Ministry of Health & Family Welfare
Government of India

सत्यमेव जयते

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

A report on

Capacity Building Needs Assessment

of various stakeholders involved in the implementation of Universal Immunization Programme

RISE Project

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RAPID IMMUNIZATION SKILL ENHANCEMENT (RISE)

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MESSAGE

Immunization is a critical component of the Government of India's Child Survival Strategy, and accordingly the Universal Immunization Programme (UIP) in the country has undergone tremendous reforms in the past few years to address coverage, equity and quality. However, with the rapid strides with which the immunization portfolio is expanding, it is increasingly being recognized by the policy makers that upgrading the knowledge and skills of health personnel down to frontline health workers must keep pace with the new developments. The Government of India (GoI) continues to encourage and support all endevours to strengthen and improve the capacity of health workers to help them improve the quality of their work.

There is also a growing evidence that traditional workshop or classroom-based training programmes may not be the most effective and fast enough method for upgradation of knowledge and skills of staff. Moreover, application of Information, Communication Technology (ICT) based methodologies, have led to several innovations in training across the globe. Hence, a blended-learning approach needs to be identified, developed and implemented as a more effective alternative. We need to leverage the tremendous developments of technology and its use in teaching and learning along with deep penetration of mobile and internet. GoI is looking to streamline and strengthen the current capacity building initiatives with a comprehensive package to cater to the training needs of different categories of health workers and program managers. The **Rapid Immunization Skill Enhancement (RISE)** is aimed at developing such a package for different levels of health workers, implement it in five pilot districts across five states and evaluate it for further upscaling.

As a first step towards building the RISE package, John Snow India (JSI) conducted a capacity building needs assessment to identify capacity building needs of various stakeholders involved in the UIP implementation at various levels and to find a feasible methodology to make it more effective. I believe this report will be instrumental in providing the guidance and necessary reference to build a right training package and methodology to improve immunization capacity in the country. I congratulate the Immunization Division of the Ministry of Health and Family Welfare, JSI and other partner agencies who have contributed in bringing out this important document.

(Vandana Gurnani)

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Foreword

The Universal Immunization Programme (UIP) is a nation's strategic investment and has grown from strength to strength over the years and has also responded to the public health challenges across the country. While initiatives like Mission Indradhanush have resulted in immediate gains, it is imperative that the routine immunization planning and delivery mechanism are also strengthened. Improving equity and quality of service is a goal that is achievable by using techniques to strengthen systems and build capacity of health staff. The current immunization training is based on Health Workers module and is being imparted over a period of two days. However, it may not be sufficient as Health Workers may require updation of their knowledge and skills besides refresher courses to retain knowledge gained during the trainings on Health Workers module.

As global health challenges evolve and new technologies emerge, public health solutions need to be creative, data-led, and most importantly, people-focused. With the emergence of Information, Communication Technology (ICT) based devices, such as smart phones, computers and internet, which has positive impact on quality training need to be in place as a supplement to standard training package. Rapid Immunization Skill Enhancement (RISE) will be one of the key instruments to build sustainable capacity of various cadres of stakeholders through optimum leveraging of these technologies.

This capacity building needs assessment is the first but most crucial component contributing to the development of a robust and sustainable training package under RISE. I believe that with introduction of RISE package, the knowledge and skill of the health workers will improve substantially.

24/10/18
(Dr. Pradeep Haldar)

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PREFACE

A capable and motivated workforce is a key need for improving coverage and quality of immunization in the country. However, it has been observed that frontline workers involved in vaccination often lack competency to address various demand and supply side factors, resulting in inadequate coverage and quality. As a result they are unable to instill confidence among the beneficiaries to accept immunization.

With the rapid changes in the UIP scenarios in India and with inclusion of new vaccines, capacity building challenges have increased manifold and are difficult to get addressed by the traditional cascade classroom-based training. A strong need was felt to supplement the ongoing training with an alternative delivery method.

Ministry of Health and Family Welfare (MoHFW) through technical support from John Snow India (JSI) undertook an assessment to document the existing capacity building needs of various stakeholders involved in implementation of UIP. Based on these findings, MoHFW is in process of developing a **Rapid Immunization Skill Enhancement (RISE)** package that will not only apprise them with the latest developments in UIP, but will ensure standardization of information, regular content updation and quicker dissemination of guidelines. It will help to continuously upgrade knowledge and skills, and facilitate self-learning and peer to peer support.

(Dr. M.K. Aggarwal)

Acknowledgment

The study team would like to express sincere thanks to the officials at the Ministry of Health & Family Welfare, Govt. of India for their constant support and guidance, with special thanks to Ms. Vandana Gurnani (Joint Secretary - RCH), Dr. Pradeep Haldar (Deputy Commissioner, Immunization) and Dr. M. K. Agarwal (Deputy Commissioner, UIP) for their continuous contribution in stimulating suggestions and mentorship in conducting the assessment.

We extend our gratitude to GAVI, the Vaccine Alliance for awarding financial grant to JSI to conduct the assessment under Rapid Immunization Skill Enhancement (RISE) project. This report will be instrumental in designing the overall RISE package for different cadres of the stakeholders.

We would also like to acknowledge the role Director (Public Health), Mission Directors (NHM), State, District and Block Immunization Officials, who devoted their time and shared perspectives about immunization trainings and other services provided under UIP. We would also like to acknowledge the incredible contribution of health workers in expressing honest views and sharing their feedback on immunization trainings. Their support is deeply appreciated and has a significant contribution in the report.

We are also grateful to WHO, UNICEF, UNDP, NCCVMRC and ITSU for their valuable time and provision of expertise and technical guidance.

We acknowledge the stupendous effort by Thinkthrough Consultancy, in designing the data collection tools, conducting the field-level assessment, in doing the analysis of the data collected and in drafting the report.

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List of Acronyms

AEFI	Adverse Event Following Immunization
AFP	Acute Flaccid Paralysis
ANM	Auxiliary Nurse Midwife
ANMOL	Auxiliary Nurse Midwife Online
ASHA	Accredited Social Health Activist
AVD	Alternate Vaccine Delivery
AWW	Anganwadi Workers
BCG	Bacillus Calmette Guerin
BMO	Block Medical Officer
BRIDGE	Boosting Routine Immunization and Demand Generation
CC	Cold Chain
CCH	Cold Chain Handlers
CCO	Cold Chain Officer
CCP	Cold Chain Point
CCT	Cold Chain Technology
DC	District Collector
DF	Deep Freezer
DIO/ DHIO	District Immunization Officer
DMRCH	Deputy Manager Maternal and Child Health
DPHO	District Public Health Office
DPM	District Program Manager
DPT	Diphtheria, Pertussis, and Tetanus
eVIN	Electronic Vaccine Intelligence Network
FAQ	Frequently Asked Questions
FGD	Focus Group Discussion
FLW	Front Line Workers
GAVI	Global Alliance for Vaccine and Immunization
GoI	Government of India
HP	Himachal Pradesh
ICDS	Integrated Child Development Services
ICT	Information and Communication Technology
IDI	In-depth Interview

IEC	Information, Education, and Communication
IECO	Information, Education, and Communication Officer
ILR	Ice-lined Refrigerator
IMR	Infant Mortality Rate
INCHIS	Integrated Child Health and Immunization Survey
IPC	Interpersonal Communication
IPV	Inactivated Polio Vaccine
ITSU	Immunization Technical Support Unit
IU	International Unit
IVAC	International Vaccine Access Center
JSI	John Snow Inc.
LHV	Lady Health Visitor
MCH	Maternal and Child Health
MCTS	Mother and Child Tracking System
MHW	Male Health Worker
MI	Mission Indradhanush
MO	Medical Officer
MoHFW	Ministry of Health and Family Welfare
MP	Madhya Pradesh
MR	Measles Rubella
NCCMIS	National Cold Chain Management Information System
NCCTC	National Cold Chain Training Center
NCCVMRC	National Cold Chain & Vaccine Management Resource Center
NGO	Non-Governmental Organizations
NHM	National Health Mission
NIHFW	National Institute of Health and Family Welfare
NTAGI	National Technical Advisory Group on Immunization
OPV	Oral Poliovirus Vaccine
PCV	Pneumococcal Conjugate Vaccine
PHC	Primary Health Center
RCH	Reproductive Child Health
RI	Routine Immunization
RISE	Rapid Immunization Skill Enhancement
ROTA	Rotavirus
RVV	Rotavirus Vaccine

SIHFW	State Institute of Health and Family Welfare
SIO	State Immunization Officer
SOP	Standard Operating Procedure
SPM	State Program Manager
TN	Tamil Nadu
TNA	Training Need Assessment
ToT	Training of Trainers
TT	Tetanus Toxoid
TTC	Think Through Consulting
UHN	Urban Health Nurses
UIP	Universal Immunization Programme
UNDP	United Nations Development Program
UNICEF	United Nations Child Fund
UT	Union Territory
VHN	Village Health Nurses
VHND	Village Health and Nutrition Day
VPD	Vaccine Preventable Diseases
WHO	World Health Organization
WIC	Walk in Coolers
WIF	Walk in Freezers

Executive Summary

Executive Summary

Background

Worldwide, 12.9 million infants, that constitutes one infant in every ten, did not receive any vaccination in 2016[1]. In India, vaccine coverage has come a long way since the inception of the Universal Immunization Programme (UIP) in 1985, but there is progress yet to be made, as well as several challenges in the implementation of the programme need to be addressed. In 2014, the programme was intensified with the introduction of Mission Indradhanush, which aims to achieve more than 90% full immunization coverage in the country. Some of the key areas of focus involve capacity building and robust monitoring of data, to plug gaps in implementation.

Picture 0-1: Immunization session related paraphernalia

The governments' efforts towards training are supplemented by the efforts of partner organizations. John Snow Inc. (JSI) has been awarded the 'Rapid Immunization Skill Enhancement (RISE)' project under the GAVI Health System Strengthening Phase 2 Grant for India. The objective of this programme is to 'develop a constructive, interactive, continuous, and adaptable knowledge and skills building package for health workers, cold chain handlers, program managers and mobilizers working in the UIP'[2], supplementing the existing training programs.

Taking cognizance of capacity building challenges at all levels, JSI undertook the study **"Capacity building needs assessment of various stakeholders involved in the implementation of UIP".** The study was undertaken to identify capacity needs of various stakeholders involved in the UIP implementation at various levels - National, State, District, Block and Field. The study further captured the existing training and capacity building methods and tools used in imparting training on immunization through a qualitative approach till the district level and a quantitative approach at the block and field level. The specific objectives of this study included:

i. Mapping of current immunization related training and capacity building programs, methodologies, tools and resources employed at various levels for different group of stakeholders by government and support-partners.

ii. Identification and documentation of knowledge, attitude, skill and practices related limitations and constraints by different stakeholders in performing their tasks

iii. Assessment of understanding and competency of different stakeholder groups to accomplish their roles and responsibilities with respect to the immunization program. Analysis of gaps between existing and expected levels of immunization related knowledge and competencies of stakeholders

iv. Understand training needs and suggestions of stakeholders regarding capacity building approaches

[1] International Journal of Community Medicine and Public Health Kakeri M et al. Int J Community Med Public Health. 2018 May;5(5):2043-2047
[2] Multi Year Strategic Plan 2013 – 17 Universal Immunization Program http://www.who.int/immunization/Programs_systems/financing/countries/cmyp/india_cmyp_2013-17.pdf
[3] Joint News Release, UNICEF/WHO, July 2017.
[6] JSI India (RISE): http://www.jsi.com/JSIInternet/IntlHealth/project/display.cfm?ctid=na&cid=na&tid=40&id=28864
[7] http://www.who.int/immunization/Programs_systems/financing/countries/cmyp/india_cmyp_2013-17.pdf

and interactive electronic and non-electronic methods that may serve to update their knowledge and skills to fulfill their roles and responsibilities.

Methodology

The study was conducted over a period of four months spanning January 2018 to May 2018. Data was collected in 5 states across India - **Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha and Tamil Nadu**. In each state, one intervention and one similar non-intervention (control) district were selected for the purpose of evaluation at later stage. The following districts from each of the state were chosen for data collection.

Table (i): List of intervention and non-intervention districts

State	District (Intervention)	District (Non- intervention)
Himachal Pradesh (HP)	Shimla	Solan
Madhya Pradesh (MP)	Bhopal	Indore
Maharashtra	Pune	Nagpur
Odisha	Khordha	Jharsuguda
Tamil Nadu (TN)	Kancheepuram	Madurai

Decision was made to cover at least 25% blocks in each district with a minimum number of blocks kept at 2. The blocks were selected in a way that both urban and rural situations are captured.

The study was conducted through three interlinked phases – inception, data collection and data analysis and report writing. The **inception phase** began with an inception meeting and included literature review, mapping of stakeholders, development of tools and pilot testing. The study adopted a mixed methodology approach employing both qualitative and quantitative tools. These tools consisted of surveys and checklists allowing for substantiation by secondary data and vice versa. The following table presents a snapshot of tools used to collect data from the five states.

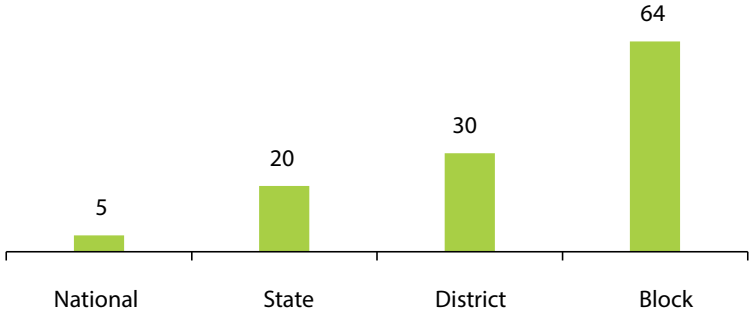
Table (ii): Tools used for data collection

Tool	Stakeholder	Insights	Modality	Numbers to be covered
In depth interviews	National – DC State- SIO, CCO, IECO District- DIO, CCT, IECO Block- MO/ BMO, CCH, LHV/MHW	Policy guidelines SOPs and current training practices Modules and Methods Reporting practices Supportive supervision	In person- one to one interactions	2-3 interactions at each state, district and block level
FGD checklists	ANMs, ASHAs and AWWs	Opinion about trainings Challenges Knowledge about their roles and responsibility	A group of 10-12 ANMs and ASHAs	2 FGDs at each block headquarter - one with ANMs and the other with ASHAs and AWWs
Observation checklist- immunization sessions	ANMs while administering vaccine	IPC skills Recording skills Immunization practices Cold chain practices Waste Management	Observation	1-2 in each block

Tool	Stakeholder	Insights	Modality	Numbers to be covered
Survey sheet for FLWs	ANMs and ASHAs	Technology proficiency Exposure to technology Technical information Preferred sources of receiving training	One on one using app	10-12 ANMs and ASHAs in each block

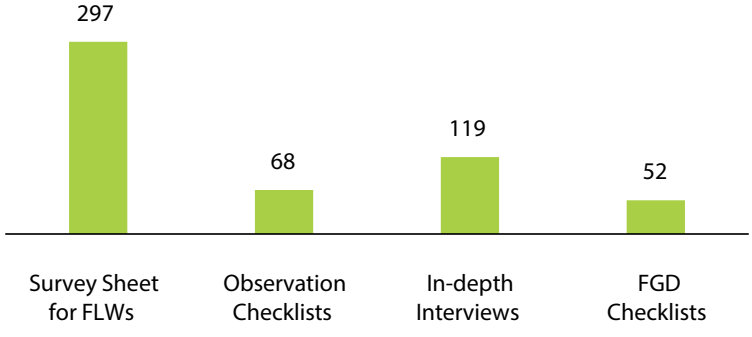
Primary interactions at various levels from national to field using mixed method to understand the 'existing' methodologies in training, modules, knowledge, awareness & practices in immunization were conducted.

Figure (i): Number of interviews conducted at various levels of the government



At the block level, the MOs were surveyed. Data regarding competency of CCHs was also collected using observation sheets. This included observing the cold chain sites and practices relating to cold chain handling. At the field level, toolkits for collection of data from ANMs were employed in the form of survey sheets and observation sheets.

Figure (ii): Number of interviews, FGDs, observations and surveys administered



The data analysis process involved collection of data and information from the field and segregating it under relevant categories for cleaning. For the collation process quantitative data was sorted according to each state and further sub-categorized under its various districts, blocks and fields.

The analysis was conducted using pivot table approach on Microsoft Excel and was subsequently visualized using appropriate graphs, tables and diagrams. Upon deriving from the primary data, the findings were substantiated using triangulation with qualitative inputs from respondents and findings from the initial desk review. Quantitative responses from the national, state and district levels were also used to support and substantiate findings from primary quantitative data collected.

Findings

Assessment of trainings (mix for all immunization trainings) by trainees

- The course content and the trainers are rated above average. However, it is to be noted that the course content while thorough, makes up the entire universe of knowledge for the trainees. Therefore,

they do not know if anything is missing from the course. Additionally, the trainers were also rated as knowledgeable and approachable.

- The logistics, training methodology, and duration of the training were rated to be average. ANMs and CCHs in particular were not satisfied with the infrastructure provided for the training and the duration which they felt as short.

Awareness of roles and responsibilities

- The national, state, and district level stakeholders are well aware of their roles and responsibilities, even though they frequently delegate their work, with proper guidance, to their subordinates. The IEC material development, related to immunization, was a subject where the state and district level IEC officers were not clear about their roles and responsibilities.
- Even though mostly aware of their roles and responsibilities, a large proportion of the MOs (22%) do not consider guiding the development of a communication plan as a part of their mandate.
- The field workers, namely the ANMs, and ASHAs, were well aware of their roles and responsibilities.
- However, 10% ANMs did not recall the key activity of preparation of sub center micro-plan as their role.

Knowledge and competency of stakeholders at block and field level

- The level of knowledge of the MOs may be of concern; questions about AEFI could only be answered correctly by about 50% and the questions on segregation of waste were answered correctly only by 70% of them.
- There is a lack of completed micro-plans (36% met the standards) collated by the MOs. Also, the MOs seldom formulated structured monitoring strategies.
- Knowledge and practice areas of concern for ANMs were related to vaccination practice including open vial policy, waste management, vaccination schedule, and AEFI.

Comfort with technology

- All ANMs possessed a phone and 82% of them had a smart phone. All the ANMs who had smartphones could make and receive calls, and majority of them (84%) could also use *WhatsApp* and texting services.
- Regarding the preferred method of training, MOs mostly chose online sessions and video conference, followed by skill stations and classroom sessions.
- ANMs were given 4 options to choose from and multiple choices were allowed. They reported that a combination of skill stations and classroom training is the most preferable mode. On further probing, they were open to training through technology, the preferred mode being smartphones than computers or tablets.

Challenges

- There is a lack of a uniform data collection mechanism and a central database to track training gaps in terms of trained vs. untrained workforce. None of the states surveyed had a systematic monitoring mechanism for the trainings conducted. Also, data received from various levels in the form of feedback, is not analyzed or shared further to feed in to developing training related decision making.
- There is a lack of inter and intra-departmental coordination particularly in terms of the development of training of modules. As a result, there is a degree of duplication in the training material developed.
- There is a lack of a strong government infrastructure enabling the government machinery to fully address capacity building needs across different levels. The involvement of SIHFW, medical colleges and other training centers is not adequate.
- The training modules are generally developed at the National level. Most of the times there is no formal process of training needs assessment but it is done through an extensive consultative process of the

immunization partners working in the field for many years. Thus, it takes care of the various needs across the country. However, some states were of the opinion that there should be more scope of including the state/situation specific needs in the modules.

- It was also observed that comprehensive RI trainings or refreshers for field level staff are not being conducted on a regular basis and sometimes there is a big gap of many years before they get RI training.
- Lack of technical information at block and field level acted as an impediment in effective coverage and quality of immunization. Information on critical aspects such as micro-planning, AEFI, communication, data management, waste management and cold-chain handling was found to be inadequate. This stemmed from a number of reasons including lack of trainings- routine and refresher, regular transfers and competing priorities of involvement in other health-programs and responsibilities.
- Almost all ANMs surveyed were aware of their responsibilities relating to vaccination, giving key messages, waste segregation and updating of RCH registers. However, it was observed that these responsibilities were actually practiced in a mundane manner particularly while giving 4 key messages after immunization, waste segregation and updating of MCP cards and RCH registers. This indicated an attitudinal issue or lack of ownership in the overall process of immunization.

Conclusion

- The frequency of routine immunization training was a concern across the category of staff. In the immunization program, several ANMs were found not to have undergone any formal training but underwent on-the-job orientation from their seniors. MOs, CCHs and ANMs indicated that frequent refresher training courses were preferred, which could be offered through technology (such as smartphones).
- AEFI is a core area where the gap between the existing and expected knowledge is present, as evidenced by both the MOs and ANMs. Considering the severity of the issue, this is an area which needs to be addressed.
- While the course content and trainers were unanimously (MOs, ANMs, and CCHs) rated high; the duration, logistics, and methodology of the training left a lot to be desired. To address these, the trainees recommended longer trainings, with skill stations and demo sites equipped with the requisite infrastructure to thoroughly explore the course content.
- It was observed that there is a gap between the awareness and knowledge (and practice) among the field staff. The most probable reason being a single and short training makes one just aware of the issue, but frequent reinforcement ensures retention of the technical nuances and translating them into practice.
- There is a need to take cognizance of the synergetic interaction between the ANMs and ASHAs, in the domain of immunization. As the ANMs time and competencies are stretched, ASHAs can provide additional support. AWWs and their roles also need to be delineated. As there is a scope of improvement in the competency and knowledge at the field level, an approach that provides the general knowledge to these three cadres and delineates the roles and responsibilities of each and then provides specific trainings to meet these, may be an approach worth exploring.
- The blended approach, of using two modes of trainings, was found to be suitable for MOs and ANMs. The establishment of skill stations and demo sites to complement classroom learning was found highly desirable. Though ICT, and its associated self-learning, was not a pronounced preference (37% MOs and 18% ANMs were open to online interactive training modules) the reason may be a fear of novelty and lack of exposure to such training methods.

Recommendations

Topics to be covered

Some key content areas identified to be covered in greater detail are as follows:

- **MOs** – Waste management, AEFI, Planning and Supervision
- **Cold Chain Handlers** – Regular maintenance of DF/ILR, vaccine stock records, Reporting of emergency (e.g. power failure) and planning for contingency measures, proper storage inside ILR and deep freezer, bio-medical waste management
- **ANMs and ASHAs** - Immunization schedule, vaccine administering practices, AEFI and related communication, waste management, recording and reporting

Reinforcing the information in the above content areas through frequent refreshers with mini capsules on immunization schedule, waste management, AEFI, usage of IEC and inter personal communication (IPC) could be possible solution.

Further, **supportive supervision has emerged as an area of concern.** Most MOs and DIOs, while undertaking the monitoring visits, stress upon checking the data for its accuracy and validity. As of now, there does not seem to be any training on supportive supervision. It therefore becomes important to have trainings on it. The target group for this training could be SIOs, DIOs and MOs. The training may include information on what supportive supervision is, why it is important, how it could be undertaken and what impact it could have on immunization.

Ownership of the programme

While ANMs and ASHAs to a large extent have technical competency, what is missing is the ownership of certain processes. For instance, ANMs and ASHAs are well aware of their responsibility to give four messages and also to brief the caretaker/parent about the purpose of the vaccine. It was observed that in most cases the desired practice was not followed. In such a scenario it is important to ensure that ANMs and ASHAs understand the importance of these processes and start owning it. Involving the trainees in the training process may help in this. Possible ways may be **real time sharing the pre-test and post test scores** with the trainees so that they themselves can appreciate the value of the training. Moreover, an **in-build certification system for IT-enabled training programs where the trainees can do self-assessment** of their knowledge enhancement can motivate them to learn in a more productive way

Use of relevant language and terminology

As part of their roles and responsibilities, ANMs, ASHA/AWWs are expected to deal with community health communication. During the survey, ANMs stated that while course content and trainers were satisfactory, the language used during trainings often included technical terms and jargon without reference to their vernacular translations or relevance at the community level.

For trainings, specific emphasis on use of **relevant vernacular terminology** may be considered, particularly if trainings are on infections and diseases, vaccination, cold chain management or new technologies.

Incorporating audio-visual aids in the class room training

Classroom training has emerged as the second most preferred mode of training after skill stations/ demonstrations. Respondents were of the opinion that current classroom sessions rely upon one sided communication and neither allow any participatory activity nor have infusion of technology. Respondents felt that in order to make trainings interesting and more impactful audio-visual aids could be used.

It is therefore recommended to have **mini audio-visual clips/movies** as part of the trainings. These clips could either be used to introduce a concept followed by a detailed discussion or could be shown at the end of session to recapitulate/reiterate the information.

Easy-to-refer articles to clarify confusion

ASHAs and AWWs expressed that they need real time support to clarify their doubts when they face with some particular complex situation. They were of the opinion that a **booklet with FAQs** and **job aids** would immensely help them in clarifying their doubts.

Demo sites/ skill stations

These have emerged to be a preferred mode of training. It is imperative that the trainings conducted should have practical exposure as an integral component.

With preference of classroom trainings as one of the preferred mode of training, respondents have also strongly expressed the need for greater practical and exposure-based trainings.

During the course of the study, it was found that knowledge of health workers regarding vaccine administration and other roles and responsibilities was satisfactory. However, significant gaps were observed in knowledge and practice of subjects like record keeping, waste management and AEFI. It was expressed that along with classroom trainings, practical exposure and demo-sites can serve as an effective technique for a holistic understanding.

Incorporation of practical demo –sites with human interface can provide trainees exposure in more holistic terms. Rather than a focus on the subject itself, trainees feel that practical training components expose them to a real-time scenario wherein knowledge, practice and competency can be improved while also being mindful of adverse or unforeseen challenges. In Tamil Nadu, for example, in one of the trainings and peer-to-peer knowledge sharing on vaccine administration, mock drills was practiced using orange peel as substitute for human skin to replicate sub-cutaneous administration of vaccine.

Incorporation of training components in monthly meetings

Given that the frequency of trainings through cascade model vary, stakeholders at the block and field levels have expressed the need for regular trainings which can help them refresh their existing knowledge and practices. There are some such examples in India, particularly in Rajasthan, where monthly meetings of ANMs have started including small training capsules to reinforce existing knowledge and even introducing new concepts relating to immunization.

Borrowing from such examples, this strategy can help reinforce and refresh technical and non-technical knowledge of those attending at no additional cost. Further since these trainings are going to be part of monthly meetings, a concept internalised and owned by ANMs, resistance would be low and attendance would be high. More importantly, this practice is easy to implement and requires little systemic support.

- Couple of hours during monthly meetings could be set aside for training ANMs on issues that they deem important to be trained. This can also include sharing of field experiences and practical constraints.
- The topic for the next training could be decided in consultation with ANMs in current meetings, taking into consideration immediate and relevant knowledge needs.
- MO needs to take responsibility of organizing and monitoring these trainings. This task could be added to monthly plan of MOs and their progression and increments could be linked to successful implementation of these trainings

Development of a comprehensive digital toolkit

Of the respondents surveyed at the block and field levels, most were found to use smartphones and were familiar with at least basic features included. With the introduction of the ANMOL tablets, and growing familiarity of stakeholders with digital tools, a **comprehensive mobile and tablet-based application can be developed to serve as an online and offline ready reckoner.** This application can provide information

on technical subjects to stakeholders including ANMs and CCHs using an interactive, user-friendly platform with audio-visual aids and presentations for reference at any time and place.

This mobile application can be targeted to help users carry out their roles and responsibilities with ease and may also incorporate elements to address queries, particularly those relating to immunization schedule, Cold chain management, AEFI, waste management and supportive supervision.

Set-up of training cells

At various levels, respondents have expressed that the training process is significantly affected by the trainers selected. Various factors including shortage of manpower, short notice while inviting trainers to be trained and identifying ideal persons for imparting training, significantly affect the quality of subsequent trainings. Based on the responses from different stakeholders, the suggestion to set-up dedicated training cells at the state and district levels can be useful in ensuring quality. While this would require change at a systems level, these training cells can support in the following manner:

- Better planning and scheduling of trainings for stakeholders at state, district, block and field level.
- Provide a direct interface and feedback channel with front line workers for better communication and understanding of training needs.
- Training cells can have properly identified and trained (at the state level), master trainers with public health background.

Training cells can help streamline the training process of the stakeholders (district and below) by practically documenting training needs and provide independence in planning and implementation of trainings. Similarly, developing an identification and selection criteria for master trainers at state, district and block level can help identify appropriate person related to immunization to be trained.

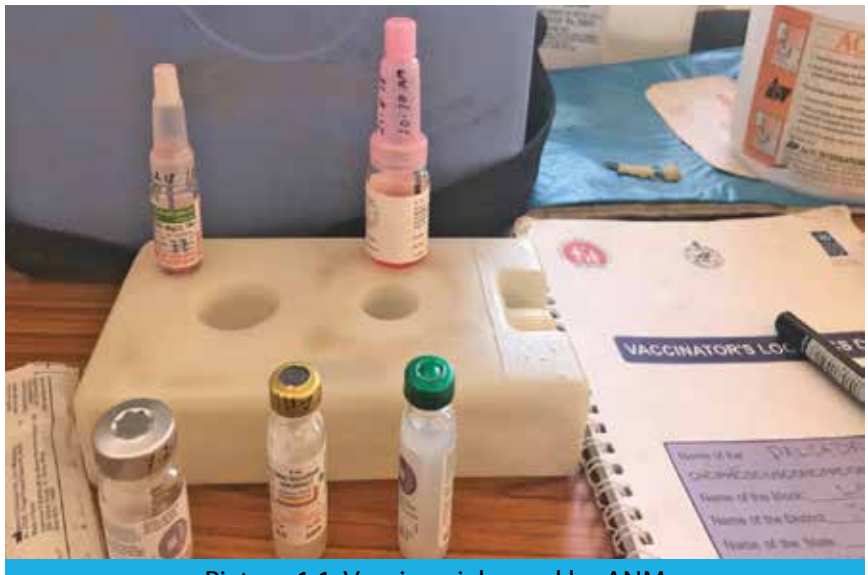
Section-1

Background

1. Background

Immunization is one of the most effective public health interventions for protection of children from life-threatening yet preventable conditions, especially under 5 years of age. With a population of 9.7% under the age 5 and below, immunization is a matter of critical importance in India. The country has gone through tremendous reforms in the context of immunization over the years to address coverage, equity and quality, as well as expanding the disease spectrum covered. Under the Universal Immunization Programme (UIP), launched in India in 1985, all vaccines are provided free of cost with the aim of increasing i) Immunization coverage, ii) Improve quality of services, iii) establish reliable cold-chain systems to health facilities, iv) introduce district wise monitoring, and v) achieve self-sufficiency in vaccine production.

The implementation of the UIP entails a broad set of roles and responsibilities. These include close monitoring of availability of various inputs ranging from vaccine procurement and ensuring timely supply of vaccines at delivery points; ensuring optimal functioning of cold chains; enforcing injection safety and waste disposal; closely monitoring vaccine preventable diseases (VPDs) and AEFI surveillance system. In 2014, the Ministry of Health and Family Welfare (MoFHW) also launched "Mission Indradhanush", a flagship program to reach out to every child with available vaccines and increase the Full Immunization Coverage (FIC). To increase the focus of this program, the mission has been intensified with an aim to achieve 90 percent FIC by December 2018.

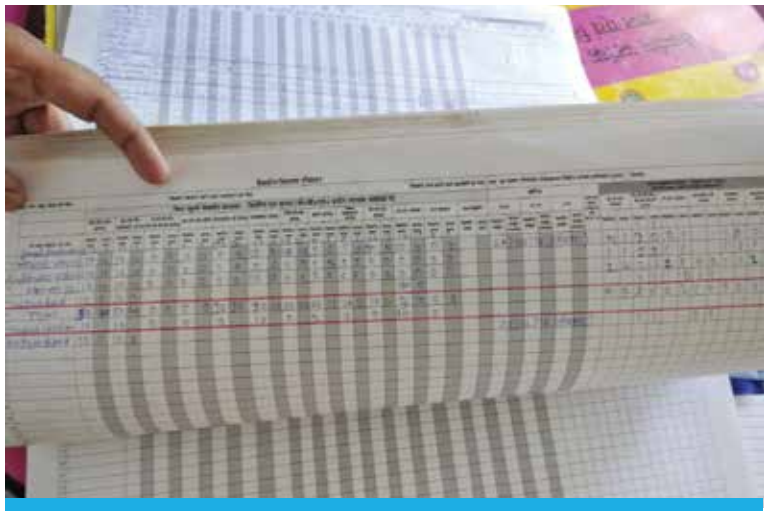


Picture 1.1: Vaccine vials used by ANM during immunization session

While rapid progress has been rapid in terms of ensuring immunization coverage, there still remain a number of challenges. The UIP exhibited 75-80% immunization coverage during the first decade of its implementation across the country.[3] In subsequent years however, immunization coverage has witnessed a decline of 15 to 20% across each vaccine, putting the program behind its original goal of 85% full immunization coverage.[4] While recent years have seen a steady growth in immunization coverage rates for individual vaccines, full immunization rate for infants between 12 and 23 months still stands at 62%[5].

[3] Transforming India's Vaccine Market, Mckinsey; https://www.mckinsey.com
[4] India: WHO and UNICEF estimates of immunization coverage: 2017 revision
[5] National Family Health Survey 4, 2015-16.

There are also variations from one state to another with the lowest immunization rates in India's large central states. Differences in uptake are geographical, regional, rural-urban, poor-rich and gender-related. On an average, immunization coverage in rural areas is still lower as compared to the urban areas (NFHS-4). However, it is observed that the increase in coverage in rural areas from NFHS-3 to NFHS-4 is more than the increase in urban areas during the same duration. These gaps can be addressed by having a strong supply-chain system and qualified and trained vaccinators as per need and session schedule.



Picture 1-2: Vaccine distribution stock register at CCP

Demand-side issues include lack of awareness and fear of vaccines and adverse event following immunization (AEFI). However, many of these are also linked to low capacity among immunization staff to plan, operationalize and monitor the demand-side services.

Taking note of the constraints in achieving FIC, the GoI has adopted a proactive approach in addressing both i) Implementation level and ii) Capacity level challenges. One of the approach has been to work closely with various partners including the WHO, UNICEF and UNDP to increase capacities of stakeholders across different levels of the UIP, and also incorporating technological advancements in cold-chain storage and monitoring, vaccine administration, waste management and other major components of immunization. Moreover, the pace with which the immunization portfolio is expanding with introduction of many new vaccines in National program, it is increasingly being recognized by policy makers that up gradation of knowledge and skills of all health personnel down to front-line health workers and mobilizers must keep pace with new developments. Also, with a huge primary healthcare workforce across the country, the standard cascade- based training mechanism can only reach each and every health personnel once in 2-3 years and in many cases, after many years.

Picture 1-3: Using the ILR to store vials at CCP

There is a growing acknowledgement of the evidence that the traditional workshop or classroom-based training programs may not be an effective method for dissemination of knowledge and up- gradation of skills. Moreover, global application of Information, Communication Technology (ICT) based devices, such as mobile phones, smartphones, tablets and computers have led to several innovations in the training methodologies. This opens new opportunities in reaching different stakeholders across geographies, on relevant and practical subjects pertaining

to immunization to strengthen their overall capacities and competency to perform roles mandated under the UIP.

GAVI, the Vaccine Alliance has provided funding to JSI, a partner with the Govt. of India, Health & Family welfare Immunization Division to develop a Rapid Immunization skill Enhancement (RISE) Package for different stakeholder involved in the implementation of the UIP. In order to better understand how innovative training tools and kits may be developed, this study was carried out through the "Thinkthrough Consultancy" to take stock of the capacity building needs of different stakeholders in the five states, and document existing gaps in knowledge, attitude and practices at various levels of the UIP.

Section-2

Methodology

2. Methodology

2.1 Objectives of the Study

The study bases itself upon a larger vision of achieving greater efficiency, reliability and scalability in ensuring improved information transfer, continuous updation and retention of skills, and building of stakeholder skills relevant to UIP. In order to effectively utilize the advantages of both i) Classroom based and ii) ICT based methodologies, through a blended- learning approach, there was a felt need to understand the opportunities, at both facility and community level, for self-learning, good practices and upgrading of knowledge pertaining to immunization.

Taking cognizance of capacity building challenges at all levels, JSI undertook the study **"Capacity building needs assessment of various stakeholders involved in the implementation of UIP".** with support of Thinkthrough Consulting Pvt. Ltd. The study was undertaken to identify capacity needs of various stakeholders involved in the UIP implementation at various levels- National, State, District, Block and Field. The study further captured the existing training and capacity building methods and tools used in imparting training on immunization through a qualitative approach till the district level and a quantitative approach at the block and field level.

The specific objectives of this study included:

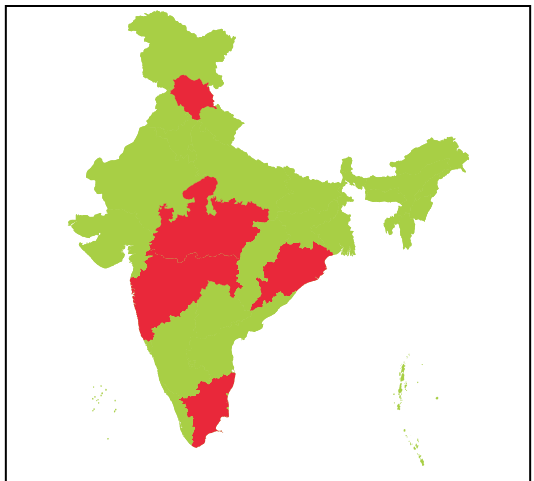
- Mapping of current immunization related training and capacity building programs, methodologies, tools and resources employed at various levels for different group of stakeholders by government and support-partners.
- Identification and documentation of Knowledge, Skill and Practices related limitations and constraints by different stakeholders in performing their tasks
- Assessment of understanding and competency of different stakeholder groups to accomplish their roles and responsibilities with respect to the immunization program. Analysis of gaps between existing and expected levels of immunization related knowledge and competencies of stakeholders
- Understand training needs and suggestions of stakeholders regarding capacity building approaches and interactive electronic and non-electronic methods that may serve to update their knowledge and skills to fulfill their roles and responsibilities.

2.2 Study period

The study was conducted over a period of four months spanning January 2018 to May 2018. This period covered the inception phase, qualitative data collection including in-depth interviews with representatives from national, state, district and block level; and quantitative – survey questionnaires and qualitative – in depth interviews with BMOs and FGDs with ANMs, ASHAs and AWWs approach addressed at both the block and field level followed by data analysis.

2.3 Areas of Study

The study was conducted in 5 states across India- **Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha and Tamil Nadu.** In each state, one intervention and one similar non-intervention (control) district were selected for the purpose of evaluation at later stage. The following districts from each of the state were chosen for data collection.



Distribution of study areas in India

Table 1: List of project districts

State	District (Intervention)	District (Non- intervention)
Himachal Pradesh	Shimla	Solan
Madhya Pradesh	Bhopal	Indore
Maharashtra	Pune	Nagpur
Odisha	Khordha	Jharsuguda
Tamil Nadu	Kancheepuram	Madurai

Decision was made to cover at least 25% blocks in each district with a minimum number of blocks kept at 2.

The selection process was done primarily on the basis of rural- urban population, while keeping the following considerations in mind:

- Blocks were chosen randomly.
- In cases where more than two blocks were chosen the additional blocks were rural.
- In cases where there were two blocks only, both were chosen irrespective of urban or rural population.
- In cases where there was no rural population, blocks/ wards were chosen on the basis of urban population.

Table 2: States, districts and blocks identified

State	District	Block
Himachal Pradesh	Shimla	Kumarsen (R), Mashobra (U)
	Solan	Chandi (R) and Dharampur (U)
Madhya Pradesh	Bhopal	Phanda (U) and Berasia (R)
	Indore	Indore (U) and Mhow (R)
Maharashtra	Pune	Pune Municipal Corporation (U), Haveli (R)and Shirur (R)
	Nagpur	Nagpur Municipal Corporation (U), Ramtek (R) and Savner (R)
Odisha	Khordha	Bhubaneshwar Municipal Corporation (U), Tangi (R) and Chilika (R)
	Jharsuguda	Jharsuguda (U) and Lakhanpur (R)
Tamil Nadu	Kancheepuram	Kancheepuram Municipal Corporation (U), Uthiramerur (R)
	Madurai	Melur (R), Kottampatti (R), Thirupparankundram (U)

2.4 Methodology

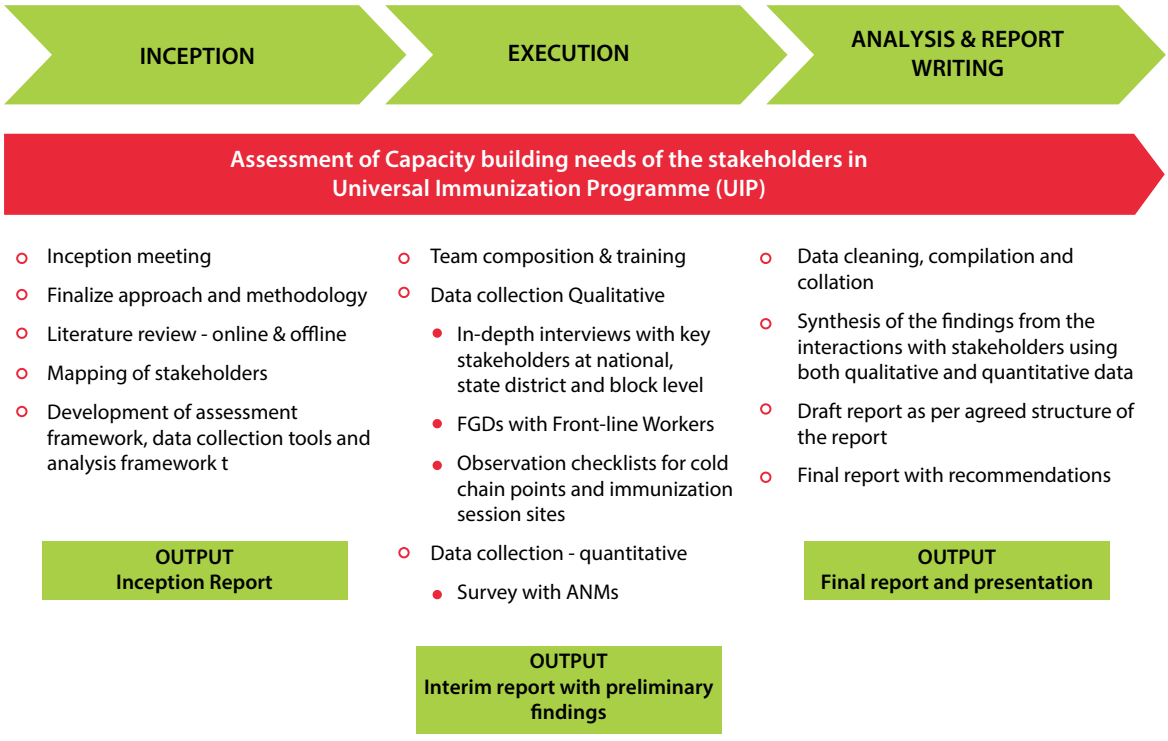
2.4.1 Approach

The approach to this study involved identification of existing gaps through a comparative analysis of the ideal scenario with the current situation. Since key players at the national, state, district, block and community levels are at the core of the implementation of the UIP at various levels, the study involved mapping of their core responsibilities in terms of an ideal scenario. In addition to respective roles; knowledge and skills, training to be undertaken, cold chain processes and protocols to be followed, performance indicators and challenges faced were also mapped for identified relevant stakeholder for subsequent comparison with findings. The framework given below was developed to list relevant details which were used as the basis of identification and assessment of existing gaps in the implementation of the UIP.

The study attempts to assess the training needs by identifying existing gaps in the immunization related knowledge and competency of stakeholders at different levels. Moreover, the study aimed at documenting relevant and replicable examples of capacity building, and to provide recommendations for strengthening the training of various officials at state, district block and field levels with technology as a strong focus.

In order to capture actionable findings and conduct the study smoothly, a mixed methodology approach was followed with the study being divided into three inter-linked phase.

Figure 2-1: Phases of the study



2.4.2 Inception Phase

i. Inception meeting

An inception meeting was held between TTC, JSI and MoHFW to discuss the project, the purpose, expected goals and deliverables of the study. The study methodology and data collection tools were also discussed in detail and the timelines were finalized along with familiarization of TTC team with JSI state teams. During the meeting, the point of contact was identified at both the organizations for leading this study.

ii. Preliminary Literature Review

An extensive secondary review (online and offline) was undertaken to review relevant literature relating to the programmatic evolution, objectives, guidelines and practices in the context of India's UIP, documented challenges and constraints to the program and initiatives to strengthen the program. Moreover, the literature review consisted of understanding the role of partners in catering to immunization related practices and training and capacity building mechanisms.

For the review, existing training and capacity building manuals were also taken into consideration. Since an important component of the study included incorporation of technology in the trainings process, desk review was undertaken to understand the growing role of technology in knowledge dissemination process. Successful examples of practices relating to capacity building of stakeholders involved in the immunization process from India and abroad were also documented as part of the review process. The documents reviewed included reports, academic articles, media and newspaper articles.

iii. Mapping of Stakeholders

Mapping of stakeholders was done at all the levels- national, state, district, block and sub-center. The purpose of the exercise was to identify all relevant stakeholders critical to the implementation of the immunization program. Each state immunization related human resources structures were studied during this phase, to gain better understanding of roles and responsibilities of different stakeholders in each state, and any variations in terminology, roles or decision-flow-structures.

Picture 2 1: Discussion with frontline workers

iv. Tools Development

In order to ensure that the proposed approach of mapping immunization related desired scenario with the existing situation within a quasi-experimental design, the right tools were developed to capture responses for the right stakeholders. As mentioned earlier, the study adopted a mixed methodology approach employing both qualitative and quantitative tools which were developed during the inception phase in close coordination with subject experts. These tools consisted of Survey questionnaire and checklists allowing for substantiation by secondary data and vice versa. The broad purpose of the tools developed included:

- Review of existing immunisation training practises and guidelines
- Study of regional and national best practises related to training
- Assessment of current level of knowledge, attitude and practices
- Assessment of technology penetration and preferred choices vis-à-vis technology
- Listing of challenges at various levels of immunization training
- Recording recommendations for improving immunisation training including innovative approaches and practices

The toolkit incorporated carefully designed questions and discussion points for each stakeholder mapped for the study. A comprehensive overview of the tools, objectives and respective stakeholders is given below:

Table 3: Data collection toolkit

Tool	Stakeholders	Insights	Modality	Numbers to be covered
In depth interviews	National – DC State- SIO, CCO, IECO District- DIO, CCT, IECO Block- BMO, CCH,	• Policy guidelines • SOPs and current training practices • Modules and Methods • Reporting practices • Supportive supervision	In person-one to one interactions	2-3 interactions at each state, district and block level
FGD checklists	ANMs, ASHAs and AWWs	• Opinion about trainings • Challenges • Knowledge about their roles and responsibility	A group of 10-12 ANMs and ASHAs	2 FGDs at each block headquarter - one with ANMs and the other with ASHAs and AWWs
Observation checklist- immunization sessions	ANMs while administering vaccine	• IPC skills • Recording skills • Immunization practices • Cold chain practices • Waste Management	Observation	1-2 in each block
Survey sheet for FLWs	ANMs and ASHAs	• Technology proficiency • Exposure to technology • Technical information • Preferred sources of receiving training	One on one using app	10-12 ANMs and ASHAs in each block

Following the development of the toolkit, a pilot testing of the tools was conducted in Wazirabad in Gurgaon, Haryana. Based on the findings and feedback, changes were incorporated to the toolkit for refinement and standardization.

v. Training of Team

Subsequent to the development of the toolkit, a training workshop was conducted for the data collection team by the team leader along with senior experts and representatives from JSI. Completion of the training workshop marked the beginning of the data collection phase.

2.4.3 Data Collection

Immediately following the conclusion of the inception phase, data collection phase commenced. For each survey state, the data collection team was supported by the respective JSI state teams in arranging permissions and meetings with relevant stakeholders. The data collection phase was conducted between mid- February 2018 and lasted till early May 2018 on obtaining ethical clearance from the Govt of India.

For the collection of primary data, a mixed methodology approach was employed taking ethical guidelines in to consideration. Careful consideration of socio-cultural and geographical factors was done and the data collection teams consisted of members with substantial geographical experience and language skills of their states. Regular updates were also shared on a daily basis using the **'TNA'** WhatsApp group along with relevant photographs.

Figure 2-2: Number of interviews conducted at various levels

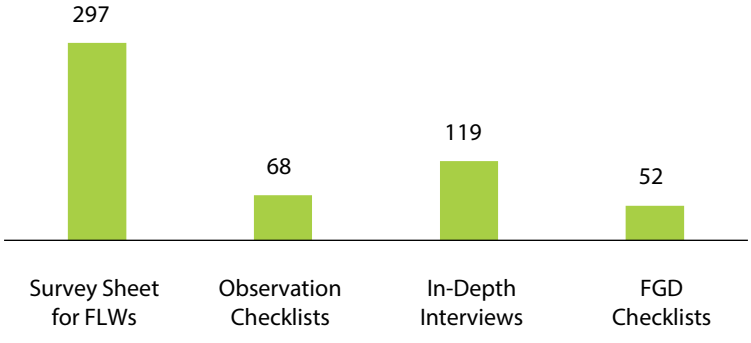
At the block level, the BMOs were surveyed on the subject of their knowledge relating to critical responsibilities in the context of immunization like AEFI and waste segregation. Moreover, data was collected on their knowledge of mandated roles and responsibilities through both voluntary and probing based responses, their assessment of existing trainings, technology proficiency and exposure to technology, and preferred modes for trainings. Data regarding competency of CCHs was also collected using observation sheets. This included observing the cold chain sites and practices relating to cold chain handling.

Picture 2-2: Immunization session in progress

At the field level, toolkits for collection of data from ANMs were employed in the form of survey sheets and observation sheets. The tools included collection of data on awareness, knowledge and competency of ANMs to carry out their mandated roles and responsibilities through both voluntary and probing based responses. The ANMs were also administered knowledge-based questions to gauge their grasp on the immunization schedule and subjects such as AEFI and Waste Management. In order to understand the level of competency in terms of practice, ANMs were also observed at RI sites through an observation sheet.

Moreover, survey questions were administered to ANMs to understand their assessment of existing trainings, technological exposure and proficiency and preferred modes for trainings.

Figure 2-3: Number of interviews, FGDs, observations and surveys administered



The data collection process also involved using several techniques for ensuring quality in data as well as maintaining ethical considerations:

Consent forms: Respondents were required to sign a consent form to eliminate any possibility of misrepresentation. Prior to the survey, the respondents were briefed about the objective of the study, the extant of the discussion and the proposed time of the interview/ survey. Participants were also given the choice to not answer any question they were not comfortable with or withdraw from the interview at any stage.

Voluntary and probing: Careful consideration was placed to ensure the comfort of respondents while answering any questions. At no point were the respondents forced to answer any question, and instead a probing approach was incorporated to direct the discussion without affecting their response. This approach was also helpful in gauging awareness related information from stakeholders.

FGDs with group exercises: For recording responses from FGDs with ANMs, ASHA and AWWs, the study utilized a participatory approach. Each FGD was conducted with a substantial time given to group exercises. The participants were divided into multiple groups and collectively developed responses on the challenges and provided suggestions on the subjects being discussed.

Picture 2 3: FGD in progress

Observation: During observation of CCPs and RI sessions, the data collection teams employed a silent observation approach. All members carefully observed the sites without hampering or commenting on the practices of the ANMs/ CCHs.

2.4.4 Data analysis and report writing

The data analysis process involved collection of data and information from the field and segregating it under relevant categories for cleaning. For the collation process quantitative data was sorted according to each state and further sub-categorized under its various districts, blocks and fields. Each data set was matched with its respective stakeholders and subjected to a number of statistical cleaning procedures for subsequent analysis using Microsoft Excel.

Post- collation and cleaning, analysis of data was done to match the objectives of the study. Data from survey sheets and individual quantitative questions were analyzed to reveal i) awareness and knowledge related findings, ii) Trainee assessment of trainings, and iii) training and technology related preferences, exposure and proficiency, at block and field levels. The observation sheets for CCPs and RI sites were analyzed to reveal information on competency of CCHs and ANMs. For voluntary and probing based responses (on awareness of roles and responsibilities), the analysis employed binary coding.

The analysis was conducted using pivot table approach on Microsoft Excel and was subsequently visualized using appropriate graphs, tables and diagrams. Upon deriving from the primary data, the findings were substantiated using Triangulation with qualitative inputs from respondents and findings from the initial desk review. Quantitative responses from the National, State and District levels were also used to support and substantiate findings from primary quantitative data collected.

The challenges with respect to immunization practices and capacity building, were listed by comparing the ideal scenario with the current findings and by matching with suggestions provided from the field. Subsequently, suggestions and recommendations were provided by taking into account review of existing best practices, responses from stakeholders and gap analysis, and by also taking into consideration the feasibility of their application.

Special focus was given to technology competency and proficiency. Responses from the block and field levels were carefully tied with the suggestions and recommendations provided.

2.4.5 Limitation and challenges in the field during data collection

Other campaigns: In Odisha, owning to the ongoing campaign on MR vaccination, many ANMs were unavailable for survey due to conducting sessions for MR campaign. As a result, the data collection team had to conduct surveys and interactions within a considerably lower amount of time to compensate for unavailability of ANMs after a particular time.

In Madhya Pradesh, there was a strike announced by NHM contracted ANMs in Mhow block. As a result, the team was required to compensate for by conducting more rounds of interviews with ANMs over a longer period of time.

In Tamil Nadu the districts where data collection was conducted were changed at a later stage at the behest of state government. The data collection in new districts could only begin after taking due approvals at various stages. The change of districts and the subsequent approvals caused a delay of a month.

Section-3

Key Findings

3. Key Findings

3.1 Standard Operating Procedures (SOP) and Existing Trainings, Modules, and Methodologies

For GoI, immunization is a critical component of India's Child Survival Strategy. For last few decades, efforts in form of policy measures, advocacy, ratification of conventions and developing programs have been directed to achieve full immunization coverage. Universal Immunization Program is one such program. UIP in the recent past has undergone reforms to address coverage, equity, and quality.

Of various measures to achieve full coverage one is to ensure sufficiency and adequacy of health care professional at various levels. Currently, the country possesses a primary healthcare workforce exceeding 2,00,000 ANMs, 900,000 ASHAs, and 30,000 Medical officers[6]. The training of these stakeholders on the nuances of immunization is a key component in achieving coverage.

India has a well-defined capacity building program under UIP to ensure that service providers at all levels are trained appropriately on immunization as per the role they are expected to play in immunization. The current system of capacity development of stakeholders follows a cascade-based training mechanism, which could be classified into three broad categories:

- Routine Immunization
- Subject specific- vaccine or technology
- Refresher trainings

The current section attempts to present information on existing training manuals and the methodology followed.

Existing training situation (According to inputs from NIHFW, WHO, UNDP & UNICEF)

Data with respect to all existing trainings related to immunization was collected through qualitative survey with key persons in Government and partners at the National level (NIHFW, WHO, UNDP, UNICEF and ITSU). The major trainings are RI training for Medical Officers, RI training for health workers, Cold chain trainings for cold chain handlers at different levels, and AEFI trainings. (An indicative list is provided in Annexure 1). However, it was observed that the desired frequency of these trainings is not very clearly defined and in absence of an effective monitoring system on trainings, many of these trainings are not happening for long time. There is no reliable data at the national level to know the training status at the ground level in every states/districts, which is key for planning and management.

Apart from these, there are other targeted trainings like new vaccine introduction, VPD surveillance, media trainings, etc.

Stakeholders involved

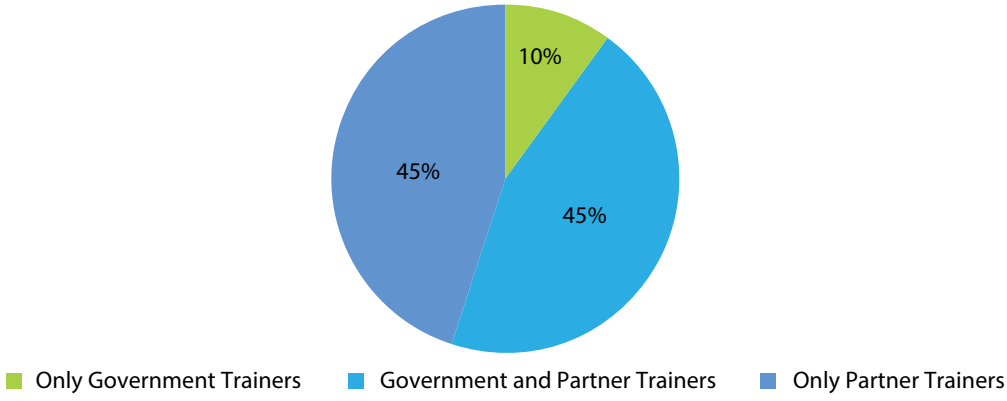
Existing training programs cover all level of staff. Several training programs have multi-stakeholder involvement. Data collected shows that DIO is involved in most number (six) of trainings. Grassroots level workers (ANMs, ASHAs, and AWWs) are involved in just two trainings each. **There is need to have regular trainings for grassroots workers as well as Routine immunization trainings for program managers like SPM, DPM, DMRCH, DHIO.** In present system, there is no RI training for program managers such as SPM, DPM, DMRCH, DHIO.

Trainers

The data with respect to trainers suggests a substantially high reliance on implementing partners and international development agencies to conduct the training programs. Only 10% of the training programs

are exclusively conducted by central and state governments. Following chart shows distribution of training programs as trainers.

Figure 3-1: Trainers conducting trainings



Training Methodology as existing in the guidelines & practiced

Prescribed training methodologies include combinations of classroom teaching, field visits, group activities and practice sessions. As of now all training programs utilize classroom teachings. This has been substantiated by primary findings where all stakeholders confirmed having been trained through classroom trainings. Immunization involves a blend of knowledge and skills. In light of this fact, there is a need for integrated methodologies including classroom teachings, participatory group activities and field visits to be utilized to a greater extent which emerged through the findings of this study.

3.2 Assessment of trainings (mostly new vaccine trainings)by trainees

The mapping of the trainings, expounded in section 3.1, shows that staff at different levels are required to attend a host of trainings. Seeking feedback and then incorporating the same in the training programs could make the trainings more effective.

The current section presents in detail the feedbacks provided by trainees at block and field level through a semi quantitative approach. The respondents were asked to rate the last training that they had attended in the last three years on a 5-point scale with one being lowest and 5, highest. The respondents interviewed were BMOs, ANMs, and CCHs.

The components to be rated were as follows:.

- Trainers
- Training Methodology
- Training Duration
- Course Content
- Logistics

*"**Jo trainer hume bahar se padhane aate hai who aachche hote hai"*** (trainers who come to teach us from outside are good). The trainers were BMOs and DIOs

"Jo pichhli baar training mein hume padhaya gaya who hamare liye naya thha aur hamare kaam ka thha" (content taught to us during the last training was new to us and it was beneficial for us). This was being referred to the training on new vaccines.

*"**Humne pichhle teen saal mein sirf ek din ki trainings attend kiye hai, trainings ek din se jyada ke hone chahiye"*** (during the last three-four years we have only attended one day trainings, training duration should be more than a day). This was being referred to the training on new vaccine – MR.

"Training jahan hoti hai us jagah kaafi disturbance hoti hai, kabhi toh passage mein ya common room mein trainings attend kiye hai" (there are lot of distractions at the training venue, sometimes trainings are being organized either in the passage or in a common room).

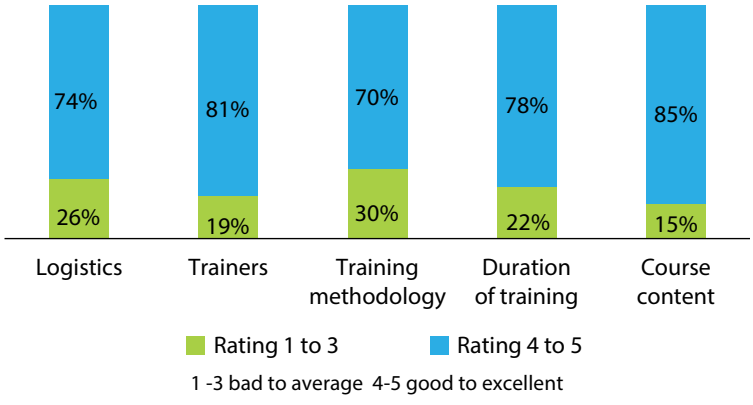
The above statements given by ANMs in different states during data collection exercise provide insights about their perception of the various trainings that they had attended. While these are qualitative in nature, the quantitative analysis is shown below.

Block level (MOs/ BMOs):

The course content, duration of training, and trainers were scored highly (85%, 78% and 81% respectively) by the MOs/ BMOs. From their comments, it was gathered that the relevant and comprehensive course content, trainings of appropriate lengths (often 2 days) and interactive, approachable, and knowledgeable trainers, were key to enhancing knowledge. **Training methodology** and logistics received maximum low to average ratings. Approximately 30% respondents rated training methodology as low to average while 26% rated logistics as low to average.

No state-wise differences have been noticed in terms of rating of trainings by MOs/ BMOs. In all the five states covered for the study course content, trainers and duration of trainings have been rated high. BMOs from all five states were quite appreciative of the **trainers**.

Figure 3-2: MO/ BMO assessment of trainings



Specific observations to various aspects of trainings are as follows:

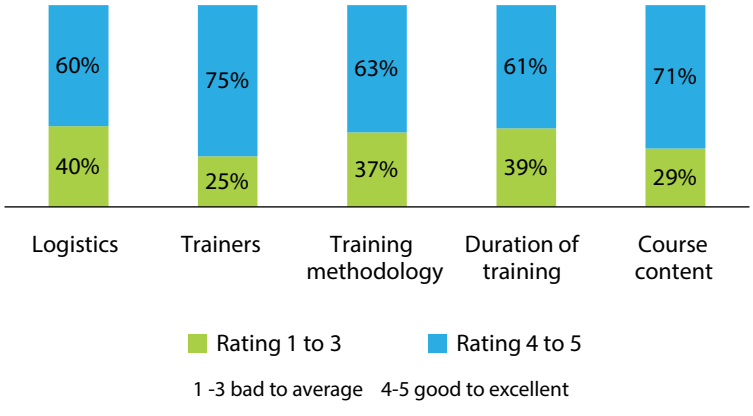
- Trainers were unanimously rated as good to best by majority of respondents. The respondents were of the view that the trainers were appropriately trained to deliver the trainings and were dextrous in handling the various queries that respondents had. Further it was stated that trainers were well aware of the subject being taught along with practical considerations of the field.
- According to one of the BMOs interviewed in Maharashtra trainers were experienced personnel working at district or state level and possessed technical knowhow on facilitating the trainings. In his own **words "trainers come from district or state level and are those who have been working in the sector for long, they are experienced and before coming for training us they themselves are trained"** He further stated that trainers were quick to respond to the queries that respondents had. **When probed for other reasons that made trainers good, it was shared that since the training that they had attended were mostly on new vaccines, the trainers would have also been trained in recent past and hence the information loss on technical information was less.**
- Course content, which has received maximum number of good to best rating, was found to be relevant. Most BMOs commented that the course content was comprehensive and covered all subjects in detail necessary to enhance both knowledge and practice. It was observed that anything that was developed at the state or the national level was found to be of quality by respondents.

- Respondents from all states felt that the course content was appropriate for them and that it equipped them to deal with immunization effectively. One of the MOs met in Odisha stated that **"the course curriculum was balanced in terms of providing technical information and action points to be taken."** He further stated that **"there was however a scope for improvement in terms of reiterating the information on newer topics such as AEFI management".**
- Duration of the trainings (often 2 days for BMOs) was reported to be appropriate for the subject matter being taught, with time for queries and providing feedbacks. It was shared that the duration of trainings was carefully designed keeping in mind the requirements at their level. The other BMO from Himachal Pradesh mentioned that **"for training on new vaccines, two days are sufficient",** when asked to increase or decrease the duration, she stated that **"reducing it to a day would make it ineffective since most of the time on day one is spent on registration, waiting for other participants and filling pre- post and feedback forms".** Further she stated that **"increasing it to more than two days, will make it impractical for them to attend leaving their routine work."**
- Training methodology and logistics received maximum low to average ratings**. Most BMOs were of the opinion that training methodologies often undermined training quality. Reasons cited included a strong theoretical top-down training style, low usage of audio-visual content and lack of practical or group- based exercise, and demonstrations.** Reasons also included lack of support material to facilitate audio-visual presentations, practical demonstrations etc. The training methodology is focussed on theory and employs few audio visual and demonstrative exercises.
- Lack of proper infrastructure in certain states (Himachal Pradesh, Odisha and Madhya Pradesh) and arrangements in terms of accommodation and transportation made logistics an area with a scope of improvement. Probing into logistics revealed the unsatisfactory accommodation, transportation, and infrastructure not only discomforted the trainees, but also limited the options available to the trainer to employ different tools.

ANMs

The favourable rating for trainings at the block level does not translate itself to the field level. Trainers have rated as good to best by 75% respondents. **Course content** was rated good to best by 71% respondents. Of the five components to be rated logistics, duration of training, and training methodology were rated low by respondents.

Figure 3-3: ANMS' assessment of trainings



- Trainers were reported to be knowledgeable, practical, and approachable. No state-wise differences were observed in terms of trainees' rating on trainers. According to the ANMs in Madhya Pradesh the trainers possessed adequate technical information on the subjects to be taught. One of the ANMs during interaction said "trainers apne subject mein sab kuchh jaante hai aur unke pass har sawaal ka jawab hota hai" (trainers possess all the technical information and have answers to all the queries). Further in

Tamil Nadu, ANMs were of the opinion that state machinery has ensured that they are trained by the best trainers. They stated that "engala train pandravara trainers nalla knowledge ullavangalairuppanga. Avanga district illana state level ah irunthuvarubanga" (trainers have good knowledge and they mostly come from district or state).

- Similar sentiment was shared in other states too. Further it was stated that trainers understood practical constraints ANMs face at the community level. This was deemed to be an important aspect while rating trainers. One may infer that empathy is an important skill to be possessed by trainers. In Himachal Pradesh ANMs stated "trainers ko pata hota hai ki hume kaise kaam karna hota hai, woh jab training dete hai toh, samjhane ke liye hame example hamare roz ke kaam se sambandhit dete hai" (trainers are well aware of our day to day work. During training to make us understand concepts they provide examples from our routine work). Trainers were also stated to be largely supportive in answering queries and providing any clarification.

- Respondents found the course content to be relevant. Since these were the trainings on new vaccines, relevance was defined in terms of getting to know about causes of disease, mode of prevention, site and route of administration and AEFI. Further respondents were of the view that course content balances theoretical and practical components of the subject covered. Both ANMs and ASHAs felt that course content helped them in getting equipped with relevant information. They reported to be confident in dispelling information during campaigns. However, in one of the interactions with ASHA workers it was stated that they might not be the best persons to rate the content.

- According to them course content was set either at the state or the national level by experts and hence was taken to be appropriate and relevant. As per one of them from Himachal Pradesh, "hum toh yeh maan lete hai ki jo course hai who aachcha hee hoga kyunki who gunijano ne likha hota hai" (we assume that the course curriculum is best since it is being designed by the experts). While on one hand it suggests their faith in the system on the other it indicates that anything that was designed/decided at a higher level was assumed to be good. Further it also is an indication of the top down approach that is currently being followed to design the training programs.

- This aligns well with one of the national level findings wherein it was observed that the manuals are designed at the national level by experts with no pre-testing done at any level. Before finalizing the manual feedback is sought from other experts and/or national partners but the state officers suggested to take feedback from states too so that nuances of the states/regions where manual would have to be transacted, can also be incorporated.

- Duration of training is another area of concern. At field level, the trainings that were organized (mostly on new vaccine) were of one-day duration. ANMs and ASHAs were of the opinion that duration of trainings should be increased. They felt that owing to filling up of pre and post test questionnaires, feedback form and registration, the actual time left for training is 4-5 hours. According to them, internalizing new information takes times and hence one-day training is not sufficient. They further stated that time constraint coupled with one sided communication makes it difficult for them to internalize the trainings. It was shared by respondents at state and national level that currently the feedback forms and pre and post test questionnaires are not analyzed.

- Logistics was rated bad to average by 40% respondents followed by duration of training – 39% and training methodology – 37%. Reasons for providing poor rating to logistics ranged from improper seating arrangement to small and congested venue, lack of electricity, lack of direct transportation to reach venue and lack of furniture. ANMs and ASHAs in Madhya Pradesh and Tamil Nadu reported

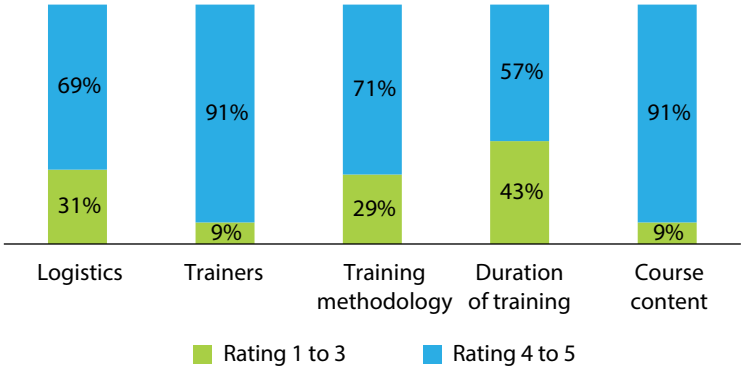
having attended training in the corridor. According to one of the ASHAs "pichhli baar training mein hume passage mein baithna pada jahan kaafi shor thha aur jis vajah se training mein dhyaan lagana mushkil thha" (during the last training we were to sit in the corridor where there was a lot of noise, it was difficult for us to concentrate on training). Further in Himachal Pradesh ANMs unanimously complained of having no support to write leading them to place their note books in their laps. ANMs and ASHAs in all states except Maharashtra were of the opinion that logistics need to be improved significantly. They said that any discomfort and/or distraction during the training led to lack of concentration.

- Similar responses were received from all five states with regard to training methodology. It was stated by ASHAs and ANMs that the trainings were facilitated by trainers and most of the times these were lecture based with minimal two-way communication. They further added that trainers usually come with their agenda and since they need to complete the training on time they keep the interaction minimal. ANMs from Maharashtra said that "trainer aachche hote hai lekin time ki kami ke karan woh jaldi jaldi saare session karte hai jiski vajah se hum unse jyada sawaal nahin pooch paate" (trainers are good but due to time constraint they rush through the training and we are unable to ask questions.
- This view point was also shared by the MOs/ BMOs who took the responsibility of arranging these trainings. According to them given the cascade model, by the time trainings are organized at the field level little funds and time is left owing to scheduling for a day long training. In such a situation trainers usually are left with no choice but to rush through the training. Further it was stated that owing to limited number of trainers and also time constraint usually one batch of training has 50-60 trainees sometimes more making it difficult for trainer to make it interactive and for trainees to concentrate.
- Further respondents from most of the states stated that the trainings did not have any group exercises, field visits or practical training. The training was conducted through a power point presentation. According to trainees use of power point presentation made the training dull. This also does not align with the guidelines on how trainings are to be conducted. Suggested methodology includes practical training and participatory exercises. Further interaction with stakeholders at national level like WHO highlighted that power- point presentations cannot be used as a lone mode of imparting training. It could be used to highlight or summarize the salient features.

Cold Chain Handlers

Similar to the BMOs and ANMs, majority (91%) of cold chain handlers rated highly for trainers and course content. The trainers were found to be knowledgeable and course content was found to be comprehensive encompassing of theoretical and practical subject matter.

Figure 3-4: Cold chain handlers assessment of trainings



However, there is a sharp decline in the ratings for **training duration, logistics and training methodology,** where respondents gave poor rating of 43%, 31% and 29% respectively. Multiple reasons were cited for this including short duration even when subjects covered under cold- chain handling are highly technical, and lack of inclusion of practical components.

Table 4: Key takeaways: trainee assessment of trainings on immunization

- ***Course Content and Trainers rated high***

Overall, respondents at all levels gave a higher rating to course content and trainers. Both BMOs and ANMs expressed that the course content was comprehensive and covered all relevant topics and expressed that the trainers, mostly referred to new vaccine trainings, were knowledgeable of the content and provided guidance on both theoretical & practical components. However, this does exclude the fact that respondents also mentioned that training quality was significantly affected by lack of interactivity, and practical/ group-based exercises.

- ***Logistics, Training Methodology and Duration rated below average***

Across all levels, respondents expressed that logistics, training methodology and duration were concerns affecting training quality. ANMs and CCHs were specific in expressing that duration of trainings was usually short and had limited interactivity and a discussion-based approach. ANMs in particular were concerned with the inadequate logistics claiming that lack of space and proper logistics have a negative impact on trainings.

3.3 Awareness, Knowledge and Competency of staff at different levels

3.3.1 Awareness of Roles and Responsibilities

The awareness of roles and responsibilities is a precursor to effective implementation of duties. It also provides insights into which roles are recalled well and adhered to and which are not. In order to check the awareness of various stakeholders about their roles and responsibilities interactions were held at national, state, district, block and field levels through a mixed methodology approach. Awareness on roles and responsibilities was tested using specialized tool kits to assess relevant information through voluntary and probing techniques. The analysis of the data collected and key findings regarding awareness of respondents at different levels are provided below.

State Level

Despite some variances in the roles and responsibilities for the state level functionaries in different states, the common roles and responsibilities are annual planning, organization and facilitation of trainings at the state level and below, vaccine logistics and management, monitoring of immunization related activities, and guiding information and communication strategies. For interactions at the state level, the following stakeholders were interviewed in the 5 survey states using in-depth qualitative interviews.

- State Immunization Officer (SIO)
- State Cold Chain Officer (CCO)
- State IEC officer
- Principal/Dean- State Institute of Health and Family Welfare (SIHFW)
- State Program Manager
- Findings from interactions revealed that all stakeholders at the state level were **mostly aware** of their roles and responsibilities in the context of immunization. **All SIOs** interviewed were aware that **monitoring of program** and **trainings related responsibilities** like strategy, implementation and incorporating trainings needs was an integral part of their role.
- It was observed in all states that immunization was delegated to one or the other personnel under them, without any guidance or supervision. A probe into it revealed that SIOs have other responsibilities to take care of.
- **All the state CCOs** were also aware of their responsibilities with respect to **cold-chain handling**, **reporting** and **monitoring systems**.

- **Most state IEC officers** across all states were aware of their roles and responsibilities in terms of developing an annual plan of action, organizing campaigns and developing relevant **communication material.** It was however observed that immunization was not in their list of priority. When enquired it was stated that IEC on immunization is being developed at national level and hence they did not prioritise it in their plan.

Picture 3-1: IEC material in use

- **All** concerned stakeholders at **SIHFW** in Madhya Pradesh, Maharashtra, Himachal Pradesh, Tamil Nadu and Odisha were found to be aware of their roles and responsibilities in terms **of training of trainers (ToTs)** under RI program. It was observed that while stakeholders at state level were aware of their roles and responsibilities vis-à-vis immunization, a coordinated effort to achieve full immunization coverage was missing. For instance, in all the states SIHFWs were working independently and were involved in planning and executing training programs. It was observed that SIHFWs were working in close coordination with NIHFW whereas other state level officials especially SIOs were aligning themselves with Department of Health. It was stated that in many instances SIO and personnel from SIHFW were unaware of mandates of each other. Another area that has emerged as a concern relates with non-usage of infrastructure of SIHFWs.
- In all states, SIHFWs have state of the art infrastructure with demo sites, bigger rooms with proper seating arrangement and other facilities. It was observed that currently the infrastructure and manpower remain underutilized with only some training of trainers (ToT) happening in SIHFWs.

District Level

District level functionaries are responsible for annual planning, training, vaccine logistics and management, and monitoring of UIP especially immunization sessions, data entry and updating, and RCH related activities. For interactions at the district level, the following stakeholders were interviewed in the 5 survey states using in-depth qualitative interviews:

- District Immunization Officer (DIO)
- Cold Chain Officer/Technician
- District IEC Officer
- District Program Manager (DPM).

Findings from interactions revealed that most stakeholders at the district level were largely aware of their roles and responsibilities in the context of immunization.

All DIOs except for Odisha were aware of their roles and responsibilities in the context of immunization, **particularly planning, monitoring and coordination, facilitation and implementation of trainings.** Both the DIOs in Odisha were new transfers to the districts so they did not have any information about district specifics. One of them had prior experience in training department, so was more familiar. The second was a transfer from a radiology department so was still learning on the job about immunization.

Most District cold chain officers were aware of their responsibilities w.r.t management of cold chain, **planning and scheduling, and inspection and monitoring of cold chain points.**

Most District Program Officers were aware of their overall responsibilities. However, in most states it was found that DPMs were not specifically delegated to carry out immunization related activities in particular. They were given responsibilities as and when any additional help was required.

Most District IEC Officers were not clear about their roles and responsibilities w.r.t immunization in particular. Most officers remarked that there was lack of coordination with the state level IEC departments especially in terms of planning and strategy.

Block level

At block level, the Medical Officer/ Block Medical Officer (BMO) has the overall responsibility of implementation and monitoring of UIP in their jurisdiction. Assessment of their awareness was done using both quantitative and qualitative tools. They identified their responsibilities voluntarily and were also probed in case certain responsibilities were not mentioned. **Most identified responsibility** included:

- Guiding and supervising vaccine and cold chain handlers – recalled by 78%
- Conducting field visits as per supervision plans – recalled by 74%
- Ensuring sufficient vaccines and supplies for planned sessions – recalled by 67%
- Developing comprehensive action plan to improve routine immunization – recalled by 67%

Least identified responsibilities mentioned by MOs/ BMOs included **guiding development of communication plan –** 22% and **supporting data handler in compiling and maintaining data** - 37%.

There were some roles which even after probing were not recalled by BMOs. For instance, 22% of MOs/ BMOs could not identify **guiding development of communication plan** as their responsibility**.** Approximately 19% of them did not mention **timely release of funds** as their responsibility. Around 11% MOs/ BMOs were unaware that **supporting preparation of microplans** and regularly updating them is one of their duties. This appears to be an area of concern given that micro plan forms the foundation of immunization program at block and field level.

While monitoring and supervision visits were recalled by MOs/ BMOs as their role they expressed their inability to be regular in organizing these visits. They stated that their monthly plan undergoes a lot of change in order to accommodate the sudden requests and tasks that come from higher level. In such cases monitoring visits to sub centers is often compromised.

It was observed that **supportive supervision remained within the confines of action plans**. Even when MOs/ BMOs were going for monitoring and supervisory visits, they primarily focused on checking records and registers. Apart from that other things were not looked at. At few sub centers that were visited as part of study instances of irregular supplies were observed. In Himachal Pradesh, paracetamols were not found in two sub centers. Parents/caretakers were not provided with paracetamols. When asked the ANMs stated "***sir abhi hafte bhar pehle tak toh thhi, abhi khatam hui hai, main aaj sham ko hospital se le loongi***" (these were available till last week, I will collect it today evening when I go to return the vaccine carrier). Similarly, plastic bags to segregate waste were not found in many sub-centers in Himachal Pradesh and Maharashtra. Further in Maharashtra, at few immunization sites, needle cutters were not available. In terms of IEC material, most ANMs and ASHAs were unaware of how and when to use it. Usage of IEC material during community mobilization and otherwise was reported to be negligible. While the above stated points relate with supply and ANMs capacity to use IEC material, it also reflects on BMOs lack of initiative to ensure smooth functioning of sub centers. All these are issues that could be solved with bare minimum intervention and could well become part of supportive supervision.

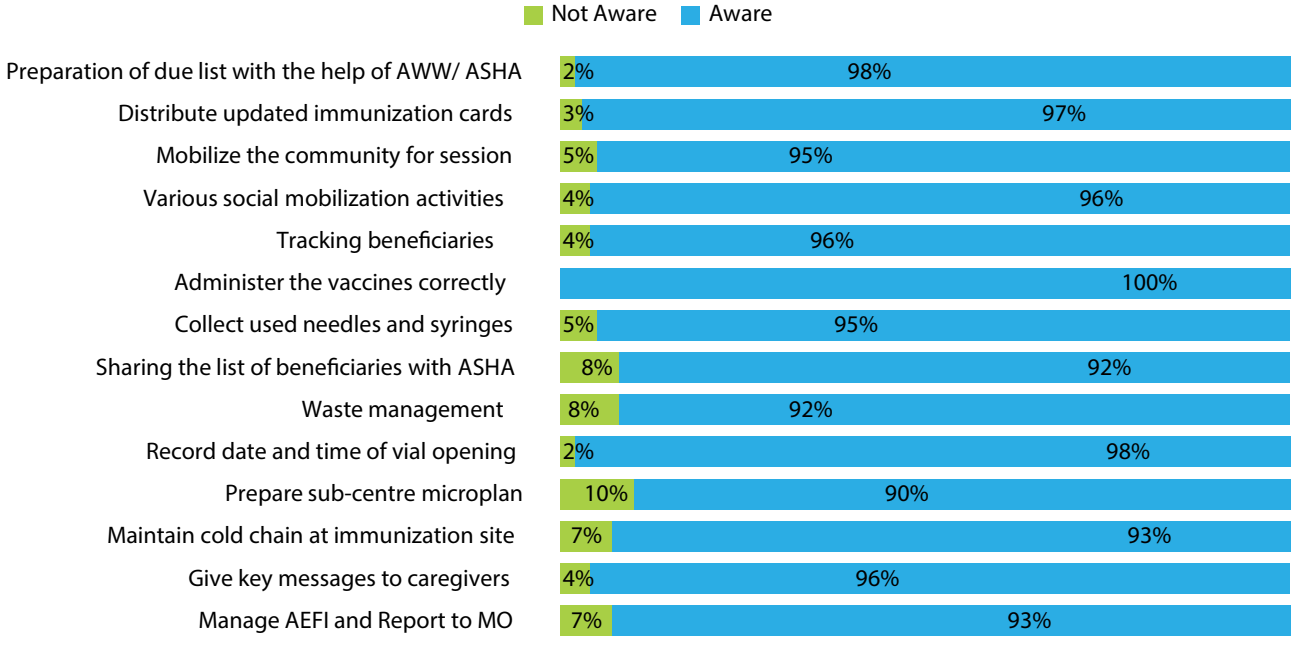
Front line Workers Level

ANMs, ASHAs, and Aanganwadi Workers are responsible for execution of UIP at the grassroots level. For the purpose of study, a quantitative survey was deployed for ANMs. FGDs were conducted with ANMs, ASHAs and Aanganwadi Workers.

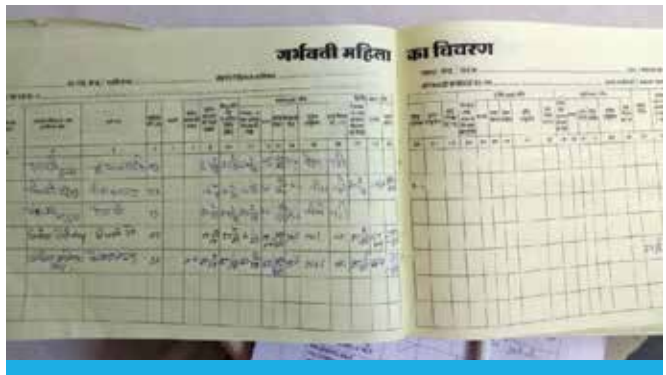
ANMs were found to be highly aware of their roles. Of the 14 listed roles, administering vaccine using correct technique was identified as a role by 100% respondents. Except for preparing micro plan for sub center, which was recalled by 90% ANMs, recall% for remaining roles ranged between 92 and 98%.

Picture 3-2: ANMs in Tamil Nadu

Figure 3-5: Awareness of roles and responsibilities of ANM



During FGDs with ANMs, roles other than those listed were also mentioned. Supervision of ASHAs, calculating vaccine requirements on the basis of due list and submitting it to the cold chain point, carrying vaccines from cold chain point and leaving it at cold chain point in evening, were other roles that were mentioned by ANMs. Further there was a general consensus that ANMs were overburdened and that apart from immunisation specific work they were required to undertake a lot of other responsibilities like updation and

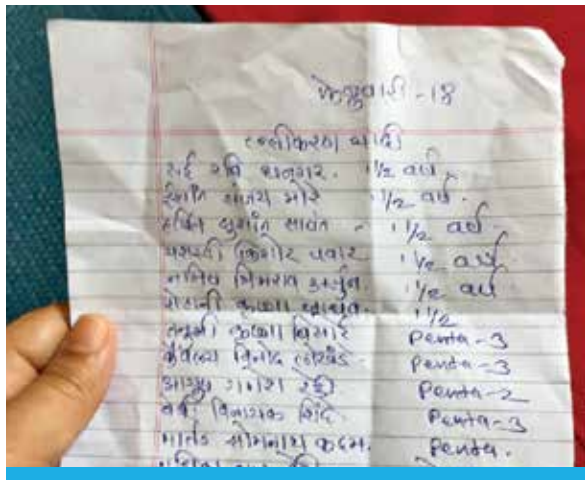


Picture 3-3: ANC and PNC Register filled by ANM

maintenance of RCH, MCH register, Birth and death register, convening meetings of committees – VHND, role in other national health Programs and NHM fund management were cited as roles other than that of immunization.

It was interesting to note that, waste management, cold chain maintenance that were categorised as important roles were recalled only after probing during FGDs.

Preparation of due list emerged as the most significant and most frequently cited role by ASHAs. It indicates that while preparation of due list is ANM's responsibility; it has been delegated to ASHAs. ASHAs under the guidance and supervision of ANMs prepare the due list and submit it to ANMs for further action. Additionally, community mobilisation also was cited by most ASHAs as their role. In the discussion with ASHAs it emerged that apart from undertaking their prescribed work, they also help ANMs by sharing some responsibilities of ANMs such as administering oral dose to children on immunisation day, help maintain counter foil, give four messages to caretakers and in some cases also help with waste segregation. This was found to be true when validated with ANMs during FGDs.



Picture 3-4: Due list shared by ASHA during one of the RI observation session

While AWWs could list most of their roles and responsibilities, they also shared that their role in immunisation has reduced drastically since on boarding of ASHAs. They further added that the only role that they played was that of community mobilisation. For community mobilisation too, they performed a lesser active role of supporting ANMs and ASHAs in reaching out to families who were in vicinity of their centre or motivating women that were coming to centre for availing other services.

In Tamil Nadu, UHN and VHN were found in place of ANMs, performing activities of community mobilization.

Table 5: Key takeaways: awareness of roles and responsibilities of different stakeholders

- ***High Awareness of Roles and Responsibilities at National, State and District levels***

  Most stakeholders at the National, State and District levels were well aware of their role vis-à-vis immunization. Instances of delegation of work to the immediate lower level due to multiple tasks handled at each level were noted in all states. The delegation of work and its execution happened with proper debriefing and guidance.
- ***Moderate Awareness among MOs Regarding Roles and Responsibilities***

  Most MOs were unsure of their duties outside of guiding and supervising vaccine and CCH at ILR point. For all other mandated responsibilities, most MOs averaged below 70% in terms of awareness. MOs in several states commented that this was as a result of multiple program commitments.
- ***High Awareness of Roles and Responsibilities in ANMs and ASHAs***

  ANMs were found to be aware of their various roles and responsibilities. Most of the roles were recalled by high % of ANMs except for that related to preparation of micro plans. Similarly, ASHAs were also found to be aware of their role in the immunization program. They recalled community mobilization and preparation of due list as their major responsibilities. .

- ***IEC Material Development responsibility cause for ambiguity***

  A major gap in the UIP implementation was found in the IEC component. IEC officers at both state and district levels were found to be unsure about their responsibilities relating to developing IEC strategy with respect to immunization in particular. They suggested more clear and crisp role definition for them in immunization.

- ***Limited involvement of AWWs***

  AWWs were aware of their roles in mobilizing community and providing a space for vaccination when necessary. Beyond these roles, most AWWs cited there were no particular mandated responsibilities they were aware of, although they expressed the desire for greater involvement in the immunization related activities.

3.3.2 Knowledge of Various Stakeholders

Execution of the immunization program involves significant technical knowledge of vaccines, schedules, indications, contraindications, adverse effects, and accurate techniques. Lack of knowledge may result in inaccurate dose or vaccine administration resulting in dangerous consequences, including death. Introduction of new vaccines necessitates incorporation of new knowledge. Hence the capacity of different stakeholders to effectively conduct their respective roles and responsibilities is at the core of any trainings need assessment.

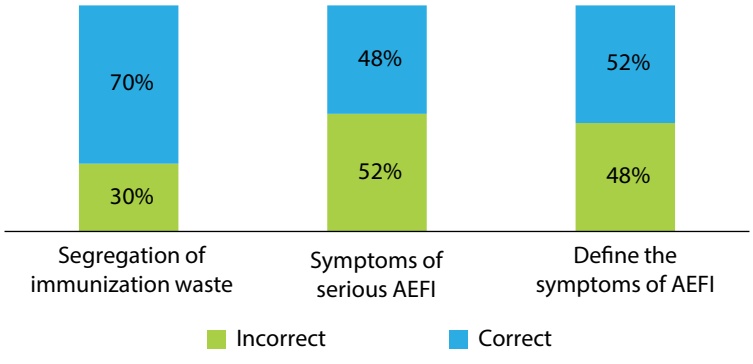
Knowledge translates into practice and competency. In order to understand core areas of training needs, the study focused on assessing the knowledge of different stakeholders involved in the UIP. During the course of the study, levels of knowledge of the **MOs** and **ANMs** were assessed using a mixed methodology approach. The analysis of data collected and key findings regarding knowledge of respondents at different levels are provided below.

Block Level

For the purpose of assessing knowledge of MOs/ BMOs, the survey included checking their knowledge on standard definition of AEFI and its serious cases, and segregation of medical waste.

70% MOs surveyed, correctly answered all questions related to waste segregation and its management. However, less than half of the **MOs/ BMOs** could correctly answer questions relating to **AEFI which included the definition and symptoms**. **It can be inferred that both waste management and AEFI are areas on which technical information needs to be provided to MOs/ BMOs.** It becomes all the more important for them to be equipped with correct technical information since they are the first point of contact for ANMs in case of any confusion.

Figure 3-6: Knowledge of MOs/ BMOs



Front Line Worker Level

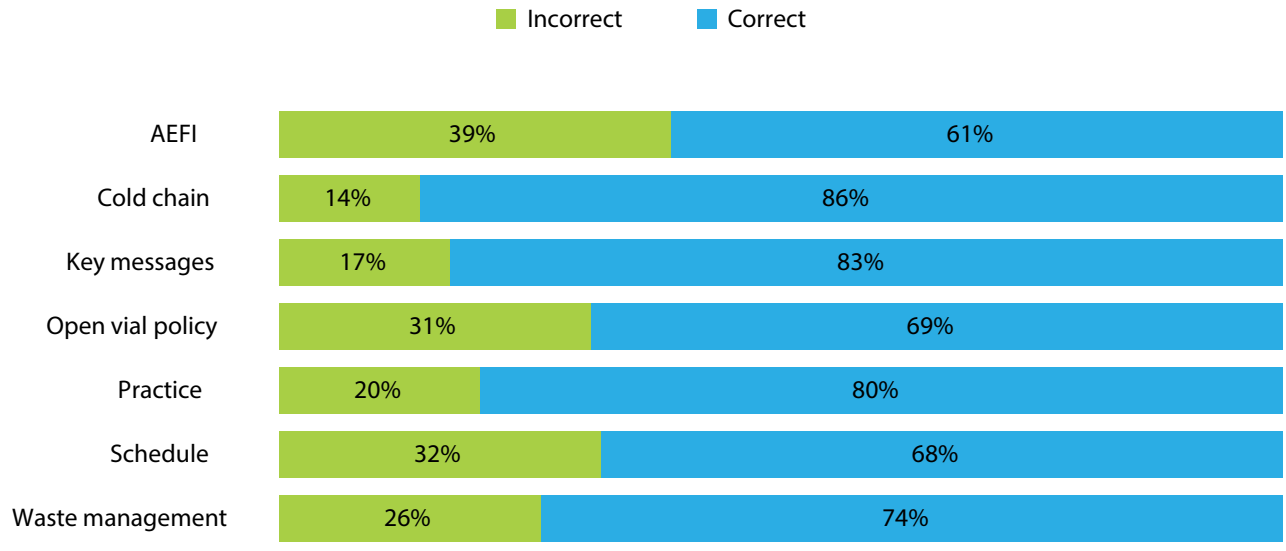
At the field level, ANMs are responsible for much of the immunization related tasks. For the purpose of assessing the knowledge of ANMs, a comprehensive questionnaire was administered to all ANMs in the 5 survey states, covering seven broad components pertaining to immunization:

- Cold chain management
- Key messages
- Immunization practices
- Waste management
- Open vial policy
- Immunization schedule
- AEFI

Approximately 86% ANMs could correctly answer questions related to **cold chain management,** followed by questions on **key messages – 83%** and **immunization practices – 80%.** The least% of correct answers was received for questions related to AEFI. Around 61% ANMs provided correct answers on AEFI. Further 68% ANMs gave correct answers for questions related to immunization schedule while 69% had correct information on question related to **open vial policy.**

None of the 23 questions was answered correctly by all respondents. Question on AEFI received the maximum wrong answers whereas question on immunization schedule received highest number correct answers. Having incorrect information on basic issues like immunization schedule, waste management and AEFI presents a situation of concern and call for organizing trainings on a more regular basis. **It was observed that most of the ANMs that were met as part of the study had not attended training on routine immunization. Those who had attended it had not undergone any refresher training.** While one-day training on new vaccines provided ANMs with technical information on it, other aspects such as information on full immunization schedule, importance of giving four key messages, usage of IEC material remained unaddressed.

Figure 3-7: Knowledge of ANMs



The following table provides % of correct response for each question bucketed under components of waste management, open vial policy, immunization schedule and AEFI.

Table 6: Percentage of correct responses of ANMs

Aspect	Question	Response (%)	Average
Schedule	If a child comes for vaccination for the first time at 16 months of age, what should be given?	65	**68**
	A child who is 3 years old has already received BCG, OPV-3, IPV-2, Penta-3, only, then what vaccines should be given?	61	
	Till what age we can give DPT?	46	
	What is the minimum interval between OPV 3 & booster doses of OPV?	32	
	A child received BCG, Penta 1 and OPV1 at the age of 1 and half months. Then comes again after a gap of 6 months. Which vaccines will you give?	73	
	Which disease is prevented by BCG vaccination?	96	
	Pentavalent Vaccine prevent from what all diseases?	81	
	What is the dose of Vitamin A solution for a child above 1yr of age?	86	
AEFI	What will you do if a child comes to you with mild fever, pain and swelling at the site of injection?	90	**61**
	What all are serious AEFI cases that the ANM should immediately report to Medical Officer/ District Immunization officer?	33	
Waste Management	How is the immunization waste segregated?	74	**74**
Open Vial Policy	Is Open Vial policy applicable for ROTA virus vaccine?	69	**69**

In all five states while responding to questions on schedule and AEFI, ANMs seemed less confident. While the responses to questions on four messages, route and site of administration and cold chain management were on finger tips, they took time to respond to questions on schedule and AEFI. **Most of them stated that since new vaccines have been added to the schedule, they got confused while providing answers.** One of the ANMs in Odisha stated ***"vaise toh hume yaad rehta hai lekin nayee vaccine add hone se confusion ho jaati hai"*** (we usually remember the schedule however due to addition in it because of new vaccines we get confused). **When enquired about who was their first point of contact in case of confusion, they stated it to be their supervisor or MO. Important to note is that there exists a WhatsApp group at each block with BMO, ANM supervisors and ANMs as part of that group.** The group however is reported to be only used for communicating about schedule of meetings to be held at block. It has been never used for clarifying doubts or any other similar activity.

Further ANMs reported to have IEC material on immunization. These mostly include posters and brochures. ANMs also reported that IEC was distributed to them as part of the trainings on new vaccine. These however were not used by them. When probed for the reason it was stated that they were not guided on how to use the IEC. During visit to a sub-centre in Himachal Pradesh, few posters were found lying in the corner. There was one poster on the wall which was covered by the calendar. It was felt that for ANM, calendar was more useful than the poster. This may indicate a lack of understanding on importance of using IEC material in day to day work.

Further no other job aids in form of instruction manuals, SOPs, flip books were reported to be in possession of ANMs.

Table 7: Key takeaways: knowledge of various stakeholders

Lack of Technical Information at Block and Field Level
A need for training MOs, ANMs and ASHAs on technical topics has clearly been identified during the course of the study. As mentioned earlier some of the technical questions have been unanswered by all respondents. While MOs could relatively fare well on waste management; questions on AEFI were answered correctly only by half of the respondents. Similar is the case of ANMs. Approximately 61% and 68% only could provide correct answers to questions regarding AEFI and Immunization schedule respectively.
Lack of Access to Reference Material and Reliance on Peers for Knowledge
In certain cases, it was observed that immunization schedule related manuals and other reference material was not in possession of ANMs at the time of immunization.

3.3.3 Competency of Various Stakeholders

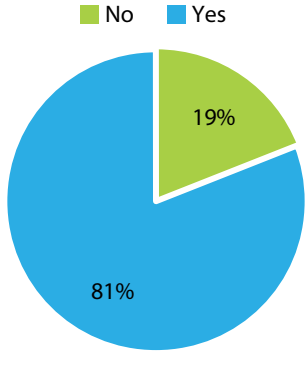
Competency in this context of this study is defined as the execution of UIP as per the National guidelines by addressing all the components involved in UIP. Translation of knowledge into practice is crucial for the success of the UIP. Competencies of **MOs/BMOs, ANMs** and **CCHs** at block and field levels were assessed by directly observing the monitoring, reporting, record keeping, and immunization practices. At the level of practice, competency is a combination of awareness and knowledge of carrying out roles and responsibilities. To understand the training and capacity building needs, competency of stakeholders needs to be assessed.

Competency of MOs/ BMOs

In order to understand competency of MOs/ BMOs, the study assessed completeness of the **PHC micro-plan,** an essential component of immunization and one of the significant responsibilities of the BMOs. For the assessment, completeness of micro-plans was judged on the basis of whether the plan included the 5 essential components namely,

- Beneficiary estimation
- Roster of ANMs
- Supervision plan
- AVD plan
- Communication plan

Figure 3-8: PHCs that have a microplan



It was observed that 81% of the PHCs surveyed had microplans. The quality of the microplans left a lot to be desired. **Out of the PHCs with microplans, only 36% PHCs had microplans with all 5 components completed.**

Further the MOs/ BMOs were asked if they undertake any monitoring visits to sub centers. Most of the MOs/ BMOs that were met gave an affirmative response. When asked about what tasks they undertake while on the visit they stated checking various registers and accuracy of data. Interactions with ANMs confirmed MOs/ BMOs' visits to sub center albeit not on a regular basis.

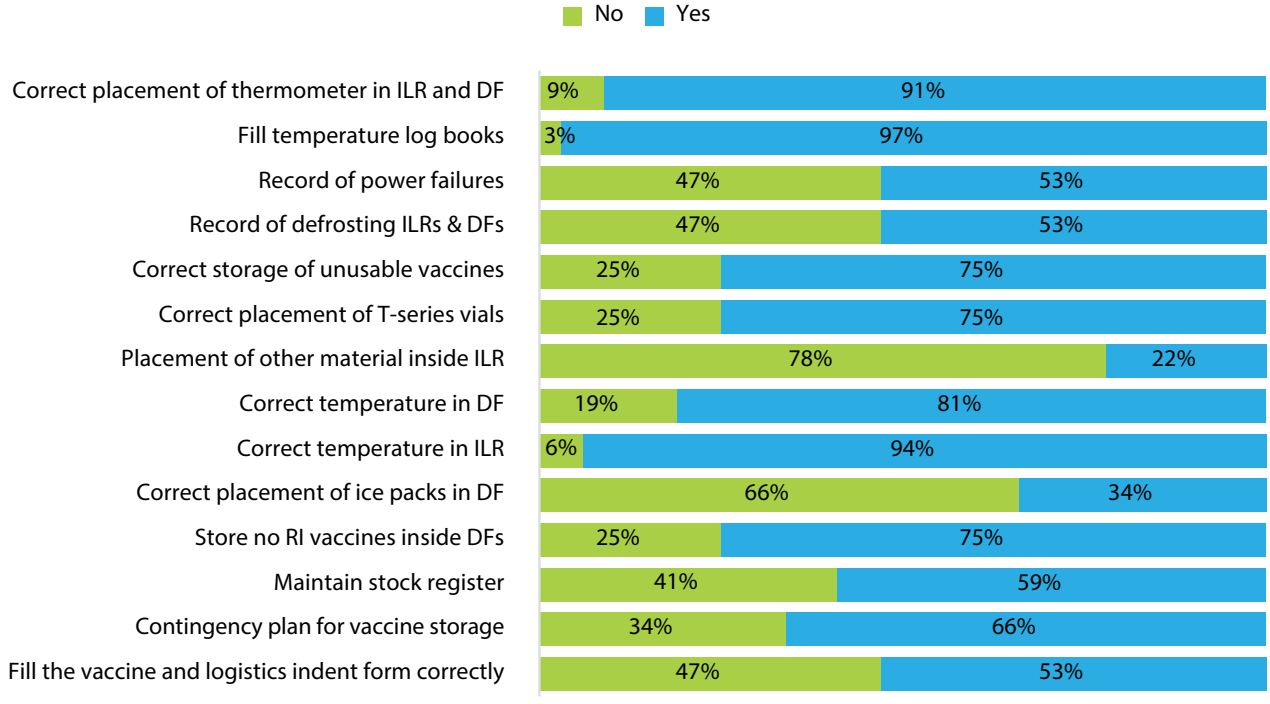
Further MOs/ BMOs also reported to be checking the micro plans and providing suggestions to improve it. While this is being undertaken it is not getting translated into correct practice. As mentioned above of the block hospitals visited only 36% had complete microplans.

It was evident through various discussions with MOs/ BMOs and ANMs that the concept of monitoring visits and supportive supervision is restricted only to visits which include checking data for its accuracy. However, most of the MOs/ BMOs interviewed responded that they could hardly visit any immunization session in the last few months.

Competency of CCHs

In order to assess the competency of CCHs, **cold chain points** across the study blocks were surveyed on the basis of their practices regarding **record keeping, maintenance of ILRs and deep freezer temperatures, storage and distribution of vaccines.**

Figure 3-9: Status of competency of cold chain handlers



Of all the cold chain points that were visited 97% were maintaining temperature log books followed by 94% which maintained the temperature within acceptable range, and 91% where a functional thermometer was placed in the ILRs. However, the icepacks were placed properly only in 34% of the DFs and records of power failure and defrosting were there only in 53% cold chain points. Lack of training on cold chain handling was reflected as the deep freezers in most cases did not have the ice packs organized in a crisscross manner. They were kept in heaps which hampered the circulation of air so as to chill the ice packs effectively.

Picture 3-5: Improper stacking of icepacks in the DF

Observed Practices of ANMs

Observation of **RI sessions** was conducted in every block surveyed. Overall 34 sessions were observed.

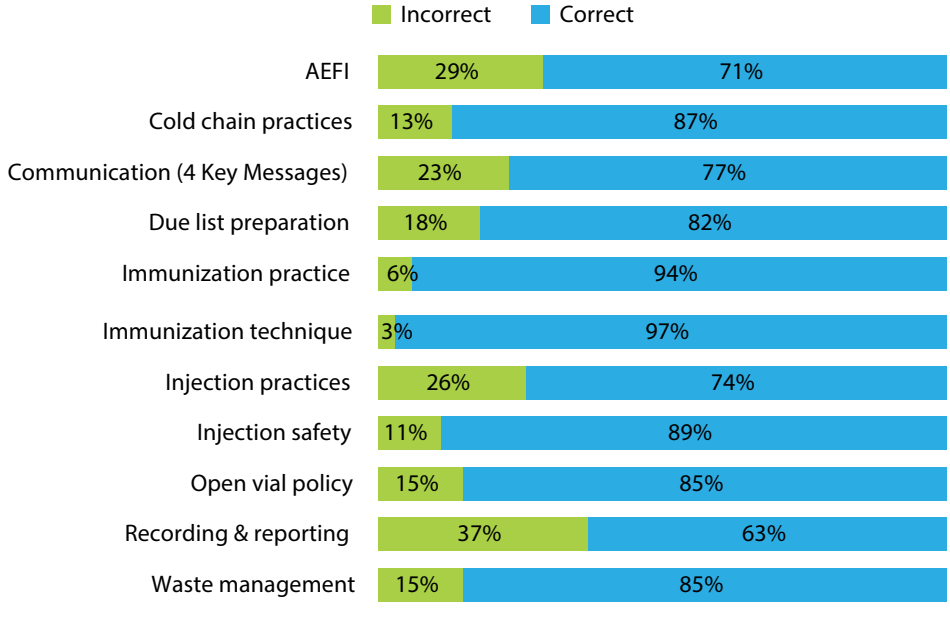
Using a comprehensive observation sheet, the findings were categorized into **9 broad heads** which are essential to the practices of ANMs at RI sites.

- Waste Management
- Recording and Reporting
- Open Vial Policy
- Injection Safety
- Immunization Practice and Techniques
- Due- list Perpetration
- Communication
- Cold Chain Practices
- AEFI

The observations revealed that around 90% of RI sites, ANMs were observing correct techniques in **administrating vaccines.** Around 89% ensured the **safety of injections** and 87% correctly **observed cold chain practices.** However, there is significant scope of improvement in **reporting and recording practice,** with only 63% ANMs observed to be adhering to correct practice. This was followed by the **AEFI** related practices with 71% ANMs adhering to it correctly.

Picture 3-6: Open Vial policy as observed during an immunization session

Figure 3-10: Practices of ANMs during RI session



Immunization sessions were observed in all states. The objective was to also see if desired practices are being followed or not. In all the states giving four key messages and informing the caretaker/parent about the vaccine and its repercussion is not being taken seriously. In all states deficiency regarding these two responsibilities had been observed. When enquired about why these practices are not followed, ANMs stated being overburdened as the reason. Similarly, waste management was not followed properly. Waste was neither segregated nor disposed as per the guidelines.

Relationship between Awareness, Knowledge, and Practices of ANMs

Gap in awareness, knowledge and practices has been observed. For instance, 96% of ANMs were aware about their roles and responsibilities regarding giving 4 key messages, 83 percent had knowledge of 4 key messages, and only 77% actually gave key messages during immunization sessions.

However, the knowledge in waste management was 74% while practicing it was 85%. This upon probing revealed that there were a number of ANMs who 'didn't have the knowledge', actually could not articulate the answer in right way on waste management but were practicing as per instructions or seeing their peers. Therefore, the percentage in "practice" is higher than "knowledge about it".

Table 8: Relationship between awareness of role, knowledge and practice

Role	Awareness about it (n = 297)	Knowledge about it (n=297)	Correct Practice (n = 34)*
Waste Management	94%	74%	85%
Key Messages	96%	83%	77%
Cold Chain	93%	86%	87%

Table 9: Key takeaways: knowledge & practice of various stakeholders

- ***Lack of proper monitoring systems at the block level***

  Structured monitoring practice is very rare. Most MOs/ BMOs cited preoccupation with multiple responsibilities in addition to UIP and conducted unscheduled monitoring visits once in a while. This was also attributed to logistical and geographical constraints.

- ***Storage and Record Keeping; Low knowledge of consequences of incorrect practices are gaps in Cold Chain Management remain***

  The findings were indicative of lack of understanding of the importance of record keeping in general. This was also true for maintenance of stock register which was correctly maintained in only 59% CCPs. In small number of cases, non-authorized medical products were also found in ILRs

- ***Reliance on ASHAs for Record updation at RI Sites***

  Gap areas at RI were observed to be record updation and reporting. While most ANMs were aware of this gap, they attributed it to a number of reasons including logistics and work-load. In most states, it was found that due to workload during RI sessions, ANMs relied upon ASHAs for oral vaccine administration and assisting in the filling of RCH cards and registers. In HP and Maharashtra, it was observed that ANMs maintained an independent register, information from which was updated into the RCH register later.

- ***Inadequate practice in the context of AEFI and Communication***

  With regard to communication, it was observed that ANMs did not actively and properly provide 4 key messages and information related to AEFI to parents and relied on ASHAs to do so without supervising whether it was being conducted properly.

* Practice was observed in 34 sessions. Hence, n is 34 in Practice

3.4 Technology exposure and preferred sources for capacity buildings and trainings

It is essential to understand the exposure and preference of stakeholders in using different technology products. This assessment can help to understand preferred mode of trainings and capacity building. With the introduction of ANMOL tablets and growing emphasis on digital record keeping, the study assesses technology exposure of block and field stakeholders, to understand their preferred mode of training.

The section on technology, gathered information regarding the use of mobile phones, the type of phone being used, and the level of comfort the ANMs and BMOs had with using different features and functions of the smart phone. The usage of computers, familiarity with basic software packages such as MS office and the preferred mode to receive RI trainings (Skill stations/ demos; classroom sessions; remotely using VC; or through online training modules) were also asked.

3.4.1 Mobile Phone Usage

MOs/ BMOs: All respondents reported using a mobile phone. Among mobile phone users, 96% of the BMOs were using a smart phone.

ANMs: All respondents - 99.7% reported using mobile phones. Of those using mobile phones 82% ANMs reported using smartphones.

3.4.2 Familiarity with Usage/Features of Smart-phones

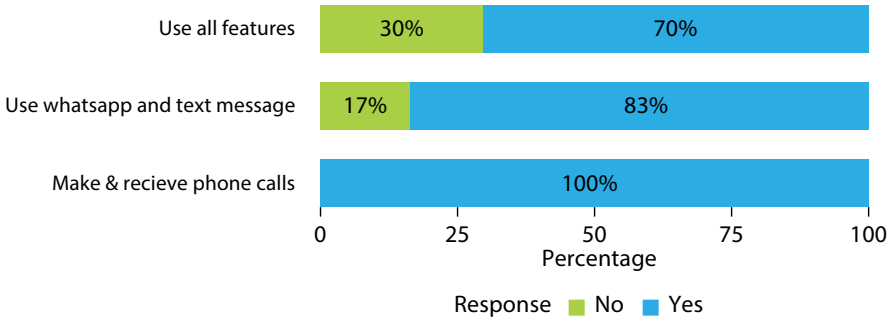
Since smartphones can perform umpteen numbers of functions depending upon the type, make and software, these functions were bracketed into three level - making and receiving phone calls, comfort using WhatsApp and text messaging, and all other features including using you tube, app download and using internet on phone.

Approximately 96% **MOs** surveyed were found to be comfortable using all features of a smart phone. This included making and receiving calls and usage of data-based features like WhatsApp, emails, and online platforms.

All **ANMs** surveyed were comfortable making and **receiving phone calls** using smartphones. Of the **ANMs** having smart phones, 83.5% reported being comfortable using **WhatsApp** and **text messaging**. It was shared that at each block there exists a WhatsApp group. The group is created by BMO and all ANMs and their supervisors are part of it. The group currently is used for communicating about various meetings that ANMs are supposed to attend. Other than that, no structured utility of WhatsApp Group was reported.

With regards to the usage of **other smart phone features**, particularly data related like emails, internet surfing and mobile based applications; 70% **ANMs** having smartphones could report ease.

Figure 3-11: ANM'S comfort levels with functions of smart phone



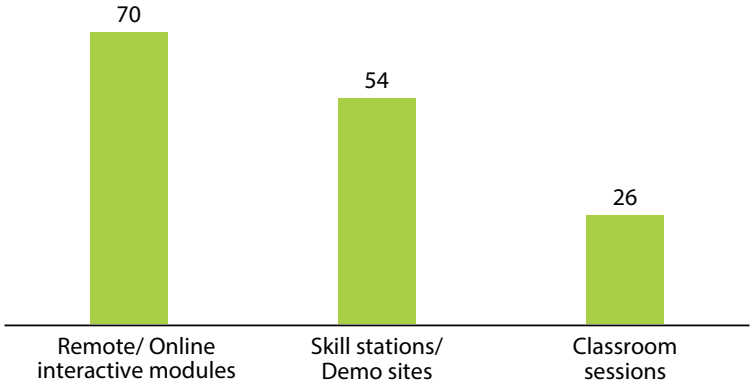
3.4.3 Preferred Mode of Training

In order to better understand the training methodology options, it is essential to understand stakeholder perceptions of the modes of training. For the purpose of understanding preferred mode of trainings, stakeholders were surveyed using both quantitative and qualitative questions.

MOs

The data reveals that majority of MOs stated online interractive modules as preferred mode of receiving training. This was followed by skill stations and classroom trainings.

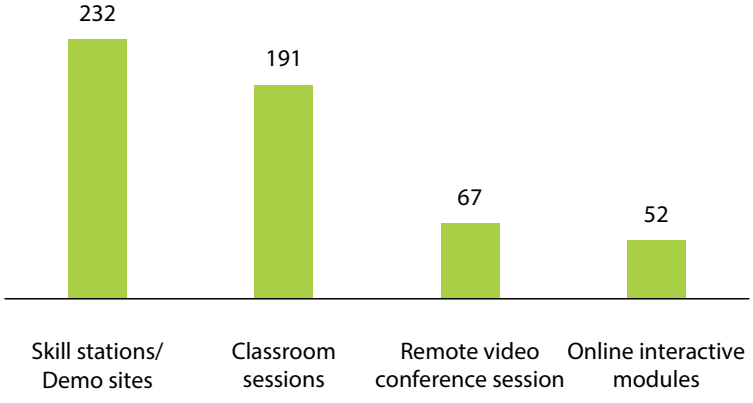
Figure 3-12: MOs preferred mode of receiving training



ANMs

The question on preferred mode of training required the ANMs to choose between the four options given in the questionnaire. Given that it was a multiple-choice question, one or more than one choices were indicated by the respondents. The graph below (3-13) depicts the preferences:

Figure 3-13: Distribution of preferred mode of training for ANM (N=297)



Skill stations and classroom sessions had topped the chart in terms of being preferred mode of training. A probe into reasons for which classroom sessions are preferred led to the following understanding:

- For most ANMs class room training are a break from their routine work where apart from meeting the trainers and getting trained they also meet their counter parts from other sub centers. It was informed that it is when they converse informally with each other and also discuss the challenges that they faced in the field and other wise.
- Most of the ANMs have not been exposed to online/self-learning mode. They have been trained for years through the traditional method of class room teaching. It is because of lack of exposure to newer mode/method and the associated doubts that ANMs were apprehensive about these methods.

3.4.4 Preferred Tool for Online Module

Online- based modules can provide a wide range of functions w.r.t capacity building. Whether it is knowledge or practice related, online modules are flexible and can incorporate new knowledge material. ANMs were surveyed on which was the preferred tool for referring to online- based modules.

The preference of smartphones **as a medium was found to be** significantly high **with 44% reporting it as their preference.** Almost equal % of ANMs (29% and 27%) **reported tablets and computers as preferred choice respectively.**

State-wise differences were observed in this case. More respondents from Tamil Nadu and Maharashtra reported to be comfortable with computers/laptops.

Figure 3-14: ANMs preferred device for online module

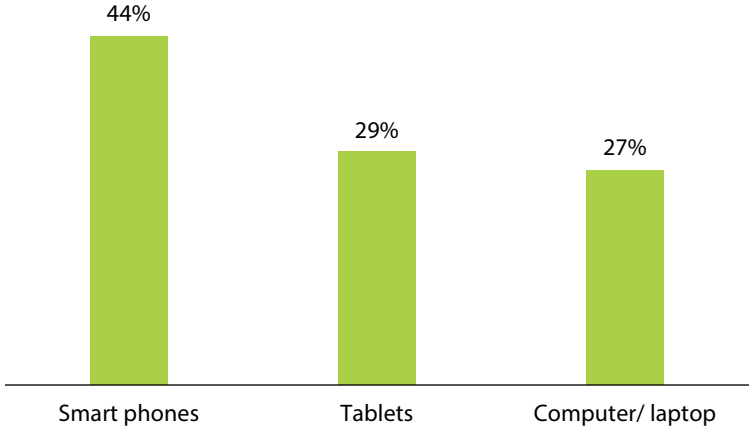


Table 10: Key takeaways: technology exposure & preferred modes for capacity development

- **Strong familiarity with Smartphones and its features**
  The BMOs were observed to use smartphones along with a large majority of ANMs (81.8%). Almost all BMOs (96%) were found to be comfortable using all features of smartphones including data- service features like WhatsApp, Emails and Applications. Most ANMs (83.5%) reported that they were familiar with using WhatsApp.
- **Strong preference at Block and Field level for Demo-sites to support Classroom trainings**
  Most MOs indicated remote/online interactive modules as the preferred mode of receiving training. However, majority of ANMs preferred skill stations and demo sites followed by Classroom sessions.

  This preference of ANMs is also a result of lack of exposure to online/self-learning mode of training over the years. ANMs expressed that a combination of classroom mode and practical trainings would be preferable. Stakeholders felt that classroom trainings, which impart the core theoretical knowledge, should necessarily be followed by practical demonstrations to bridge the gap between knowledge and practice.
- ***Higher preference of handheld digital tools for online modules for ANMs***
  As regard preferred tool for online modules, smartphones were reported to be preferred by 44% ANMs followed by tablets indicating a higher preference for handheld digital tools rather than computers.

Section-4

Capacity Building Challenges in the Context of Immunization

4. Capacity Building Challenges in the Context of Immunization

In order to understand capacity building and training needs of different stakeholders involved in the UIP, there is a need to clearly understand the existing challenges and constraints at different levels of program implementation. During interactions at National, State, District, Block and Field level, several challenges emerged which limit the coverage and quality of the immunization initiatives in the country. The challenges reported stem from a number of reasons which may be broadly categorized under **monitoring and coordination, logistics and training infrastructure, capacity building modules, methodology and modes, knowledge, attitude and practice, and community related (demand side).**

Another broad challenge reported across different levels was **prioritization of Immunization.** This was attributable to clubbing of Immunization with other RCH programs for the purpose of administration and management, coordination and reporting, and financial decision making. However, this has resulted in a number of administrative challenges particularly at the decision-making levels of State and District, and implementation and reporting related challenges at the community interface level: Block and Field.

For the purpose of the study, both qualitative and quantitative tools were applied to capture Knowledge, Attitude and Practice related constraints and challenges, alongside other significant concerns.

The following categories describe the observations from different levels of stakeholders:

4.1 Monitoring, Coordination and Feedback Related Challenges

- **Lack of a systematic monitoring mechanism -** None of the states surveyed had monitoring mechanism for the trainings conducted. Also, data received from various levels in the form of **feedback, is not analyzed** or **shared** further to feed in to developing training related knowledge material.
- There is a **lack of a uniform data collection mechanism** and a **central database** to track training gaps in terms of trained vs. untrained stakeholders. At the lower levels, in particular Block and filed level, data is collected and collated using manual techniques without standardization and data is not shared at the national level by states.
- It was observed that there is a **lack of inter and intra-departmental coordination** particularly in terms of the development of training of modules. This **leads to a degree of replication in the training material developed.** For example, in Odisha the SPM/IEC officer was not aware of the training material already developed by the SIHFW.
- **Lack of coordination amongst district and state level machinery -** In Odisha, it was observed that the DPHOs had recently been transferred to the districts and had not been informed about the details of their districts. Similarly, in Himachal Pradesh, the District IEC officers of Shimla and Solan were not aware of their roles with regards to immunization and indicated the lack of coordination between State IEC cell and District cell.

4.2 Logistics and Training Infrastructure Related Challenges

- There is a **lack of a functional government infrastructure** enabling the government machinery to fully conduct and facilitate thorough trainings, capacity building needs across different levels. As a result, many of the training needs of staff at different levels are addressed by different immunization partners, while regular capacity building initiatives through a systematic government channel remains weak and unorganized.
- **Mismanagement of limited human resources.** In all states surveyed, respondents reported that there is **reluctance in sending human resources for training.** This is due to **dearth of human resources,**

as many are involved in several health programs. There is **no pool of trainers.** There is also a **constant change in roles, retirements and transfers of master trainers** limits availability of full time trainers. The **involvement of SIHFW,** medical colleges and other training centers is either **weak or inadequate.**

- **Logistical constraints for conducting trainings and immunization sessions.** Many outreach sessions, particularly in difficult geographical terrains in Himachal Pradesh, Odisha, and Maharashtra, were found to **lack proper space and facilities** to conduct immunization sessions. In many RI sessions, there was **shortage or non-availability of items** such as needle cutters, paracetamols, red bags for waste segregation, and IPV/DPT vials. In Himachal Pradesh in particular, there was **absence of an alternative vaccine delivery mechanism** due to its tortuous geography. In such cases, health workers would collect vaccines, conduct session, update records, and return vials to the health center.
- **Complicated reporting and recording systems leading to increase in workload.** At many sessions, it was observed that an alternative register pertaining only to immunization details was maintained (and not other health programs), information from which was updated into the RCH register (both physical and online) at a later time. This resulted in increased workload for the ANMs. Additionally, most ANMs surveyed were **not comfortable** using the features of **computers** and relied on data entry operators, who were involved in other tasks simultaneously

4.3 Training Quality and Frequency Related Challenges

- **Centralized training modules.** The training modules are generally developed at the National level. Most of the times there is no formal process of training needs assessment, but it is done through an extensive consultative process of the immunization partners working in the field for many years. Therefore, some states were of the opinion that there should be more scope of including the state/ situation specific needs in the modules.
- It was also observed that comprehensive RI trainings or refreshers for Field level staff are not conducted on regular basis and sometimes there is a big gap of many years before they get RI training.
- While there is a comprehensive list of capacity building initiatives with designated modules and stakeholder focus, **trainings are not conducted on a regular basis.** Stakeholders, particularly at the sub-field level like ANMs, have not attended any RI trainings in the last 3 years and have only attended trainings on new vaccines.
- **Limited or insufficient budget.** It was observed that the budget for conducting trainings was insufficient at the block level. This resulted in, firstly, a batch size in training sessions from 50 to 60 participants, making it difficult for both the trainers and trainees. Secondly, trainings on immunization are designed for 2-3 days, given the module and topics covered, but are covered within a day at the field level. A corollary was that the language used during training was occasionally technical, not elaborated to make it relevant for stakeholders working at community level.

4.4 Knowledge, Attitude and Practice Related Challenges

- **Knowledge gaps in critical areas.** It was found that BMOs lacked information on critical aspects such as **micro-planning, AEFI, Communication, data management and cold-chain handling.** This stemmed from a number of reasons including **lack of trainings- routine and refresher, regular transfers** and **involvement in other health-programs and responsibilities.** Of the BMOs surveyed, micro-planning emerged as the most neglected area. Only 16 out of the 30 medical officers could recall micro-planning as their responsibility, and almost all PHC micro-plans were found to be incomplete. Of the knowledge related questions for ANMs, **AEFI, Waste management and Vaccination Schedule related topics** were found to be areas of concern. A lack of technical knowledge was observed among ANMs on these subjects, whereas there was general lack of confidence in handling questions relating to the immunization schedule.

- **Limited focus on supervision and monitoring of immunization sessions.** It was observed that MOs/ BMOs had a **laid back attitude towards supervision and monitoring** of immunization sessions, CC points and updating of records. For example, in Himachal Pradesh, most block cold chain handlers were found to lack proper knowledge of placement of vaccines in the ILRs. In almost all CCPs observed, stacking of ice packs in deep freezer was not done despite the availability of relevant reference IEC material displayed at the site itself. This was despite the regular presence of medical officer at the site.
- **Lack of ownership of tasks and lackadaisical attitude across different stakeholders.** Almost all ANMs surveyed were aware of their responsibilities relating to vaccination, giving key messages, waste segregation and updating of RCH registers. However, it was observed that these responsibilities were undertaken in a **mundane manner** particularly while giving **4 key messages after immunization, waste segregation and updating of MCH cards and RCH registers.** This indicated a **lack of ownership** in the overall process of immunization. Similarly, it was observed during immunization sessions, that there was a **delegation of certain tasks to ASHAs.** This included the administration of oral vaccination and updating of MCH cards. While this could be attributed to a lack of facilities and man-power, this posed a possibility of error given that vaccine administration is not a part of the mandate of ASHAs, and training on updating of records is not given to ASHAs.

Section-5

Discussion

5. Discussion

Immunization is the prime focus area of all child survival programs in any country, and India aims to achieve full immunization coverage by 2020 through "Mission Indradhanush". Therefore, there is a need to assess constantly the activities in the Universal Immunization Program (UIP) and upgrade or make necessary changes to achieve the set target. Training of staff at various levels involved in immunization, is one of the most important components, which helps in achieving the goal of eradicating vaccine preventable diseases in children. This involves trainings on various administrative, technical and practice-related components on immunization. The current method used is a cascade-based method of training, which includes routine immunizations, introduction of new vaccines, or specific technology, and refresher trainings.

The findings in this study are based on qualitative data involving in-depth interviews (IDIs) with various stakeholders and focused group discussions (FGDs) with the frontline health workers, and also observation of immunization sessions in the field. This discussion culminates from the observations in the field, in addition to the data generated through the study conducted meticulously by the team.

At present, the trainings offered to the various stakeholders in routine immunization, are mainly classroom trainings, with field visits, and participatory or group exercises with the later mainly at the grassroot level. However, the major opportunity is that, these trainings could be upgraded or modified, based on feedback forms received at the time of training. This aspect requires serious consideration of careful monitoring; presently, in the absence of this the current status, or the cumulative progress over 3 years seems to be unknown for most of the trainings imparted.

It is imperative to know what requires improvement, and how much of the training imparted was actually useful. One of the key findings of the present indicates that the pre and post-test feedback forms submitted by the participants at the time of training have not been analyzed carefully. Such analysis and monitoring of training could help to assess the effectiveness of the training, and accordingly review the training content or process for the future. This has been one of the common major finding across the states covered in this study.

The distribution of trainings indicates implementation of trainings at various levels - from national to block - which could eventually lead to duplication and mismanagement; this may be remedied through better co-ordination and improved planning. We received feedback that the duration of the trainings is perceived as short. Therefore, to impart comprehensive knowledge and making the participants aware of leading practices, additional programs ('medium', and occasionally 'long' ones) may be considered.

Another significant finding through the field visit was the need for frequent refresher courses, where the willingness to adopt technology through tele-media – such as smartphones - as a tool, was also voiced by most stakeholders in UIP. Still, it is worth emphasizing that, though the option of technology was voiced, a combination of classroom sessions with skill stations, field visits and group or participatory exercises was the most preferred form of training by most stakeholders.

To sum up, the training methodology of a combination method with durations of medium (and occasional long term) trainings, followed by frequent refresher courses at fixed intervals, to reinforce newer practices, was what emerged as our key finding across the five states where the study was conducted.

The following section of the Discussion addresses the key issues specifically for the Block level, followed by District, State and National levels.

Block level

The assessment of trainers, and training received by MOs, CCHs and ANMs, revealed that all of them, irrespective of intervention and non-intervention districts, were generally satisfied with the quality of trainers of the program. Further, the MOs from case/intervention districts gave better rankings to training methodology and logistics, compared to Control/non-intervention districts. However, 30% of MOs voiced that training methodologies often stressed more on theory, and used less audio-visual content, or even practical or group-based exercises.

Interviews also revealed that some of the MOs in the PHCs of Maharashtra, HP, MP, TN and Odisha, had to be more involved with the other activities in the mother and child program (especially deliveries), in addition to the routine immunization program. This seems to be one of the key reasons for lack of supervision on their part in terms of monitoring and supervision of the ANMs, or immunizations, and cold chain points. Many of the MOs in the PHCs of Maharashtra, MP, Odisha and HP were not trained on immunization, and perceived it to be an area of least priority, particularly when the patient load of deliveries was very high, leaving immunizations completely to the ANMs and CCHs, unsupervised in many cases. Even on probing, 22% of MOs could not provide guidance to development of communication plan, and 19% of the MOs were found to be unaware of timely release of funds as one of their responsibility.

On the contrary, the MOs at the outreach sites were better in guiding and supervising vaccine cold chain handlers - often followed by field visits - ensuring availability of sufficient vaccines and supplies for planned sessions. We observed that they had relatively better and comprehensive action plan to improve routine immunizations. Specifically, the MOs in Tamil Nadu were better in terms of micro-plan management; we observed that they meticulously monitor and try to ensure that maximum immunization coverage takes place. However, on overall basis, in terms of micro-management of the immunization program, like cold chain management and injection safeties, substantial improvement seems possible.

The knowledge on Adverse Events Following Immunization (AEFI) of all MOs across all states under study seemed to be insufficient. Their understanding of AEFI was overlapping with contra-indications immediately after immunization, and therefore, the typical responses during our interviews were very generic. Therefore, we felt that there is a substantial need to train the MOs about AEFI and its management. The cases of non-identification or non-recording of AEFI may actually be attributable to the lack of knowledge about the same. The other area that requires focus is the data-entry and compilation, and its maintenance at RCH portals. Our observations revealed that only 37% of MOs encouraged and/or actively supervised data handlers in compiling and maintaining data.

At the field level, the Auxiliary Nurse Midwives (ANMs), Accredited Social Health Activists (ASHAs) and Aanganwadi Workers (AWWs) were responsible for ensuring full immunization coverage. The surveys conducted on ANMs revealed that 83% of them identified preparation of 'Due List' as their responsibility and 76% were aware of correct technique for administration of the vaccine (Fig. 29). On probing, it revealed that only 35% of the ANMs had appropriate understanding of AEFI and acknowledges it as their responsibility to report to MOs.

As for safe disposal of waste, study revealed that only 38% of ANMs were aware. Waste disposal was an issue in HP and some of the blocks of both case and control-districts of Maharashtra, as incorrectly colored bags were observed to be used for disposing bio-degradable and bio-hazardous waste. The needles those were disposed of in indigenous hub cutters, often were not even soaked in bleach. This was observed in many of the immunization sessions. In general, management of immunization was found to be better in the control districts as compared to the case.

At the block level, the cold chain handlers rated the training content, duration of training, training methodology, trainers and logistics unsatisfactory, in both the case- and control-districts. We noted that some of the cold chain ILRs possessed vials other than vaccines used in immunization. Further, the deep freezers had ice packs, which were often seen to be stacked in a heaped manner, thereby demonstrating lack of training about keeping ice packs in a crisscross manner. According to the CCHs, there is significant scope for increasing the training content, duration, training methodology and logistics.

Awareness of ASHAs and AWWs were assessed through FGDs. Preparation of 'Due List' and community mobilization was being done efficiently by them, which supports the ANMs. During FGDs, we observed that the ASHAs typically play role beyond expectations, which included biomedical waste management, administration of oral vaccines, and updating RCH cards. However, 'Tracking Bags' for keeping the RCH cards were either absent or remained un-utilized wherever present.

District level

At the District level, the District Immunization Officers (DIOs) are involved with the training of MOs besides monitoring, co-ordination, facilitation and implementation of trainings. It was remarkable to find that the DIO of Maharashtra encouraged the use of innovative bags for outreach sessions, which could help in carrying some of the essentials required for immunization. Also, the District Cold Chain Officers were effective in management of cold chains in the District Vaccine Store, planning, scheduling, inspection and monitoring of cold chain points.

State level

At the state level, the State Immunization Officers mentioned that their objective was to look into the administrative, financial and monitoring of training programs conducted throughout the State, and implementation of other policy related to state immunizations. The state level findings also revealed that there was a lack of co-ordination between the respective State and the Ministry at national level, as availability of fund and procurement of certain supplies required for immunization were a problem, which affected the immunization program at the state level.

The IEC officers both at the state and district levels were markedly ambiguous about their responsibilities with regard to developing material on immunization awareness. Despite SIHFW (State Institute of Health and Family Welfare) being present, their involvement in immunization training was grossly suboptimal, except organizing some ToTs.

National level

At the national level, most respondents emphasized that due to existing work-load and additional responsibilities, they are handicapped significantly in performing their assigned duties. We received views that availability of fund for immunization within the RCH program needs augmentation. When the topic of lack of knowledge on AEFI of the MOs and ANMs was raised, we were shown the audio-visual developed exclusively on AEFI, which are meant for use in training; it appears these are not being used by the states during the training programs of MOs & ANMs.

Section-6

Conclusions

6. Conclusions

The findings discussed in the previous chapter, and the degrees to which they meet the objectives and inform the recommendations going forward are explored below:

- Regular trainings on RI should be held for all staff. Several ANMs were found not to have undergone any formal training on RI, except new vaccine trainings but underwent on-the-job orientation from their seniors. MOs, CCHs and ANMs indicated that frequent refresher trainings were preferred.
- The topics could cover awareness on bio-medical waste disposal, sub-center micro-plans, correct route of administration of vaccines and precautions to be taken thereafter, and importance of updating RCH portals; these would all help them in performing their duties effectively.
- AEFI is a core area where the gap between the existing and expected knowledge is present, as evidenced by both the MOs and ANMs. Considering the severity of the issue, this needs to be an area which is addressed.
- The collaboration between partners and government is desirable for the infusion of new ideas improving information transfer and update. However, with only 10% of the trainings independently conducted by government representatives the development and retention of skills related to the UIP is stunted and sustainability of these trainings decrease. The government functionaries should be conducting more trainings independently.
- The trainees were the best assessors of the existing training practices. While the course content and trainers were unanimously (MOs, ANMs, and CCHs) rated highly; the duration, logistics, and methodology of the training left a lot to be desired. To address these, the trainees recommended longer trainings, with skill stations and demo sites equipped with the requisite infrastructure to thoroughly explore the course content.
- The gap between the awareness and knowledge (and practice) in the trainees has been observed. The most probable reason being a single and short training makes one aware of the issue, however frequent/ longer training are required to increase the retention of knowledge and adopting it to practice.
- There is a need to take cognizance of the synergetic interaction between the ANMs and ASHAs, in the domain of immunization. As the ANMs time and competencies are stretched, ASHAs can provide additional support. AWWs and their roles also need to be delineated. As there is a scope of improvement in the competency and knowledge at the field level, an approach that provides the general knowledge to the three of them and delineates the roles and responsibilities of each and then provides specific trainings to meet these may be an approach worth exploring.
- The ways to fulfil UIP's general objectives of efficient, scalable, and reliable knowledge and its transfer were explored. The blended approach, of using two modes of trainings, was found to be suitable for MOs and ANMs. The establishment of skill stations and demo sites to compliment classroom learning was found highly desirable. Though ICT, and its associated self-learning, was not a pronounced preference (37%MOs and 18% ANMs were open to online interactive training modules) the reason may be a fear of novelty and exposure to these modules may reduce the anxiety.

Section-7

Suggestions and Recommendations

7.1 Suggestions and Recommendations

7.1 Training Curriculum and Design

Topics to be covered

The study has highlighted need for stakeholders at various levels to be trained on technical and non-technical issues. Data suggests that at both block and field level stakeholders –MOs and ANMs had incorrect information about technical issues. Questions related to AEFI were answered incorrectly by close to 50% respondents. Waste management was also an area where incorrect answers were received.

With regard to ANMs questions on immunization schedule, AEFI and open vial policy have received wrong answers from approximately 40% respondents. For other components too, none of the questions have received correct responses from all – 10% respondents.

With the launch of new vaccines Government had rolled out training programs for stakeholders at all levels. At the block, MOs were trained through a two-day training while at field level ANMs and ASHAs were trained through a day long training. While these trainings have brought clarity on technical and non-technical aspects there is a need for the following topics to be covered in greater detail.

- **MOs** – Waste management, AEFI, Planning and Supervision
- **Cold Chain Handlers** – Regular maintenance of DF/ILR, Vaccine stock records, Reporting of emergency (e.g. power failure) and planning for contingency measures, proper storage inside ILR and deep freezer, bio-medical waste management
- **ANMs and ASHAs**–Immunization schedule, vaccine administering practices, AEFI and related communication, Waste management, recording and reporting

Further there are other topics that need to be emphasized upon. **Supportive supervision has emerged as an area of concern.** Most MOs and DIOs while undertaking the monitoring visits stress upon checking the data for its accuracy and validity. As of now there does not seem to be any training on supportive supervision. It therefore becomes important to have a training on it. The target group for this training could be SIOs, DIOs and MOs. The training may include information on what supportive supervision is, why it is important, how it could be undertaken and what impact it could have on immunization.

While ANMs and ASHAs to a large extent have technical competency, what is missing is the ownership of certain processes. For instance, ANMs and ASHAs are well aware of their responsibility to give four messages and also to brief the caretaker/parent about the purpose of the vaccine. It was observed that in most cases the desired practice was not followed. While ANMs and ASHAs are equipped with information to pass on they did not do that. In such a scenario it is important to ensure that ANMs and ASHAs understand the importance of these processes and start owning it. One way of doing it is to reinforce the information which could be done through refresher trainings. Refreshers trainings would also go a long way in reinforcing the technical information. Mini capsules on immunization schedule, waste management, usage of IEC and inter personal communication (IPC) could also be taken during refresher training.

Group-led and Practical Exercises

Incorporation of a group-based approach to trainings can serve as a significant value addition in terms of ensuring quality. Most ANMs reported that they relied on peer-to-peer support as well for knowledge related queries in the absence of trainings or refreshers. With a group-based approach, training can include greater interaction and provide:

- Regular breaks from complex subjects through role-plays,
- Sharing of field experiences and addressing concerns,
- Fostering peer-to peer interaction, and
- Addressing practical cases relating to immunization scenarios.

Use of Relevant Language and Terminology

As part of their roles and responsibilities, ANMs, ASHA/AWWs include handling community health communication. During the survey, ANMs stated that while course content and trainers were satisfactory, the language used during trainings often included technical terms and jargon without reference to their vernacular translations or relevance at the community level.

For trainings, specific emphasis on use of **relevant vernacular terminology** may be considered, particularly if trainings are on infections and diseases, vaccination, cold chain management or new technologies.

Analysis of Pre-post tests and Feedbacks

It was shared both national and state level that the manuals through which trainings are imparted are not field tested. At best feedback from experts and/or national partners is sought before finalising manuals which may not be representative of wide geographic expanse to be covered through training. Further while national partners/experts might have strong hold on technical aspect they may not be in the most suitable position to comment upon training methodology. In such a scenario feedback received through feedback forms and analysis of pre and post-test questionnaires may provide insights into what is working and what is not.

During the course of data collection respondents from different levels have expressed the importance of trainee feedback in identifying value additions to trainings. At the same time, they also accepted that currently feedback forms and pre-post questionnaires are not being analysed. Therefore, **analysis of feedback forms and pre-post-test** becomes imperative. According to the District Immunization Officer of Solan block, Himachal Pradesh, a streamlined system of feedback analysis may eliminate altogether, the need to conduct additional efforts to assess training needs, and support in restructuring and improving of existing trainings.

Incorporating audio-visual aids in the class room training

Class room training has emerged as the second most preferred mode of training after skill stations/ demonstrations. Respondents were of the opinion that current class rooms sessions rely upon one sided communication and neither allow any participatory activity nor have infusion of technology. Respondents felt that in order to make trainings interesting and more impactful audio-visual aids could be used.

It is therefore recommended to have mini audio-visual clips/movies as part of the trainings. These clips could either be used to introduce a concept followed by a detailed discussion or could be shown at the end of session to recapitulate/reiterate the information.

Inclusion of easy-to-refer to modules on immunization schedule, record keeping, vaccine administration and key messages.

ASHAs and AWWs expressed that easy to refer to modules on immunization schedule can help them in clarifying their doubts. They were of the opinion that a booklet with FAQs on immunization schedule and job aids would immensely help them in clarifying their doubts. Similar booklets could also be made for vaccine administration and record keeping.

Demo sites/skill stations have emerged to be of preferred mode of training. It is imperative that the trainings conducted should have practical exposure as an integral component

With preference of classroom trainings as the most preferred mode of training, respondents have also strongly expressed the need for greater practical and exposure-based trainings.

During the course of the study, it was found that knowledge of health workers regarding vaccine administration and other roles and responsibilities was satisfactory. However, significant gaps were observed in knowledge and practice of subjects like record keeping, waste management and AEFI. It was expressed that along with classroom trainings, practical exposure and demo-sites can serve as an effective technique for a holistic understanding.

Incorporation of practical demo –sites with human interface can provide trainees exposure in more holistic terms. Rather than a focus on the subject itself, trainees feel that practical training components expose them to a real-time scenario wherein knowledge, practice and competency can be improved while also being mindful of adverse or unforeseen challenges. In Tamil Nadu for example, trainings and peer-to-peer knowledge sharing on vaccine administration includes mock drills on using orange peel as substitute for human skin to replicate sub-cutaneous administration of vaccine.

Set-up of Training Cells

At various levels, respondents have expressed that the training process is significantly affected by the trainers selected. Various factors including shortage of manpower, short notice while inviting trainers to be trained and identifying ideal persons for training, significantly affect the quality of subsequent trainings. Based on the responses from different stakeholders, the suggestion to set-up dedicated training cells at the state and district levels can be useful in ensuring quality as it is already being practiced in Maharashtra where there are district training centres with District training officers. There are extension officers under the District training officers who actually impart training at the district & sub block level. The training load of these centres are evaluated every month for further action.

The cells actually function in the following manner,

- Better planning and scheduling of trainings for stakeholders at state, district, block and field level.
- Provide a direct interface and feedback channel with front line workers for better communication and understanding of training needs.
- Training cells can have properly identified and trained (at the state level), master trainers with public health background.

Training cells can help streamline the training process of the stakeholders (district and below) by practically documenting training needs and provide independence in planning and implementation of trainings. Similarly, developing an identification and selection criteria for master trainers at state, district and block level can help identify appropriate person related to immunization to be trained.

7.2 Innovative Practices

Development of a Comprehensive Digital Toolkit

Of the respondents surveyed at the block and field levels, most were found to use smartphones and were familiar with at least basic features included. With the introduction of the ANMOL tablets, and growing familiarity of stakeholders with digital tools, a **comprehensive mobile and tablet-based application can be developed to serve as an online and offline ready reckoner**. This application can provide information

on technical subjects to stakeholders including ANMs and CCHs using an interactive, user-friendly platform with audio-visual aids and presentations for reference at any time and place.

This mobile application can be targeted to help users carry out their roles and responsibilities with ease and may also incorporate elements to address queries, particularly those relating to immunization schedule, Cold chain management, AEFI, and waste management.

Frequent refresher on key components through the use of IT:

A significant component of the respondents was found open to the idea of online training modules. Conveying small messages repeatedly to address the key gaps through IT enabled platform like smartphones can be an excellent route to increase awareness and improve positive practice. **A build in self- assessment component** in such modules can serve an excellent mode of increasing motivation and ownership of the Program

Incorporation of Training Components in Monthly Meetings

Given that the frequency of trainings through cascade model vary, stakeholders at the block and field levels have expressed the need for regular trainings which can help them refresh their existing knowledge and practices. There are some such examples in India, particularly in Rajasthan, where monthly meetings of ANMs have started including small training capsules to reinforce existing knowledge and even introducing new concepts relating to immunization.

Borrowing from such examples, this strategy can help reinforce and refresh technical and non-technical knowledge of those attending at no additional cost. Further since these trainings are going to be part of monthly meetings, a concept internalised and owned by ANMs, resistance would be low and attendance would be high. More importantly, this practice is easy to implement and requires little systemic support.

- Two-three hours during monthly meetings could be set aside for training ANMs on issues that they deem important to be trained. This can also include sharing of field experiences and practical constraints.
- The topic for the next training could be decided in consultation with ANMs in current meetings, taking in to consideration immediate and relevant knowledge needs.
- MOs needs to take responsibility of organizing and monitoring these trainings. This task could be added to monthly plan of MOs and their progression and increments could be linked to successful implementation of these trainings

Annexure

Annexure:

Table 11: List of existing training programmes with relevant details

Training	Training material	Training level	Duration (days)	Frequency (years)	Stakeholders	Trainers	Training methodology	Current status (cumulative 3 years till Dec 2017
Routine immunization training for medical officers	MO Routine Immunization Handbook	State and regional	3	4-5	MOs, DIOs, urban MOs	SIO, partners, DIO, SIHFW faculty, medical colleges, etc.	Two days classroom training and half day field visit. Participatory and group exercises	Ongoing (completed at many places)
Routine immunization training for health worker	ANM RI handbook	Regional and district	2	4-5	ANMs	SIO, partners, DIO, medical officers, SIHFW faculty, medical colleges, RTC faculty etc.	Classroom training and field visit. Participatory and group exercises	Detail status not available. Planned to start after release of new Handbook in 2018
Cold Chain Handlers Training- Vaccine and Cold Chain Handlers Handbook	Vaccine and Cold Chain handler's handbook	District	2	3	Cold Chain Handlers	SIO, Partners, DIO, MO, State CC officer, Technicians etc.	Classroom training, participatory and group exercises	Done in 2016-17
Cold Chain Technician training on ILR and DF	ILR and DF module	National (NCCVMRC & NCCTC)	7	3	Cold Chain Technicians/ Refrigerator Mechanics	Identified Master trainers- NCCVMRC, NCCTC faculty, Cold Chain technicians	Classroom and practical training	Government planning ITMIS system through NCCVMRC

Contd.

Training	Training material	Training level	Duration (days)	Frequency (years)	Stakeholders	Trainers	Training methodology	Current status (cumulative 3 years till Dec 2017
Cold Chain Technician training on WIC/ WIF	WIC and WIF module	National (NCCVMRC & NCCTC)	6	3	Cold Chain Technicians/ Refrigerator Mechanics	Identified Master trainers- NCCVMRC, NCCTC faculty, Cold Chain technicians	Classroom and practical training	Government planning ITMIS system through NCCVMRC
Adverse Event Following Immunization Surveillance Training	AEFI guidelines (Revised 2015)	National, Regional and state level	3	3	National, State and District AEFI committee members, SIOs, DIOs and MOs	Immunization Partners, AEFI secretariat, Medical college faculty, Immunization experts	Classroom training, participatory and group exercises	National, Regional and State level trainings were done in 2015-16. Monitoring and follow up for District and lower level trainings is weak
NCCMIS Training	NCCMIS module	National and state level	1	No fix frequency	Technicians and cold chain officers	NCCVMRC trainers, UNICEF and State Immunization officers	Classroom training, practical exercises	No status available. Weak monitoring and follow up.
Training on New Vaccine	Operational guidelines for new vaccines and FAQs	At all levels	0.5-1	Only once during launch of new vaccine	All stakeholders involved in UIP	Immunization partners, ITSU, SIOs, DIOs, MOs	Classroom training	No status available. Weak monitoring and follow up.
Training on Vaccine and Cold Chain	TVAC module	At National level (NCCVMRC	5	No fix frequency	Program Managers	NCCVMRC trainers, UNICEF and SIOs	Classroom training	Government plan ITMIS system through NCCVMRC

Contd.

Training	Training material	Training level	Duration (days)	Frequency (years)	Stakeholders	Trainers	Training methodology	Current status (cumulative 3 years till Dec 2017
Intensified Mission Indradhanush/ Mission Indradhanush Training	Operational guidelines for IMI and MI campaign and FAQs	At all levels	0.5-1	Only once during IMI or MI campaign	All stakeholders involved in UIP	Immunization partners, ITSU, SIOs, DIOs, MOs	Classroom training	No status available. Weak monitoring and follow up.
Training on AFP Surveillance	AFP surveillance guidelines	At national, state and district level	1-2	1	MOs, DIOs, SIO, Private practitioners, Traditional healers, quacks, reporting units and informers	World Health Organization	Classroom training	No status available. Weak monitoring and follow up.
Training on VPD surveillance	VPD surveillance guidelines	At national, state and district level	1-2	Not fixed	MOs, DIOs, SIO, Private practitioners, Traditional healers and informers	World Health Organization	Classroom training	Status not available
Training on Measles Surveillance	Measles surveillance guidelines	At national, state and district level	1-2	Not fixed	MOs, DIOs, SIO, Private practitioners, Traditional healers, quacks, reporting units and informers	World Health Organization	Classroom training	Status not available
BRIDGE IPC Training for Field Level Worker	BRIDGE Training module	At district and block level	0.5-1	Once	ANM, ASHA, AWW	UNICEF, Master trainers	Participatory with group exercise	Status not available

Contd.

Training	Training material	Training level	Duration (days)	Frequency (years)	Stakeholders	Trainers	Training methodology	Current status (cumulative 3 years till Dec 2017
Field Level Worker Training for Immunization	FLW training booklet	At district and block level	0.5-1	Once	ANM, ASHA, AWW	WHO, Master trainers	Classroom training	Status not available
eVIN Training	eVIN training guidelines	State and district level	1-2	Refresher training plan after a year	Cold Chain handlers, DIOs	UNDP	Classroom and practical training	100% training for 12 eVIN states
Training for AEFI spokesperson	AEFI spokesperson module	National and state level	2	Once	Media/ AEFI spokesperson	UNICEF/ ITSU	Participatory with group exercise	Only in numbers especially for GAVI states
Training for Measles Rubella Campaign	Operational guidelines for MR campaign and Frequently asked questions	At all levels	0.5-1	Only once during IMR campaign	All stakeholders involved in MR campaign	Immunization partners, ITSU, SIOs, DIOs, Mos	Classroom training	No status available. Weak monitoring and follow up.
Training for Media (In service)	Media training kit	National level	1	Once for GAVI states	Media persons	UNICEF	Participatory with group exercise	Only in numbers for GAVI states
Training for Media (Induction)	Media training course material	National level	1	Once for GAVI states	Media persons	UNICEF	Participatory with group exercise	Only in numbers for GAVI states

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