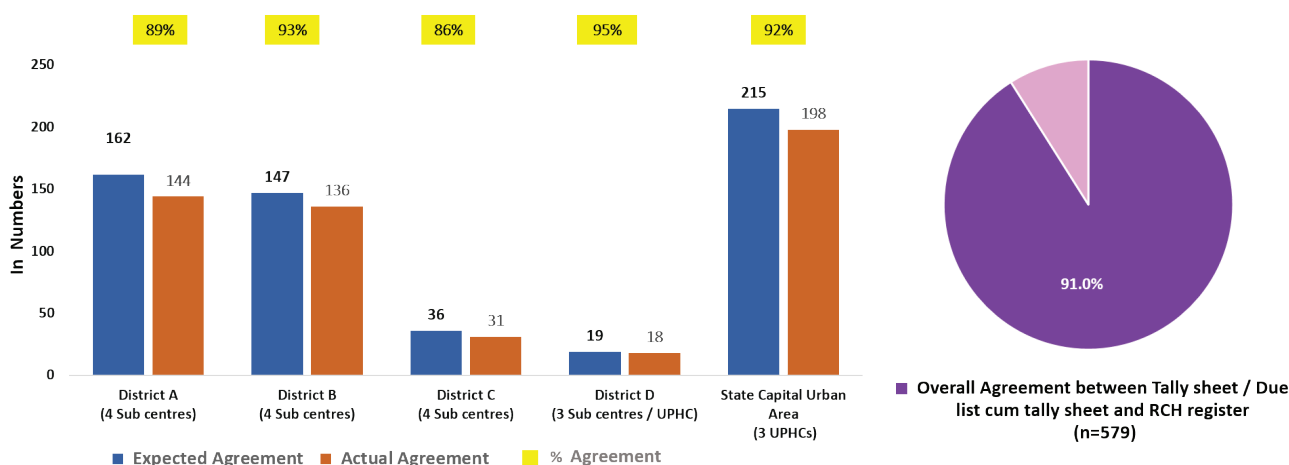
As a part of DQA, the following agreement analysis were performed for eight selected antigens:

1. Between tally sheet/due list cum tally sheet and RCH register
2. Between MPR (paper copies) and HMIS reports (e-copies)
3. Between MPR (paper copies) and HMIS reports (e-copies), antigen wise
4. Between RCH register and MCP card for a selected month

5. Between RCH register and MCP card, antigen wise

» **Agreement between due list cum tally sheet and RCH register:** Agreement between available tally sheet/due list cum tally sheet and RCH register was assessed by matching the name and antigen given to child with the same recorded in RCH register for a selected month and for eight selected antigens. Overall agreement between the two records/reports was 91%, with a range from 86% to 95% (Fig. 22).

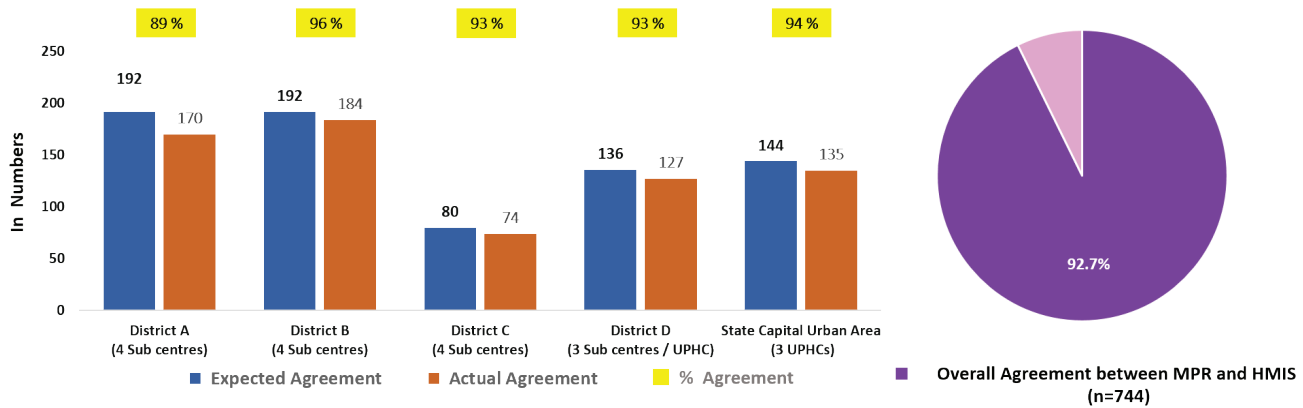
**Figure 22: Agreement between tally sheet/due list cum tally sheet and RCH register**



» **Agreement analysis between MPR and HMIS:** Agreement between the available MPRs and HMIS reports was assessed for the eight selected antigens. Overall 93% of the

entries done in MPRs were matching with the entries done in HMIS portal, with a range from 89% to 96% (Fig. 23).

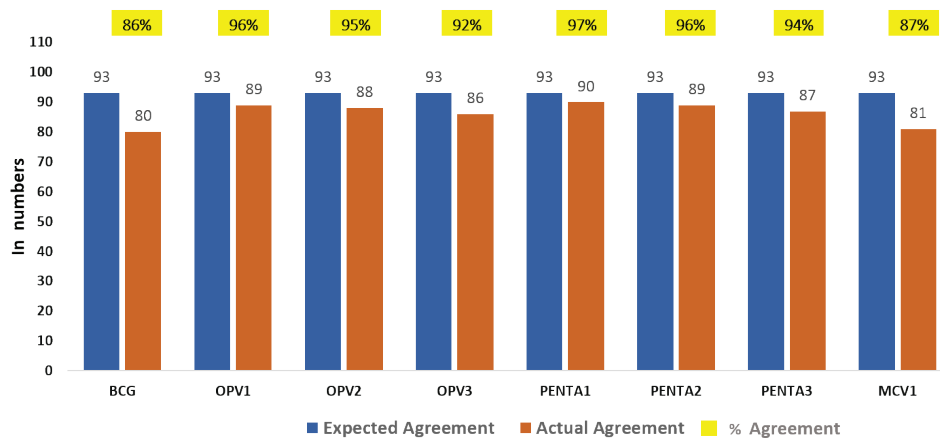
**Figure 23: Agreement between MPR and HMIS**



» **Antigen wise agreement analysis between MPR (paper copies) and HMIS reports (e-copies):** The agreement between available MPR and HMIS reports was assessed for each of the eight selected antigens.

In this analysis, separate agreement for every antigen between both the sources was analyzed. Lowest agreement was observed for BCG (86%) and the highest agreement was observed for Pentavalent 1 (97%) (Fig. 24).

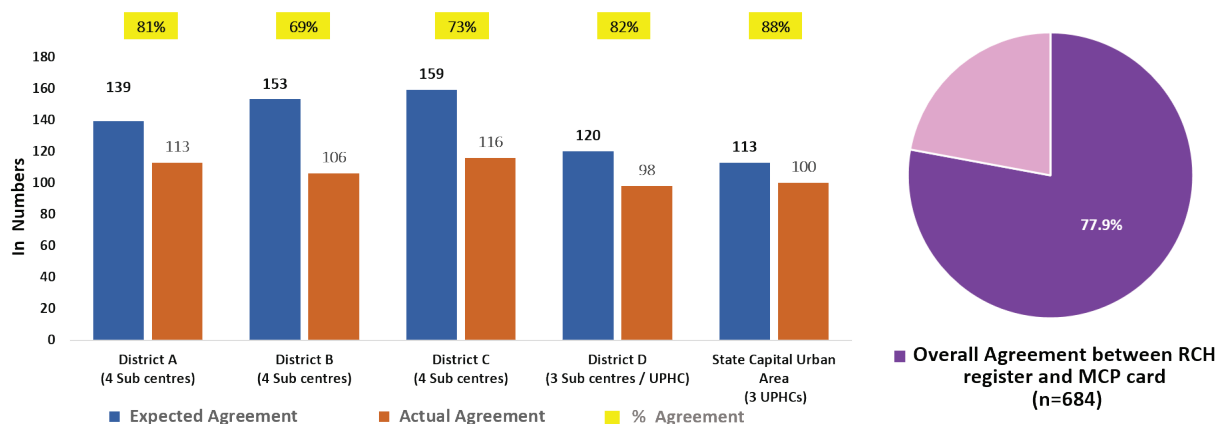
**Figure 24: Antigen wise agreement between MPR and HMIS**



» **Agreement analysis between RCH register and MCP card:** Agreement was assessed for eight selected antigen doses by matching the date of administration recorded in RCH register (available with ANM) for a

month and MCP cards (through community assessment) for selected children. Overall 78% of the entries in RCH register matched with MCP cards, with a range from 69% to 88% (Fig.25).

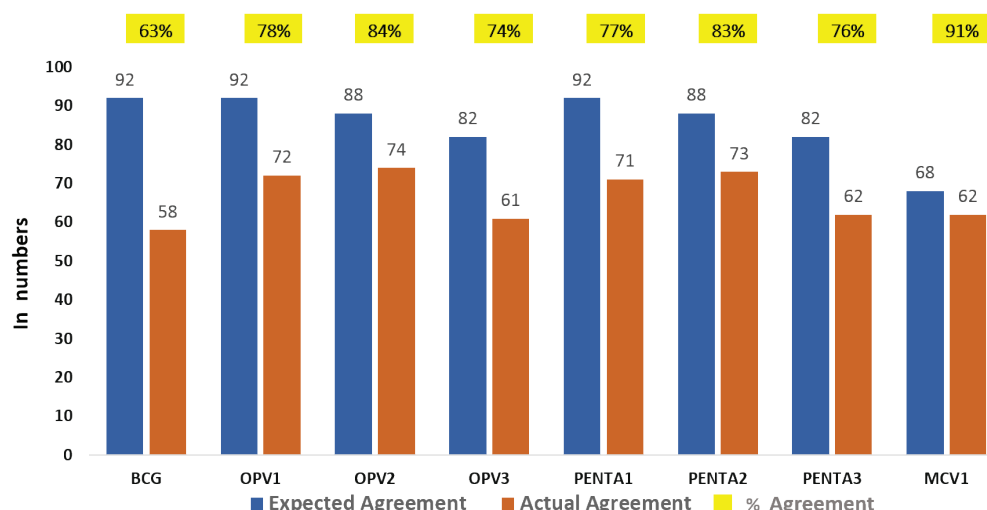
**Figure 25: Agreement between RCH register and MCP card**



» **Antigen wise agreement analysis between RCH register and MCP card:** Agreement between available data of selected children from RCH register was verified from

MCP card in the community for every selected antigen. The lowest agreement was found for BCG (63%), while highest agreement was found for MCV1 (91%) (Fig. 26).

**Figure 26: Antigen wise agreement between RCH register and MCP cards**



### Infrastructure and resource

Only 80% of the reviewed planning units were equipped with working computers, out of which half had electricity back up for running computers.

### Human resources

The SEPIO conducts regular review and analysis of immunization related data at state level, with support from M&E officer (contractual) and a computer assistant (contractual), while the post of a statistical officer and a statistical investigator are vacant. At district level, the DRCHOs are being supported by regular assistant

statistical officer (ASO) or data entry operators. Only 50% PUs have regular statistical assistant/data entry operator available for data analysis.

Nearly 6% and 18% of the ANMs were unaware about full and complete immunization coverage reporting in MPR respectively.

### Campaign coverage

HMIS does not have provision for reporting of campaign coverage data, hence necessitates manual reporting. Reports of Mission *Indradhanush* (MI) were assessed for

availability and completeness at planning unit, district and state levels and agreement was matched with reports submitted to the next higher level.

At the state level, all the district wise coverage reports of last phase of IMI campaign were available. Similarly, in all IMI districts, all block wise coverage reports were available. While coverage report available at state level matched accurately with report sent to national level but reports in two third of the districts mismatched with national reports of IMI.

Out of PUs which conducted IMI activity, in only 75% PUs, all subcentre wise reports were available.

### AEFI and VPD reporting

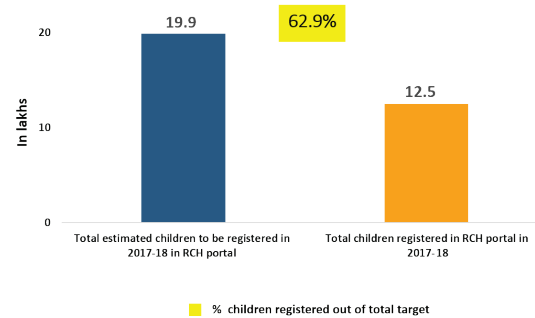
In 20% of the reviewed districts, the weekly reports (VPD-D001) were not available for any week, whereas in 20% districts, reports available for few weeks only. In all available weekly reports (VPD-D001), number of serious and severe AEFI case information was mentioned properly.

In 50% PUs, none of the weekly reports (VPD-H002) were available, whereas in 38% PUs, only few weeks' reports were available. All weekly reports were available in remaining planning units.

### HMIS/RCH portal

HMIS reporting cycle followed in the state is from 1<sup>st</sup> to last day of each month. It was observed that some of the subcentres/UPHCs followed different HMIS reporting cycle. All districts use RCH portal for name-based tracking of beneficiaries. Only 63% of target children were registered on the RCH portal in the reviewed districts (Fig 27).

**Figure 27: Status of name-based registration of children in RCH portal**



### Coverage monitoring chart

None of the reviewed districts were using coverage monitoring chart to visualize immunization coverages.





# 3.4

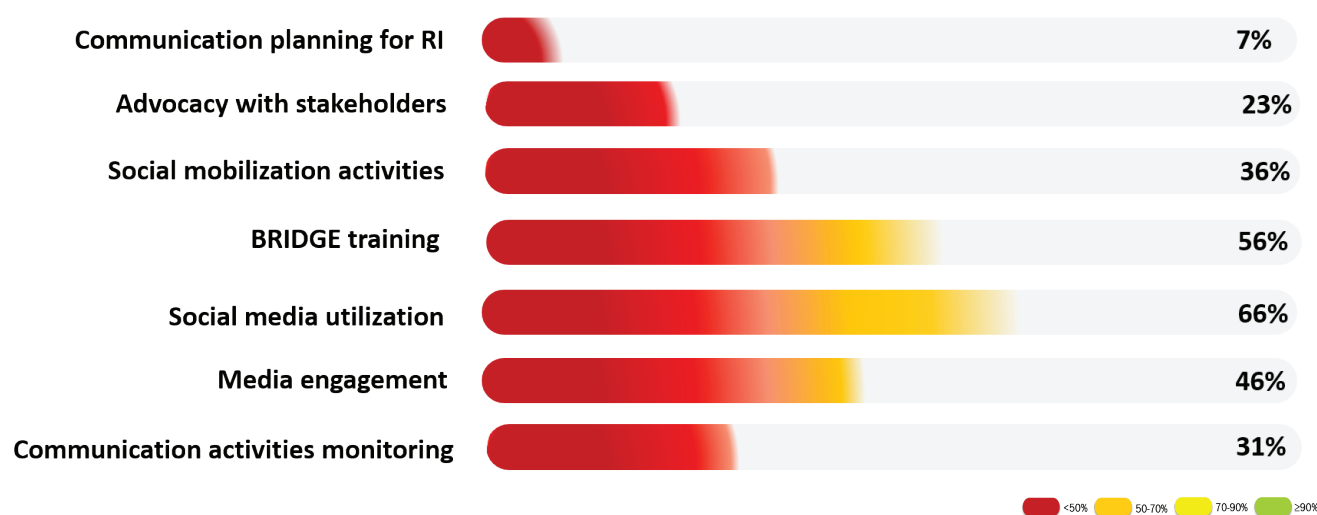
## PROGRAMME COMMUNICATION

## Review approach

The programmatic aspect of communication was assessed at four different levels—state, district, planning unit and session site. The information collected was analysed under different subheads—Communication planning, advocacy, social mobilization, capacity building, monitoring and review and media engagement. In order to assess the knowledge, awareness and attitude of the

community towards immunization, barriers and drivers to immunization; and hesitancy from the community’s perspective, semi structured questionnaires were used to interview 25 mothers, 22 ASHAs, 24 ANMs, 19 AWWs, 9 community leaders and one member each from four *Mahila Arogya Samitis* (MAS). A cumulative score across all the levels was calculated for each subhead as illustrated below in Figure 28.

**Figure 28: Snapshot of review findings - Programme communication**



## Communication manpower and training

The IEC Bureau at Pune is the nodal agency for all communication activities in state. Headed by Deputy Director-IEC, the Bureau plans, implements and monitors IEC activities for all health programmes including immunization. The Bureau develops a range of IEC materials for mass media, mid media and IPC. It has a team of still photographer and writer, who develop content for programmes based on requests from the departments. This small team with limited skills is unable to keep pace with the rapidly evolving requirements of the latest trends and forms of communication. Absence of a graphic designer, skilled content writer, and editor and media experts with latest technical knowhow has reduced the efficiency and output of the Bureau, which was acknowledged as one of best Bureaus at one time. Currently, the Bureau’s outputs are limited to only designing and production of mass media and mid media materials, whereas it can be utilised for a much larger role. Lately the Bureau team has made efforts to digitalise by developing a mobile application where all IEC materials for all programmes would be available online for all field level workers.

Although the Bureau is the nodal agency for communication activities, it does not coordinate with the urban municipal corporations for communication planning or dissemination of materials. The autonomous urban local bodies (municipal corporations) have their own budgets and occasionally also prepare their own IEC materials.

The Bureau has its own sprawling infrastructure of training halls, conference rooms and areas for display of all IEC materials. It publishes a monthly magazine called *Maharashtra Arogya Patrika* which is disseminated to all health workers free of cost. The magazine is also subscribed by general people at a nominal cost. The magazine includes a two pager on immunization.

The Bureau operates a mobile IEC bus called the *Parivartan* express which is stationed in state bureau. It functions to display IEC materials. The large size of the vehicle makes it unsuitable for movement to the rural remote areas and most of the time the vehicle remains stationed in the Bureau campus.

**At the district level**, although there are positions of



District Extension and Media Officers responsible for IEC, these positions are largely vacant. Hence DRCHO or the RI consultant manage the IEC activities.

### Training

State ToT for BRIDGE has been completed, and is in the process of being rolled out at the district level. The district level training has been completed till the block level for two of the reviewed districts. Few FLWs interviewed could recall the training and the role plays done during the training. However, the training is yet to be undertaken in the urban areas.

### Communication Planning

The Bureau develops the mass media plan and outdoor media for RI. The records of materials for immunization put out in the outdoor media (in buses) are tracked through an agency. All materials for RI received from GoI are printed and disseminated by the Bureau. Last year, all materials of the *Paanch Saal Saat Baar* campaign were printed.

At district level, except for one district, RI communication plans were not prepared for any of the districts, including in the urban areas. There appears to be no practice or felt need for developing RI communication plans at any level. Interviews with ANMs/LHVs at the planning unit show that at the planning unit level, only dissemination of IEC materials received from the district headquarters or the Municipal Corporation office is done.

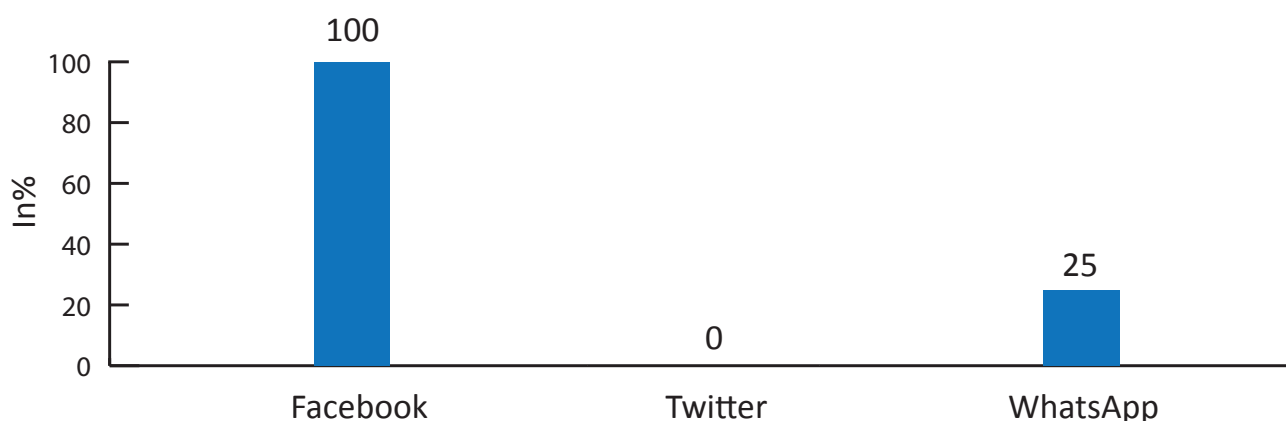
### Advocacy

At the state level, STFI meetings are held prior to MI/IMI rounds, where IEC is discussed as an agenda point. At the district level, advocacy activities are sporadic and event based. While two of the review districts reported conducting meetings with religious leaders prior to MI rounds, there has been no effort to engage with NYK/NSS/NCC; efforts to engage the local NGOs/CBOs and organizations like IMA, IAP, Rotary International is sub optimal. Similarly the review shows weak engagement of elected leaders and other line departments in the immunization activities.

**Table 13: Advocacy with stakeholders**

	District A	District B	District C	District D	State HQ
Religious leaders	Y	N	Y	N	N
Elected leaders ( <i>Panchayat</i> leaders, Ward members)	N	N	N	Y	N
Other Government department	Y	N	N	N	N
IAP/IMA/Private practitioners	Y	N	N	N	Y
NYK/NSS/NCC	N	N	N	N	N
Rotary/Lions/Red Cross	Y	N	N	N	N
NGO/CBOs	N	N	Y	N	N

**Figure 29: Social media utilization for immunization promotion by districts**



**Table 14: Social mobilization activities in districts**

	District A	District B	District C	District D
<b>Rallies</b>	Y	N	N	Y
<b>Elected leaders (Panchayat leaders, Ward members)</b>	N	N	N	Y
<b>Skits/street plays in neighborhood</b>	N	N	N	N
<b>Video shows</b>	N	N	N	N
<b>Kiosks during fairs and festivals</b>	Y	N	N	N
<b>Banners and posters</b>	Y	N	Y	Y

### Media engagement (News media and social media)

At the state and district level, media spokespersons are identified for engaging with news media. At the district level, the DRCHO is the spokesperson. However, no training on media engagement or crisis management has been provided to the spokespersons. At the state level, a media workshop was held on RI in 2017 with the support of UNICEF. For social media, Facebook and WhatsApp are used most frequently for overall information dissemination on health. Each of the four districts reviewed have their respective Facebook pages, where information on health is updated regularly. There are two popular WhatsApp groups—one of the IEC Bureau and one for the DRCHOs of all districts. Twitter is yet to be used by the districts.

### Social mobilization

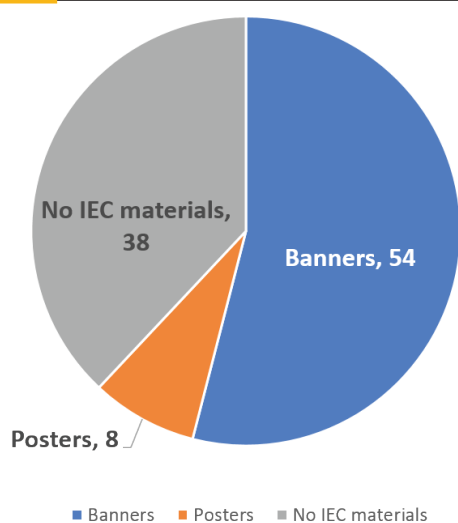
For mobilization, district level rallies were undertaken in two of the four districts reviewed. One of the districts had put up kiosks on immunization during local fairs/festivals. Another district had undertaken drum beating, meetings

with religious leaders and peer educators. In the urban areas, miking is undertaken prior to the MI rounds. Except one district, none of the other districts had made efforts to involve local, elected leaders for mobilization for immunization. None of the districts had utilised folk media or electronic media such as video shows or mobile vans for mobilization. Use of mid media materials is most common. Mothers’ meetings were reportedly held on Immunization days/VHND/UHNDs as informed by the mothers, ANMs and ASHAs interviewed. However, there is no evidence to support this as well as assess the kind of topics discussed, since no records are maintained of the meetings. Participation by mothers is irregular in these meetings.

### Monitoring and review

At the state level, there is no formal monitoring of IEC activities, except for tracking of display of IEC materials. This is done by the IEC Bureau through an agency. At the district level, monitoring of IEC activities is done by the District Health Officer (DHO), RI consultant and DRCHO and his team.

**Figure 30: Types of IEC material displayed at session site**



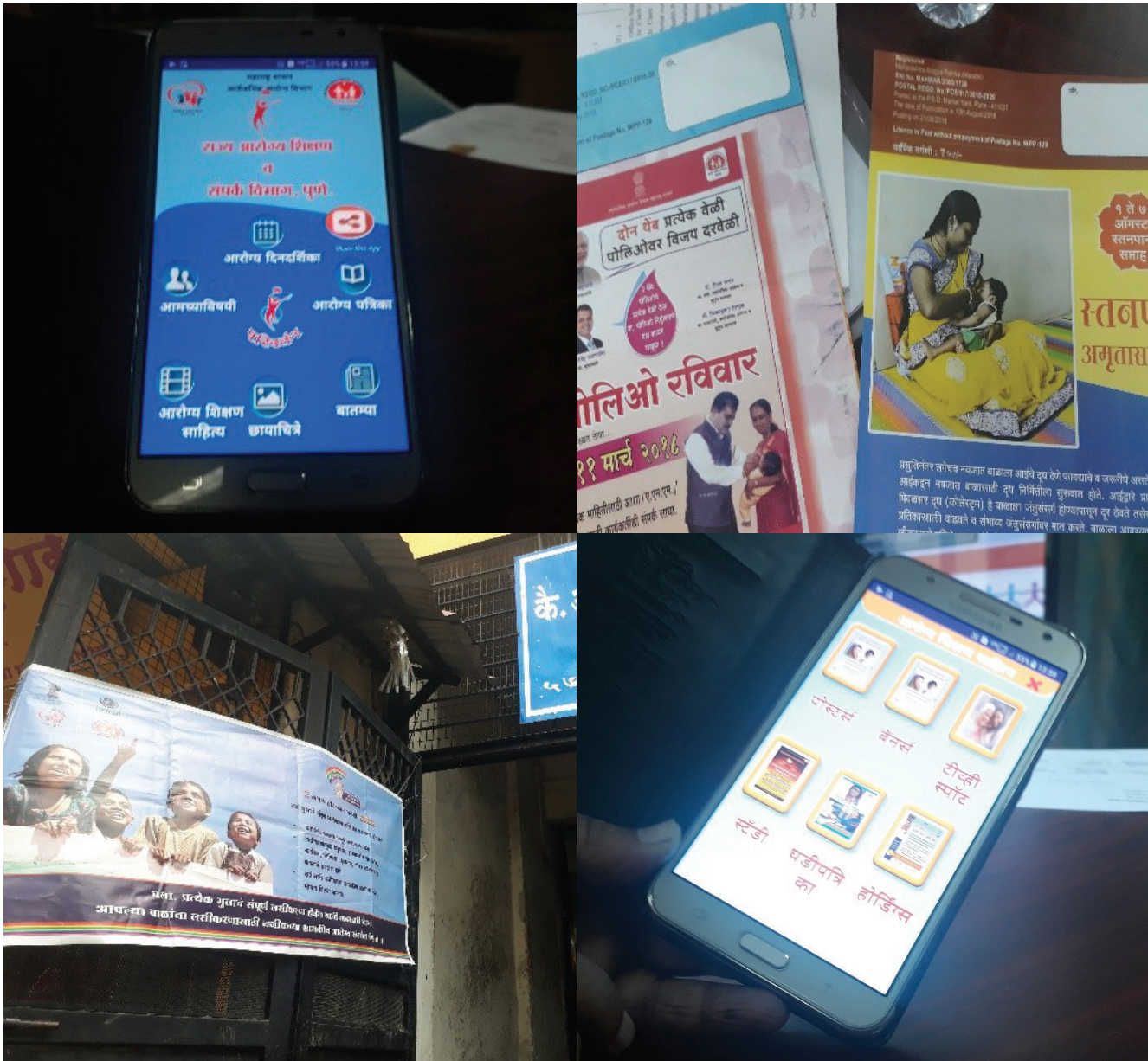
### Session site

Visits to 13 session sites in the districts and urban areas of the state showed that 61% of the sessions had some form of IEC materials displayed. Displays at health facilities were somewhat better compared to the display at the session sites. Most of the display was done in the form of banners of MI, *Paanch saal saat baar* campaign. Very few posters were seen at the session site.

### Community awareness, knowledge, perception and practices

To understand and assess awareness and knowledge levels along with attitude and behaviour of community regarding immunization, in depth interviews were held

Figure 31: Mobile App developed by IEC Bureau, Pune (picture on the right)



with community leaders and caregivers. Key findings from the interviews are outlined in the sections below:

*Community leaders*

Interview with nine community leaders revealed that they were generally aware of immunization activities in their areas. All community leaders interviewed were aware of the location of the immunization session site in their areas. Community leaders had an interest in the activities of the sessions and most had visited the session sites more than once. According to the leaders, the community was interested in getting children immunized. Most had seen posters, RI schedule in the *Gram Panchyat bhawan*

and AWCs. The interest of the community leaders is evident from the fact that eight among those interviewed had attended more than two community meetings in their area.

*Mothers*

In order to get insights into the awareness, knowledge levels, perceptions and behaviour of the mothers regarding immunization, 25 mothers/caregivers from the four selected districts and urban areas in the state capital were interviewed (mothers' interviews were conducted mostly in their homes and few in the session sites). Insights obtained from these interviews are summarized

below:

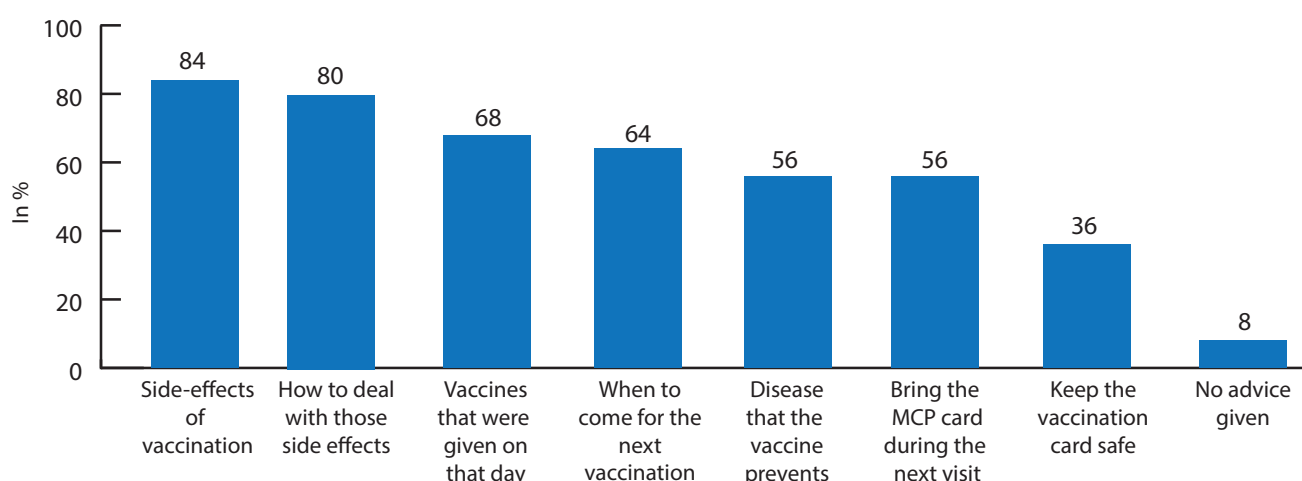
- » Mothers interviewed have a positive perception about immunization; all respondents felt that vaccines provide protection from diseases and are safe for the children.
- » Of the interviewed mothers, 64% were aware of the last vaccine/s given to their children and could mention the name of the vaccine received by their children and the disease/s it prevented.
- » Of the mothers interviewed, only 40% mentioned that they had attended mothers' meeting in last one year, though not too frequently. Respondents mentioned that messages on immunization were often given during these meetings, along with information on breast feeding and nutrition.

- » Most mothers had received the key messages from ANMs during the session; however messages on side effects and their management were the major components of messages given by the ANMs (Fig. 32).
- » Most of the mothers had no apprehension about getting multiple antigens administered to their children in single day; 96% of the mothers interviewed were open to getting more than one vaccine on a single day.

*Frontline workers*

In order to understand and assess the provider's perspectives, their roles, knowledge and skills level, (22 ASHAs, 24 ANMs, 19 AWWs) front line workers were interviewed. Frontline workers are the pillars of the immunization programme. Insights and inputs obtained from these interviews are summarized and presented below:

**Figure 32: Messages regarding vaccination received by mothers**



*ANM*

- » Most ANMs informed that they were supported by ASHA in updating due lists.
- » BRIDGE training was imparted to 56% of the ANMs.
- » Most respondents mentioned receiving very less IEC materials on immunization: posters (24%), banners (34%). Availability of IPC materials was low, with only 7% of the respondents receiving leaflets.
- » None of the ANMs have prepared RI

communication plan for their respective Sub-Centers.

- » All ANMs were confident and comfortable in giving multiple vaccines (through injections) on the same day. However, a few ANMs mentioned that some mothers refused multiple injections/vaccines on the same day, fearing side effects and baby's discomfort.

*ASHA*

- » Most ASHAs interviewed mentioned that they supported the ANMs by preparing the due lists

and submitting the lists to them. At least 86% ASHAs had been part of the head count survey in their respective areas.

- » Main mode of mobilization of beneficiaries by ASHAs was home visits (51%), followed by mother's meetings (26%). Community meetings organization was only 9%.

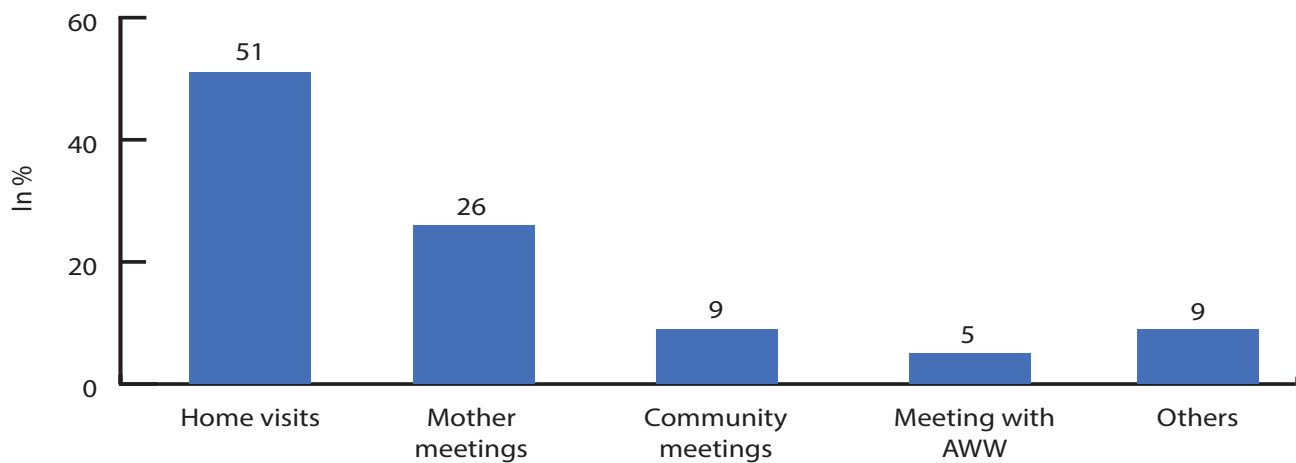
- » Lack of IPC materials for home visits were a limitation for the ASHAs in undertaking IPC activities; 72% of the ASHAs did not have any IPC materials for use during IPC sessions.

- » Of the interviewed ASHAs, 17% of ASHAs faced challenges in mobilizing the children in their respective areas.

**Figure 33: Immunization session in urban slum area**



**Figure 34: Activities undertaken by ASHAs to mobilize beneficiaries**



*AWW*

In depth interviews were conducted with 19 *Anganwadi* workers to assess their role in mobilizing children for immunization, participation in immunization activities and coordination with ANMs and ASHAs.

- » Out of the 19 AWWs interviewed, all mentioned that mothers meeting were held in their centres in the past 6 months.

- » Mothers meeting and home visits were the modes of mobilization for the AWWs in urban and rural areas. In the absence of ASHAs in the urban areas, the AWWs were conducting mobilization activities.

- » While all AWWs interviewed felt that IEC materials were useful for awareness generation, only 37% AWWs interviewed had received IEC materials on immunization.





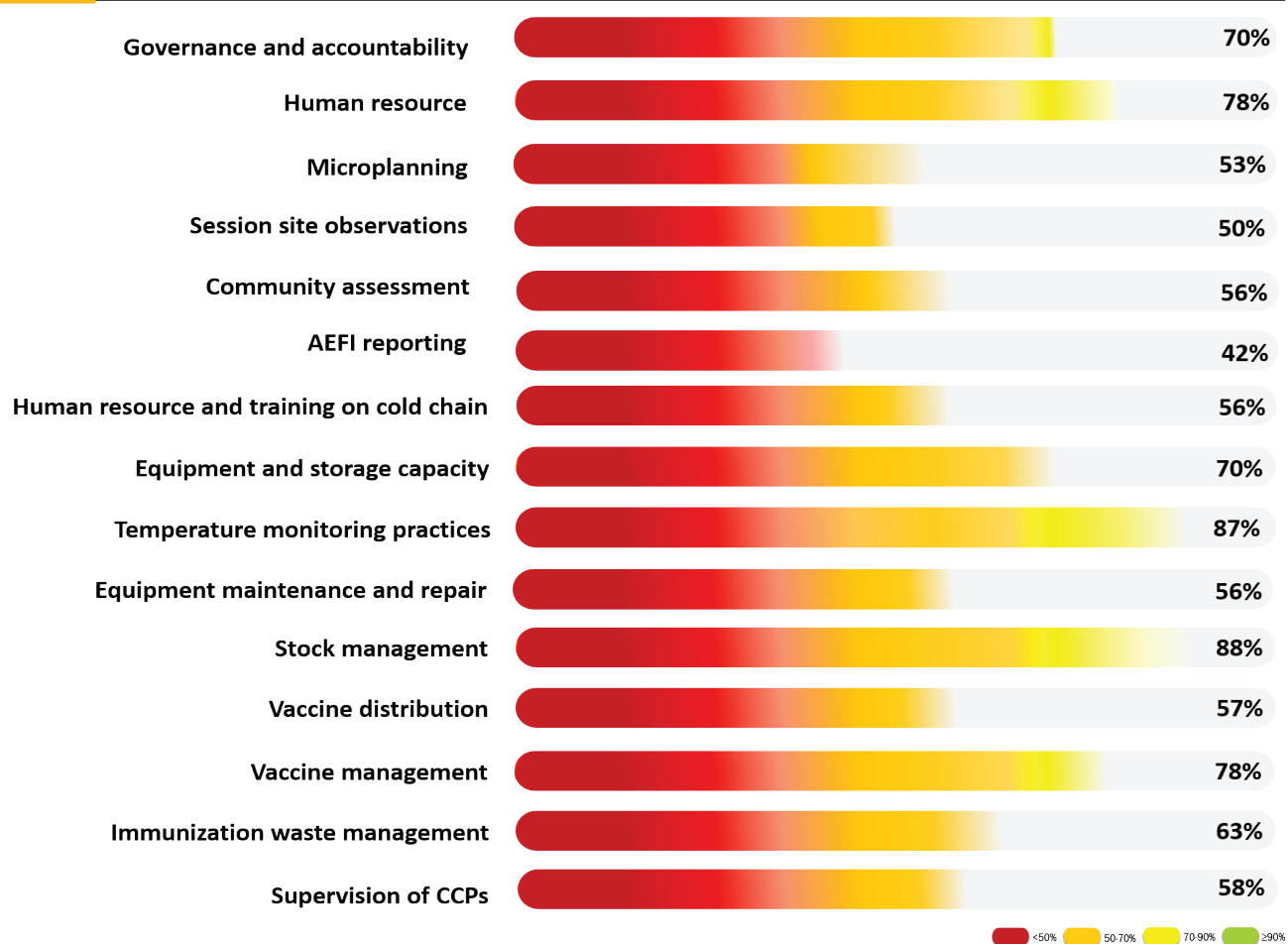
# 3.5

## URBAN IMMUNIZATION

Urban healthcare, including immunization services are delivered by 36 municipal corporations and 360 municipal councils (including *nagar panchayat*) as per Directorate of Municipal Administration, Maharashtra. Maharashtra has 95 cities under National Urban Health Mission (NUHM). Activities under NUHM are coordinated by NHM cell in the state, city programme management unit in larger

cities and district programme management units. Urban immunization was assessed in four districts (municipal corporation/council/*nagar panchayats*) and in Mumbai; sample includes 9 Urban Primary Health Centres (UPHC). Cumulative score across all the levels was calculated for each subhead as illustrated below in Figure 35.

**Figure 35: Snapshot of review findings - Urban areas \***



\*For urban areas, the training status and fund utilization was not assessed, as it is managed directly by districts. For VPD surveillance, the urban planning units were not reporting units. Activities under programme communication and recording and reporting have not been illustrated in snapshot due to insufficient sample size.

## Programme implementation

### Review mechanism for UIP in urban areas

Urban areas of 4 districts and state capital were assessed for constitution and operationalization of City/District Task Force for Urban immunization (CTFI/DTFUI). 40% of these areas had no CTFI/DTFUI in place. For those which had, meetings were held at variable frequencies. One of the municipal corporations had no CTFI meeting conducted in 2017-18.

While all UPHCs assessed in state capital conducted

weekly review of immunization programme with HWs, frequency of such review was variable in remaining districts. Moreover, one of the assessed UPHCs had no mechanism of RI review in place. Further, all UPHCs lacked supportive supervision staff (HS/LHV/PHN/GNM) except for those in state capital and one district. Supervisory visit findings (by MO or supervisory staff) from session sites were not being shared/discussed in nearly one-fifth of UPHCs.

Nearly 80% of the assessed UPHCs were visited by a senior official for review of various health programmes including RI during the last 3 months; visit report/



documentation was available in most of these UPHCs.

Only one of the reviewed urban planning units had a mechanism of ANM, ASHA and *Anganwadi* worker coordination meeting for RI strengthening.

#### *Human resource and capacity building*

The urban health service delivery system including immunization was seen to be carried out by human resource under corporations as well as NUHM. There is a mix of regular and contractual cadres in place in urban areas.

**Table 15: Status of human resource in urban areas**

HR Cadre	% Vacancy - Urban						State (35 districts)
	Urban A	Urban B	Urban C	Urban D	District E	Average (A, B, C, D & E)	
<b>MO-Regular</b>	-	-	-	12	18	16	Not available
<b>ANM-Regular</b>	-	-	-	8	25	20	Not available
<b>MO-Contractual (NUHM)</b>	75	34	0	49	54	41	39
<b>ANM (NUHM)</b>	14	2	0	17	13	12	21
<b>Mobilizer (ASHA/CHV)*</b>	15	9	8	47	19	21	14

Source: Recent available data received from corporations, councils and NUHM Cell of State and reviewed district

\*Community Health Volunteer (CHV) in addition to ASHA in Mumbai; rest of the districts had NUHM ASHA

Urban nodal officer for RI was assigned for most of the districts assessed. Almost all districts had high vacancy of contractual MOs, with vacancy ranging from as high as 75% to nil. State average for contractual medical officers' vacancy also stands at nearly 40%. State vacancy of NUHM ANMs is 21%. During the assessment, it was also found that some urban council areas either had no field staff or shortage of ANMs (Table 15).

Although the state vacancy for urban mobilizers (ASHA/CHV) is 14%, districts under assessment had vacancies as high as 47%. Similarly, as per the state report only 4% *Mahila Aarogya Samiti* (MAS) are yet to be formed, but on an average more than 40% of the *Mahila Aarogya Samiti* (MAS) are yet to be constituted in the districts under assessment.

Three bigger corporations were also assessed for HR vacancy status. Shortage of human resource especially contractual medical officers and mobilizer was evident in all of them (Table 16).

The status of immunization trainings for HWs, CCH and ASHAs also varied from one corporation to another. While one corporation had used corporation and NHM funds for conducting recent immunization trainings for all cadre, one of the assessed corporations had not ever conducted any training for HWs, CCH and ASHAs.

#### *Service delivery*

Immunization service delivery in urban areas needs special emphasis due to the stagnant pace of infrastructural growth to cope with rapid population growth. Following

**Table 16: Human resource vacancy status in reviewed corporations**

HR Cadre	% Vacancy – Municipal corporations			
	Corporation A	Corporation B	Corporation C	Average (A, B and C)
<b>MO-Regular</b>	18	10	15	15
<b>MO-Contractual</b>	54	39	69	48
<b>ANM-Regular</b>	25	4	20	20
<b>ANM-Contractual</b>	13	13	26	15
<b>Mobilizer (ASHA/CHV*)</b>	19	47	34	23

Source: Recent data received from Corporation offices

\*Community Health Volunteer (CHV) in Mumbai

components have been discussed :

- I. Microplanning
- II. Session site observations
- III. Community assessment

## Microplanning

Nine UPHCs were visited to assess availability and quality of RI microplans, however, no RI microplan was available for one urban planning unit. Findings are indicated in Table 17. Half of the urban area RI microplans were available on state prescribed formats. AVD information was available only in 13% of the microplans, whereas inclusion of columns of new vaccines (IPV) was found in half of the microplans.

Microplans of 44 ANMs were assessed for inclusion of critical components. While ANM roster was available for most of the ANM areas, information on enlisting of wards, colonies and RI HRAs (if existing), number of beneficiaries, vaccine logistics formats were available in nearly two-fifth of the ANM plans. AEFI management centre details were available only in 9% of the ANM plans. Nearly two third of the plans were having supervisor's name, while only one third of the sessions were having mobilizer's name in the plans.

More than 90% of the exclusive IMI sessions had been included in RI microplan.

## Session site observations

A total of 19 urban session sites were assessed for various critical processes affecting quality of service delivery as shown in Table 18.

- a) **Adherence to microplan:** All sessions observed were conducted as per the microplan. Nearly 11% session sites had no mobilizer working.
- b) **Headcount survey, due listing and tracking of left outs/drop outs:** Mobilizers at 11% session sites had an updated headcount survey. While due list was available at 84% of the session sites, updated due list was available at 42% session sites.
- c) **Supervisory visits:** Nearly two-fifth of sessions were not visited by any supervisor before visit by review team.
- d) **Payment of ASHA incentives:** Almost all interviewed ASHAs were aware of incentives for full and complete immunization, whereas awareness regarding incentives for mobilization of beneficiaries to session site was 64%. Only one-third of ASHAs had received RI incentives in the last quarter.
- e) **Immunization safety:** Nearly 15% ANMs were not giving injections as per correct site and route of vaccines. Nearly 65% of ANMs did not ask caregivers to wait for 30 minutes after vaccination.
- f) **Knowledge of ANMs:** Nearly 47% of the

**Table 17: Microplan analysis of urban area**

Indicators	%
Availability of microplan (n=9 planning units)	89
Availability on prescribed formats (n=8 planning units)	50
AVD information (n=8)	13
Columns for new vaccine (IPV, n=8)	50
ANM areas with enlisting of wards/mohalla/colonies and HRAs (n=44)	41
ANM areas with number of beneficiaries mentioned (n=44)	39
ANM areas wise map available (n=44)	36
ANM areas with vaccine and logistic formats available (n=44)	39
ANM areas with details of AEFI management centre (n=44)	9
ANM areas with ANM roster (n=44)	96
ANM areas with supervisor assigned (n=44)	68
Sessions with mobilizers name mentioned in microplan (n= 342)	32
Exclusive IMI sessions incorporated RI microplan (n=11)	91

interviewed ANMs had received two days training on immunization. Nearly four-fifth of ANMs were providing all four key message. The knowledge on correct age, dose and route of newer vaccines like fIPV was found to be generally satisfactory. As high as 40% ANMs were unaware of the correct sequence of administering multiple antigens during a single

visit. Only 16% ANMs were aware of reporting VPDs in MPR.

### Community assessment:

Caregivers of 190 children in the age group of 0 to 23 months were interviewed to assess the vaccination status of their children. MCP card retention was high at

**Table 18: Session site findings in urban area**

Indicators	%
Session site as per microplan	100
ASHA/CHV found working as a mobilizer	74
AWW found working as a mobilizer	26
Record of updated head count survey available	11
Due list available	84
Updated due list available	42
Supervisory visit	58
ANM received 2-day training on immunization	47
ANM awareness about recording of VPD cases in MPR	16
ANM awareness about designated AEFI management centre	68

87%. Almost half of the children born at government and private facilities had not been given Hepatitis B birth dose (Table 19).

Sixty nine percent children (0–23months) were found to be vaccinated as per age. Health workers, especially ASHAs/CHVs were the major source of information and mobilization of beneficiaries for session sites.

Names of all beneficiaries were also cross checked for inclusion in headcount survey record to assess the robustness and completeness of survey. Less than half

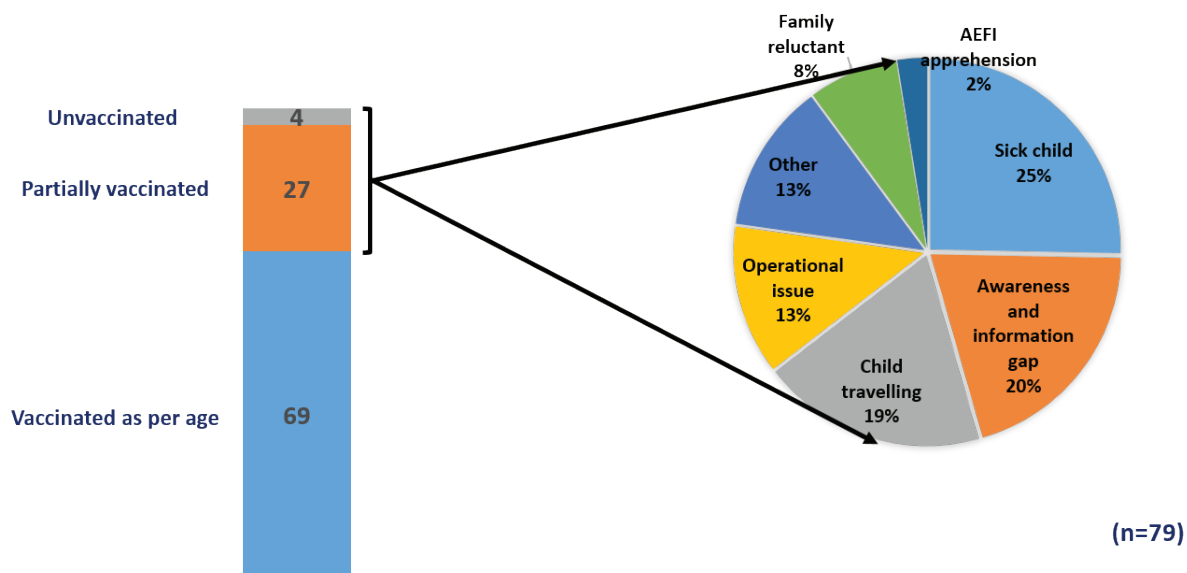
of the beneficiary names were included in headcount survey. For remaining, either the name was not included or there was no headcount survey available with the mobilizer. **Only 28% of the names of partially vaccinated and unvaccinated beneficiaries were found in the due list.**

Figure 36 illustrates the reasons for children being partially vaccinated and unvaccinated as per age. 'Child being sick' was the most common reason, followed by 'awareness and information gap'.

**Table 19: Community assessment findings in urban area**

Indicators	%
MCP card available with household (n=190)	87
Hepatitis B birth dose given to children born in government or private health facilities (n=184)	49
Major source of information on vaccination to caregivers (n=194 responses)	ANM/ASHA/CHV – 92 AWW – 5
Mobilization of beneficiaries to session site (n=209 responses)	ASHA/CHV – 77 AWW – 11
Name of partially vaccinated and unvaccinated children in due list (n=58)	28
Name of children in headcount survey (n=190)	47

**Figure 36: Reasons for partially vaccinated and unvaccinated children in urban area**



### AEFI reporting

Less than half (44%) of the MOs posted in urban planning units had not undergone any formal AEFI training; however, 45% could articulate death and hospitalization as serious AEFIs. Blank case reporting formats (CRFs) were not available at 56% of the PUs. AEFI recording registers were unavailable at 22% of urban planning units. Furthermore, AEFI management kits were unavailable at 33% planning units. At the session sites, 31% ANMs were not aware of designated AEFI management centre.

### Logistics and supply chain

The key findings for logistics and supply chain in the urban area can be summarized into following thematic areas:

#### Human resource and training

Each of the SDPs reviewed had at least one CCH assigned, and 56% SDPs had alternate CCH assigned. Thirty six percent of CCHs were trained on VCCH module 2016.

#### Equipment status and storage capacity

Amongst all CCEs, 52% did not have a separate stabilizer. The cold chain sickness rate in urban area was found to be 4.5 percent during review period. The cold chain space was found to be adequate at all urban SDPs.

#### Temperature monitoring practices

A functional thermometer was available for 90% ILRs

and all DFs. All CCE with functional thermometer had temperature within the recommended range. The temperature log book was available for 90% of CCE, and at 56% of SDPs, the temperature was recorded twice daily.

#### Equipment maintenance and repair

Functional power back up was available at 22% of the SDPs. At 11% SDP, there were instances when continuous 8 hours of power supply was not available in the past one month. Defrosting records were available for 60% ILRs and for 64% DFs at the reviewed urban SDPs. CCT visited 67% of SDP in last three months for maintenance and repair.

#### Stock management

Standardized stock registers for vaccines, diluents and logistics were available at 56% SDPs. Where stock registers were available, they were updated for vaccines at 80% of SDPs and for diluents and logistics at 60% SDPs.

60% SDPs had stock outs of MCV and its diluent while stock out of AD 0.1ml and 5ml reconstitution syringes were observed at 20% SDPs. Maximum stock exceeded beyond 3 months for BCG at 40% and for OPV, Pentavalent and MCV at 20% SDPs.

At the session sites in urban areas, OPV, Pentavalent, DPT, MCV, MCV diluent and TT were available at all sessions. BCG vaccine and diluent and IPV were

available at 92% sessions. At 60% session sites, vaccines were available as per due list. Blank MCP card, AD 0.1ml syringe, AD 0.5ml syringe, 5ml reconstitution syringe, OPV dropper, paracetamol, Vit. A solution and spoon, and black bags were available at all session sites. Red bag and functional hub cutter were available at 92% and 85% session sites respectively.

#### *Vaccine distribution*

All vaccine carriers were available with four ice packs at all session sites. At 15% of session sites, vaccines were received and returned exclusively through AVD mechanism. At 55% sessions, ANM collects vaccines from SDPs. At remaining 30% session sites, the mechanism found was, ASHA or supervisor collecting vaccine from SDP.

#### *Vaccine management practices*

All the vaccines were stored in ILR at all service delivery point. At 11% SDP, blood group antigens were found in ILR along with other UIP vaccines. Open vials were stored in ILR at all urban SDPs, and none was found beyond 28 days from day of opening.

Job aids and contingency plan were available at 67% and 44% SDPs respectively.

The vaccine wastage rate was found to be 69% for BCG, 35% for MCV, 34% for OPV, and 4% for pentavalent vaccine.

Vaccines were found with usable VVM at 85% of session sites. At all session sites, the vaccines were found to be within the expiry date. Vaccines were found to be appropriately placed on/near ice packs at 55% session sites. At no session sites, open vials of BCG and MCV were found to be used beyond 4 hours of opening. Date and time on all open vials were mentioned at 70% session sites.

#### *Immunization Waste management*

Immunization waste was returned from 78% of the session sites to SDP. Waste disposal is mainly outsourced, with 89% SDPs following this practice. At 11% of the SDPs, waste management guidelines were not followed, as the immunization waste was either burnt or thrown with other waste.

At 33% SDPs, CCH had knowledge about shake test, immunization sharp disposal, use and disposal of red and black bags.

Hub cutter was used to cut both AD syringes and reconstitution syringes at 90% of these sites. The cut syringes were segregated in red bags at all session sites.

#### *Supervision*

There were no supervisory visits by medical officer in last one month at 44% SDPs.

### **Data recording and reporting systems**

In all the urban PHCs reviewed, insufficient quantity of tally sheets, due lists, RCH registers and MPRs were found. In 33% of the urban PHCs, ANMs were maintaining hand written due list and tally sheets.

All the urban PUs reviewed were supported by data entry operator from NHM, and were equipped with working computers but none of the urban PUs had electricity back up for running computers. There was sub optimal supervision and feedback mechanism at Urban PHCs.

During the DQA, it was found that only 12% of the expected tally sheets were available at the reviewed urban areas. Completeness of coverage report of UPHCs in MPR & HMIS portal was found to be 58% & 71% respectively.

### **Programme Communication**

In the urban areas of two cities under review, in keeping with the concept of decentralized planning of urban areas in Maharashtra, all health communication related activities are implemented by the municipal corporations. Visits to urban planning units and session sites in urban areas under review reveal lack of communication planning for immunization. DRCHOs and their team take up the responsibility of the IEC activities of communication activities in corporations also. Implementation of the activities depends on the interest and capacities of the DRCHOs. One corporation was found to be proactive in planning and implementing IEC activities.

Formation of *Mahila Arogya Samitis* (MAS) in the urban slum areas of one of the corporations was sub optimal. Members of those formed, were not oriented on immunization or their roles and responsibilities. In one of the corporations, few reputed NGOs have been entrusted the responsibility of formation of MAS and opening of their accounts. In state capital, formation of MAS in urban area was discontinued as a policy after a demonstration project showed it to be ineffective. In the absence of MAS, local-level volunteer groups have been created with



women volunteers. Here too, local NGOs are supporting CHVs in community mobilization for RI.

Home visits and phone calls are used as means of mobilization by the AWWs. Miking (prior to NIDs, MI rounds) is also used to inform and motivate residents living in the high rise buildings in the urban municipal areas. Vaccinators, Community Health Volunteers and Assistant Medical Officers also disseminate key messages to beneficiaries in the urban municipal areas.

Except home visits, no other mobilization and advocacy activities were undertaken in the urban areas. There are several migrant population pockets /high risk areas which have not been mapped for communication planning.

Although, communication materials on immunization like posters, banners and leaflets were received before the MI/IMI round, very few IEC material was found in the AWCs visited during the review. Overall use of IEC materials was sub optimal.



# 4

## ISSUES AND CHALLENGES

This section summarises the key issues identified and discussed in detail in the preceding chapters. While a number of issues were identified, cardinal issues that may affect the achievement of 90% FIC have been mentioned below.

### Governance and accountability

- » Task force meetings at state and districts focus only on campaigns like MI/IMI and Polio NIDs; minutes not available for most of the meetings held at state
- » Immunization review at state with DRCHOs merged with all RCH components
  - \* Limited or no discussion on critical components like human resource, cold chain, fund utilization, communication strategies etc. during task force meetings and state reviews
- » Poor frequency of DTFIs
- » Weak mechanism and documentation of district quarterly RI reviews
- » No uniform mechanism of compilation of supportive supervision findings from the field and use of its data for action.

### Human resource

- » Regular DRCHO position vacant in some districts
- » Most of the districts have high vacancy of regular ANMs and medical officers

### Training

- » Poor planning for training of MOs on immunization handbook (2016) and HWs on immunization module in last two years
- » Many ANMs not aware of the correct sequence of administering multiple antigens during a single visit
- » Knowledge regarding VPD case identification and reporting was found to be poor
- » Knowledge gap among ANMs regarding AEFI recording and reporting and details of AEFI management centre

- » A few CCHs not trained on VCCH module
- » Limited capacity building of CCHs leading to non-updation and poor maintenance of stock registers at more than half of SDPs, and poor waste disposal practices at one-third of SDPs

### Microplanning issues

- » State workshop on RI microplanning not yet held in the state
- » Non-availability of RI microplans at some planning units
- » Enlisting of all areas and documentation of target beneficiaries is incomplete; plans lack information on vaccines & logistics, AEFI management centres, subcentre wise maps, AVD plan and columns on new vaccines
- » Many microplans do not have ANM roster format
- » Less than one-fifth of the RI HRAs covered through independent sessions
- » Weak planning for vacant subcentres for routine immunization

### Session site observations and community assessment

- » Only one-fifth of session sites receive vaccines exclusively through AVD; supervisory staff involved for dropping and picking up of vaccine carriers from session sites
- » Poor availability of updated headcount surveys and updated due lists at session sites
- » Poor quality of due list and headcount surveys
  - \* Only one-third of the names of children checked in community present in the headcount survey
  - \* Nearly, three-fourth of the names of partially vaccinated and unvaccinated beneficiaries missing in the due list with mobilizers
- » ANMs not preparing and sharing next month session's due list with ASHAs/mobilizers at the end of the current session
- » Sub-optimal vaccine management at session



sites observed (inappropriately kept vaccines on/near ice packs, open vials of BCG and MCV were found which were not discarded after four hours of opening)

- » Limited availability of functional hub cutter at session sites
- » 'Child being sick' followed by awareness gap is the major reason for partially vaccinated/ unvaccinated children
- » Poor coverage of Hepatitis B birth dose in institutional deliveries

### AEFI and VPD reporting system

- » Regular state and district AEFI committee meetings not being held
- » Nearly one-fifth of the districts have not reported any AEFI case since 2015
- » State line list of AEFI cases not reflecting all cases reported by districts
- » Some missed AEFI cases i.e. cases whose documents have not been shared with national AEFI secretariat were found at districts assessed
- » Poor availability of AEFI recording registers and AEFI management kits at planning units
- » Nearly two-third of the ANM were unaware about reporting of AEFI cases
- » Weekly measles cases data is not being shared between IDSP and DRCHO office

### Vaccine and logistics

- » BCG vaccine is stored at Serum Institute and brought to SVS based on need leading to a mismatch between physical balance and stock register kept at the SVS
- » Limited availability of dry storage space at DVSSs.
- » Insufficient availability of separate stabilizers and power back-up for cold chain equipment (CCE) at SDP.
- » Non-availability of spare parts with half of CCTs delays repair of CCE.
- » Inadequate visits by CCTs for maintenance and

repair.

- » Lack of regular condemnation of CCE (50% of the DVS had CCE pending for condemnation since last 3 years).
- » Contingency plan unavailable at more than half of service delivery points.

### Data quality

- » Wide variation in data availability, completeness, agreement and consistency was found in DQA.
- » Inadequate availability of filled tally sheets / due list cum tally sheet
- » Inconsistency in MPR and HMIS
- » Backlog of data entry in RCH Portal.
- » Coverage monitoring charts not used for programme review in the districts
- » Poor availability of VPD- H002 in the PUs

### Programme communication

- » Lack of communication planning at state, district and sub district levels
- » Absence of dedicated teams for communication at the state and district level
  - \* IEC Bureau lacking in HR strength and skills for need based communication planning
- » Weak planning and implementation of social mobilization and advocacy activities
- » Weak display and use of IEC materials at the session sites
- » Overall media engagement and orientation including use of popular social media platform is sub optimal

### Urban immunization

- » CTFI/DTFUI not constituted for all urban cities; meetings held with variable frequency; no meetings held in one of the corporations assessed.
- » Variable mechanism of reviewing immunization activities at urban planning unit level.

- » High vacancy of contractual MOs and ASHAs in almost all urban areas including corporations
- » Some urban council areas either had no field staff or shortage of ANMs over a large population
- » Variable status of immunization trainings within corporations; no immunization trainings ever held in one corporation. ASHAs had never been trained in this corporation
- » Microplans were not on prescribed format. Incomplete enlisting of urban areas, weak vaccine & logistics plan, missing AEFI management centre detail and poor availability of supervisors' plan in microplan
- » Sub-optimal vaccine management at session sites observed (inappropriately kept vaccines on/near ice packs at some sessions, data and time not mentioned on all open vials at a few sessions)
- » VVM found in non usable condition at a few session sites
- » Limited availability of functional hub cutter and red bag at session sites.
- » Extremely less percentage of session sites receive vaccines exclusively through AVD system.
- » Lack of power back-up for cold chain equipment (CCE) at SDP.
- » Inadequate visits by CCTs for maintenance and repair.
- » Contingency plan unavailable at more than half of service delivery points.
- » Inadequate availability of AEFI recording registers and AEFI management kit at urban planning units and average knowledge among ANMs regarding AEFI management centre details.
- » Lack of communication planning in urban areas and especially for high risk areas/pockets
- » Lack of focus on communication due to absence of dedicated staff for communication in municipal corporations
- » Formation of MAS is slow; discrepancy in 'MAS constitution' data between districts and state
- » Inadequate use of IEC materials in the urban health facilities and session sites
- » Use of social mobilization and advocacy activities is poor in the urban areas
- » Insufficient quantity of tally sheets, due lists, SDR registers and MPRs

### Coordination

- » Most of the planning units have no fixed day mechanism for AAA convergence
- » Weak participation of ICDS at planning unit level for immunization review



5

WAY FORWARD

This report is being submitted to the Government of Maharashtra for discussion with reference to the “Roadmap for achieving 90% full immunization coverage in India by December 2018 and sustaining thereafter” to formulate the state coverage improvement plan, along with timelines and roles and responsibilities of all stakeholders, including partner agencies.

Further, district reviews will need to be conducted by the state in all districts with <90% FIC to prepare district wise coverage improvement plans.

The Government of India will support the state government to devise a district self-assessment checklist and orient key state level officials for conducting the district reviews.





Data analysed and report compiled by ITSU

