



# Report on RAPID IMMUNIZATION SKILL ENHANCEMENT (RISE) Pilot Phase

November, 2021





# Acknowledgment

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The RISE team at JSI expresses sincere gratitude to the officials at the Ministry of Health & Family Welfare (MoHFW), Government of India for their support and guidance, with special thanks to Mr. Vikas Sheel, I.A.S (Additional Secretary and Mission Director), Mr. Ashok P Babu, I.A.S (Joint Secretary, RCH), Dr. Pradeep Haldar (Advisor, RCH), Dr. Veena Dhawan (Joint Commissioner, UIP) and Dr. Indu Grewal (Sr. CMO). We are extremely thankful to them for their consistent guidance and mentorship and stimulating suggestions in conducting the project activities.

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We extend thanks to GAVI, the Vaccine Alliance for awarding financial grant to JSI to conduct the pilot project "Rapid Immunization Skill Enhancement (RISE)". This report will serve as a reflection of the activities carried out throughout the project and documenting major achievements that would be instrumental in designing scale up plans in future.

We would also like to acknowledge the state health leadership including SEPIOs of the five states for their strong ownership and support in implementing RISE. Our special thanks to the District and Block Immunization Officials, who shared their experience and perspectives on immunization trainings and other services under the Universal Immunization Program (UIP) and actively supported the program implementation in their respective areas.

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Lastly, we praise the incredible contribution of the health workers who showed their enthusiastic response to the application and shared their honest views and feedback towards the innovation that strengthened their self-learning and built their confidence and competence on routine immunization. Their support in making this intervention a success is highly appreciated.

# Acronyms

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AEFI	Adverse Events Following Immunization	M&E	Monitoring and Evaluation
ANM	Auxiliary Nurse Midwife	MCP	Mother and Child Protection
ASHA	Accredited Social Health Activist	MH	Maharashtra
AWW	Anganwadi Worker	MO	Medical Officer
BCG	Bacillus Calmette Guerin	MoHFW	Ministry of Health and Family Welfare
CBNA	Capacity Building Needs Assessment	MP	Madhya Pradesh
DIO	District Immunization Officer	MR	Measles Rubella
DPT	Diphtheria Pertussis Tetanus	NFHS	National Family Health Survey
FGD	Focus Group Discussion	NHM	National Health Mission
FI	Field Investigators	OD	Odisha
FIC	Full Immunization Coverage	PCV	Pneumococcal Conjugate Vaccine
GAVI	The Global Alliance for Vaccines and Immunizations	RISE	Rapid Immunization Skill Enhancement
HP	Himachal Pradesh	RVV	Rotavirus Vaccine
HW	Health Worker	SCORM	Shareable Content Object Reference Model
ICT	Information, Communication and Technology	SDG	Sustainable Development Goals
IDI	In-Depth Interview	SEPIO	State Expanded-Programme-on-Immunization Officer
IPV	Inactivated Polio Vaccine	TN	Tamil Nadu
JSI	John Snow India	UIP	Universal Immunization Programme
LMS	Learning Management System		

# Executive Summary

The Universal Immunization Programme (UIP) of the Ministry of Health & Family Welfare (MoHFW), is one of the most vital Child Survival Strategy of the Government of India. India's immunization program is one of the largest public health programmes in the world; with an annual birth cohort of 27 million. In addition, 100 million children of 1–5-years of age are targeted with booster doses annually. Immunization is a cost-effective health programme as it saves lives and costs of health care. Since its inception, the Universal Immunization Programme (UIP) has gone through enormous changes particularly in the past few years from introducing new vaccines, technologies, guidelines, etc. Such rapid changes in the programme need matching capacity building of the vaccinators and supervisors so that they can adapt themselves to these new developments. However, the traditional cascading training is time consuming and often fail to match these rapid changes in the programme.

This led to the Govt of India mandating John Snow Inc. (JSI) to develop 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 digital training package, complementary to the ongoing face-to-face training, for rapid knowledge and skills building of the health workers performing vaccination of mothers and children under the Universal Immunization Programme (UIP).

RISE is an innovative digital training platform for faster and effective knowledge transfer, that was piloted in five districts of five states namely Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha, and Tamil Nadu, targeting 2500+ ANMs for building their immunization capacity. This user-centric model optimally leverages the high technology (mobile phone, internet) penetration among the health workforce and effectively uses digital training content supported by a face-to-face component of mentoring by supervisors.

The first step towards building the RISE Package was a comprehensive **Capacity Building Needs Assessment (CBNA)** which was conducted from February to June 2018 to assess the existing scenario of the immunization training for the health workers and to understand the gaps in knowledge and skills of the healthcare workforce engaged in UIP. Assessment focussed on the health workers' feedback on the existing training methodologies, contents, training logistics, and the efficacy of trainers.

Based on the gaps identified in the CBNA and using the Govt of India's training handbook for immunization workers, five learning modules were developed in the following topics i) Immunization schedule and session management, ii) Injection safety and vaccine administration, iii) Principles of cold chain management, iv) Adverse effects following immunization (AEFI), and v) Communication to tackle vaccine hesitancy. The digital part is primarily self-learning through objective focused content, based on adult learning principles that engage the learners through a variety of audio, animated visuals, reading and interactions like learning games and quizzes. It also has a provision of objectively assessing the learning and certification to make it more attractive to the learners.

An open-source Learning Management System (LMS) had been customised to manage and deliver the digital content through the mobile app in android and ios versions. The LMS also provided a real-time monitoring dashboard that enabled quick problem-solving, support and follow up by supervisors at different levels.

This report provides insight into the outcome and acceptance of the RISE in the pilot phase. RISE was rolled out during March-August 2020 and proved to be an appropriate training method even during the COVID-19 pandemic. Even though health workers were grossly occupied with covid duties, more than 80% of them completed the course in time. State-

wise, Madhya Pradesh and Himachal Pradesh were the two states where the course completion rate was 100% while 96% completion was seen in Odisha. In Maharashtra and Tamil Nadu, the course completion rate was 68% and 74% respectively.

Apart from the good completion rate, the pilot project could generate evidence of positive outcomes in favour of establishing the effectiveness of this model of training. Completing the RISE training course led to 14 points increase in the knowledge levels of learners during the endline assessment, as compared to baseline figures (69% during baseline to 83% during endline). The knowledge gain after completing each module was also monitored and an average of 11 points increase was observed.

More than 65% of the learners achieved gold certificates, which inferred that their knowledge level reached more than 85%, the minimum scale to get a gold certificate. Around 34% of the learners earned silver certificate (70-85%) as well. State-wise, learners from Odisha acquired the highest (82%) gold certificates followed by 71% learners from Madhya Pradesh and 67% in Himachal Pradesh and Maharashtra each.

Alongwith the quantitative assessment, a qualitative component was also included to have in-depth insight into the usefulness and acceptability of the new model of training. The qualitative findings expounded that the training course was well suited to the needs of the learners and was definitely beneficial. They really appreciated the features like self-paced learning, quizzes & games, instant certification and prompt trouble shooting. The training helped them with decision making during immunization sessions and resolve problems with confidence and competence.

The enthusiastic response and spontaneous appreciation from the health workers and supervisors alike demonstrated that the pilot has strong potential to be converted to a sustainable expansion and system inclusion. Currently, at the request of various state governments, Govt. of India has decided to include RISE in the immunization training portfolio of NHM and go for a phased scale-up starting with 36 districts of 3 states (Himachal Pradesh, Madhya Pradesh and Odisha) during 2021-22.

# Contents

<b>Section 1: Introduction .....</b>	<b>5</b>
1.1 Background .....	5
1.2 Rationale of Intervention.....	5
<b>Section 2: Overview .....</b>	<b>6</b>
2.1 Area of intervention.....	6
2.2 Project period.....	7
2.3 Project Human Resource.....	7
2.4 Capacity Building Need Assessment (CBNA).....	8
2.5 Content Development.....	10
2.6 Mode of delivery of the content – Learning Management System (LMS) .....	11
<b>Section 3: Implementation of the RISE mobile-learning solution .....</b>	<b>12</b>
3.1 Implementation Strategy.....	12
3.2 Cascade Approach.....	14
3.2.1 RISE launch and State-level orientation.....	14
3.2.2 Block Level orientation of RISE application .....	15
3.3 Go-live of RISE modules .....	16
3.4 Concurrent Monitoring and Documentation- RISE Bulletin.....	17
<b>Section 4: Baseline and Endline Assessment .....</b>	<b>19</b>
4.1 Sampling Frame and Sample Size in Intervention Districts.....	19
4.2 Sampling Frame and Sample Size in control districts .....	19
4.2.1 Sampling for ANM Knowledge Assessment Survey.....	20
4.2.2 Sampling for ANMs Practice Assessment Survey.....	20
4.3 Data Collection Tools and Training.....	20
4.3 Data Analysis and Report writing.....	20
<b>Section 5: Results and Discussion .....</b>	<b>22</b>
5.1 Findings from RISE Dashboard .....	23
5.1 Effectiveness of RISE training App: Improvement in Knowledge .....	26
a) Comparison between Baseline and Endline in Intervention Districts.....	26

5.2 Effectiveness of RISE training- Improvement in Immunization Practices .....	26
5.3 Qualitative Survey Findings.....	30
5.3.1 RISE app training.....	30
5.3.2. Useful Features of RISE.....	31
5.3.3 Challenges faced in taking the RISE training .....	32
5.3.4. Support received to overcome challenges .....	32
5.3.5. Utility of the application in the field .....	33
5.3.6. Suggestions from health workers .....	34
5.3.7. Improvements in the RISE training.....	34
<b>Section 6: Learnings from the Project .....</b>	<b>35</b>
6.1 Effectiveness of RISE as a Learning tool.....	35
6.2 Blended- learning from WhatsApp group- An Experiment .....	35
<b>Section 7: Consideration for Scalability and Sustainability .....</b>	<b>37</b>
7.1 Overcoming Barriers to Roll Out of RISE Training Package.....	37
1. Tech literacy .....	37
2. Orientation of the Trainers.....	37
3. Troubleshooting learners soon after roll out of the module.....	37
4. Motivation to complete the training course.....	38
5. Motivation to learners who did not start the course.....	38
6. Keeping learners engaged after completion of course .....	38
7.2 Recommendations .....	38
7.3 Limitations.....	39
7.4 Exposition of RISE mobile-learning solution .....	39
<b>Annexures.....</b>	<b>41</b>
Annexure-I ANM Knowledge Assessment .....	42
Annexure-II ANM Practice Assessment .....	46
Annexure-III Qualitative Survey Tool .....	48
Annexure IV Supplement Figures.....	51

# List of Figures

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Figure 1:	Intervention Districts, RISE Project.....	6
Figure 2:	RISE Organogram.....	7
Figure 3:	Key Take away: CBNA Report .....	9
Figure 4:	RISE Project Implementation Strategy .....	13
Figure 5:	Go- Live Calendar of RISE App.....	16
Figure 6:	Percentage of learners who completed RISE training .....	22
Figure 7:	Module-wise certification status (%).....	22
Figure 8:	Certification status in Intervention districts.....	23
Figure 9:	State wise knowledge improvement between Pre and Post Assessment score (%) .....	23
Figure 10:	Module wise improvement of knowledge during pre and post-assessment (%).....	23
Figure 11:	Comparison of Baseline and Endline Knowledge Assessment in RISE Intervention districts.....	24
Figure 12:	Comparison of Baseline and Endline Knowledge Assessment in RISE Control districts .....	25
Figure 13:	Knowledge Gain in Intervention Districts .....	25
Figure 14:	Knowledge Gain in Control Districts.....	25
Figure 15:	Learners practicing correctly at session sites during Baseline and Endline Assessment in RISE intervention districts .....	27
Figure 16:	Health workers practicing correctly at session sites during Baseline and Endline Assessment in RISE Control districts .....	28
Figure 17:	Improvement in Practices of Health Workers in Intervention Districts.....	29
Figure 18:	Improvement in Practices of Health Workers in Control Districts.....	29
Figure 29:	Key Learnings .....	35
Figure 20:	Learners attempted WhatsApp quizzes after RISE training course .....	36

# List of Tables

---

Table 1: Demographic Indicators for Selection of Control Districts.....	6
Table 2: Project Period, RISE Project .....	7
Table 3: Survey tools used during Training Workshop.....	0
Table 4: Sampling frame and sample size in Intervention Districts.....	19
Table 5: Sampling Frame and sample size in Control Districts.....	19
Table 6: Division of sections in the ANM Knowledge Assessment questionnaire .....	20
Table 7: Paired t-test results showing learning effectiveness of RISE application in Intervention Districts. Sampled population (N= 275).....	24
Table 8: Paired T-test results showing Learning Effectiveness indicative through Practice Improvement Assessment.....	26
Table 9: Sampling Frame of Qualitative Data Collection .....	30

## Section 1

# Introduction

### 1.1 Background

Over the past decade, the Universal Immunization Program (UIP) in India has undergone tremendous reforms. With the introduction of new vaccines (like Pentavalent, Rotavirus Vaccine (RVV), Inactivated Polio Vaccine (IPV), Pneumococcal Conjugate Vaccine (PCV), Measles-Rubella (MR) and nationwide periodic immunization catch-up initiatives like Mission Indradhanush (MI), the Government of India has been actively focusing towards adding value to the immunization program. However, newer vaccines, tools, techniques and methodology for improvement of the performance of stakeholders involved in the UIP requires training and capacity building at different levels including the frontline health workers to whom a standard cascade-based training reaches only once in 3-4 years or even more. Moreover, a single time exposure to new guidelines through instructor-led training may not be sufficient to bring about the desired changes in knowledge and skill of the health workers.

Also, training of large numbers of frontline health workforce through a face-to-face cascade approach often falls short in effectiveness due to different factors, like complicated logistics arrangement and varying quality of training. Faster knowledge transfer to each worker, even in the remotest part of the country, is the need of the hour, especially during the COVID pandemic with lockdown and restricted travel.

In increasing instances, the application of digital technology can make a difference in the capacity-building scenario to tackle some of the above-mentioned issues. The growing familiarity and use of digital solutions like smartphones, tablets and computers provide an opportunity to seamlessly deliver knowledge and help upgrade skills. This trend can complement and add value to the existing workshop or classroom-based training programs, which alone may not be effective in the dissemination

of knowledge and up-gradation of skills of the vast number of stakeholders involved in the immunization program.

### 1.2 Rationale of intervention

The Universal Immunization Program is a highly dynamic program which is undergoing rapid changes such as the introduction of new vaccines, new technologies, new Biomedical waste disposal guidelines and so on. This demands regular and fast transfer of new knowledge and guidelines to the large number of vaccination workforce in such a vast country. Standard classroom based, cascade training often falls short to complete the training in time and often leaves no scope for refreshers. Lack of structured monitoring and variable training quality also affect the knowledge received by the health workers. Thus, to foster an effective and interactive knowledge-building platform for immunization workers, a blended learning methodology was explored to apprise health workers with the latest developments in the immunization program and help them to upgrade their skills as per the program needs. Thus, Rapid Immunization Skill Enhancement (RISE), a unique capacity-building initiative, was developed by JSI under the stewardship of the Ministry of Health and Family Welfare (MoHFW). It has been conceptualized as an innovative training platform, complementary to ongoing immunization training, through leveraging the technology like internet and mobile phone.

#### **The platform envisages the following:**

1. Apprise health workers with the latest updates and changes in the guidelines
2. Ensuring quality of training and maintaining uniformity
3. Exclusive real-time monitoring and feedback

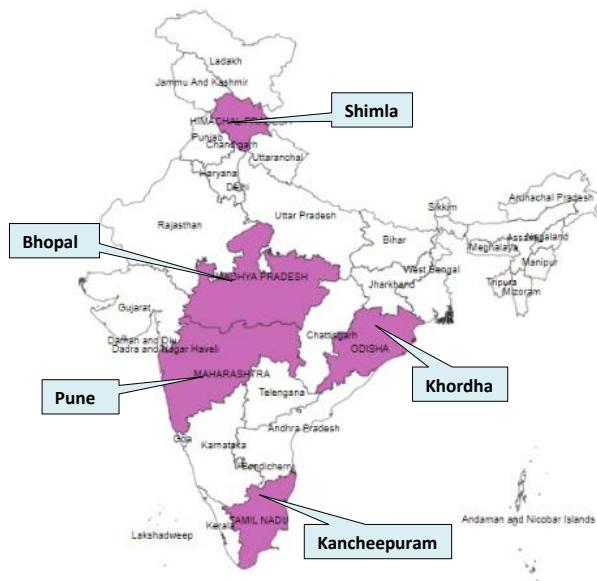
## Section 2

# Overview

### 2.1 Area of intervention

Rapid Immunization Skill Enhancement (RISE) was successfully piloted in 5 districts of 5 states of India namely, Shimla (Himachal Pradesh), Bhopal, (Madhya Pradesh), Khordha (Odisha), Pune (Maharashtra) and Kancheepuram (Tamil Nadu)..

Figure 1: Intervention Districts, RISE Project



To study the outcome of the intervention, it was also decided to have 5 control districts (one in each state), closely matching socio-demographic and healthcare indicators. The control districts were:

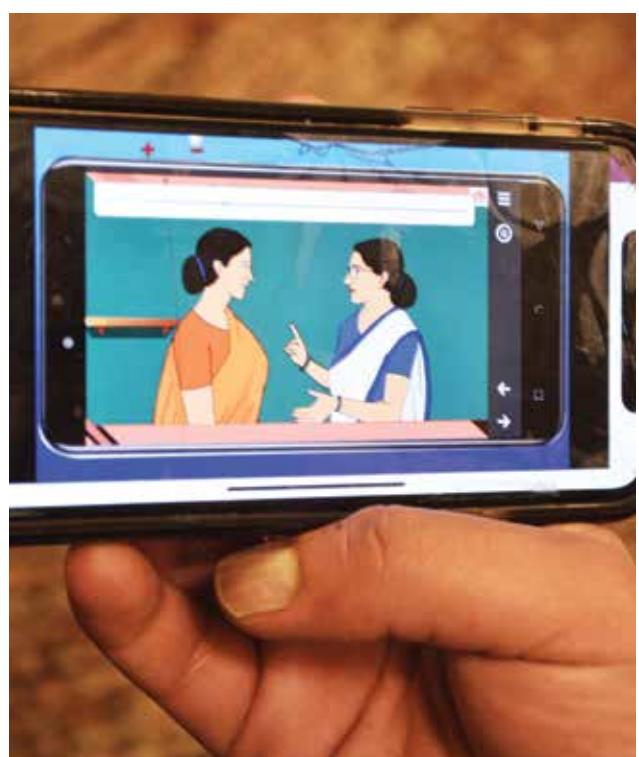
- Solan, Himachal Pradesh
- Indore, Madhya Pradesh
- Nagpur, Maharashtra
- Jharsuguda, Odisha
- Madurai, Tamil Nadu

The intervention and control districts were selected on the basis of composite indicators decided in consultation with the government. The indicators and their source are as follows:

Table 1: Demographic Indicators for Selection of Control Districts

Indicator	Source
Female Literacy	Census 2011
Percent of urban population	Census 2011
Full Immunization Coverage	NFHS 4, 2015-16
TT2 booster taken by pregnant women	NFHS 4, 2015-16

The data for the above indicators for all the districts of the states of Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha and Tamil Nadu was first imported into an excel sheet and then into the SPSS software. Equal weightage was given to each indicator. Based on the composite index, the closest match in each state was selected as the control district for the pilot phase.



## 2.2 Project period

**Table 2: Project Period, RISE Project**

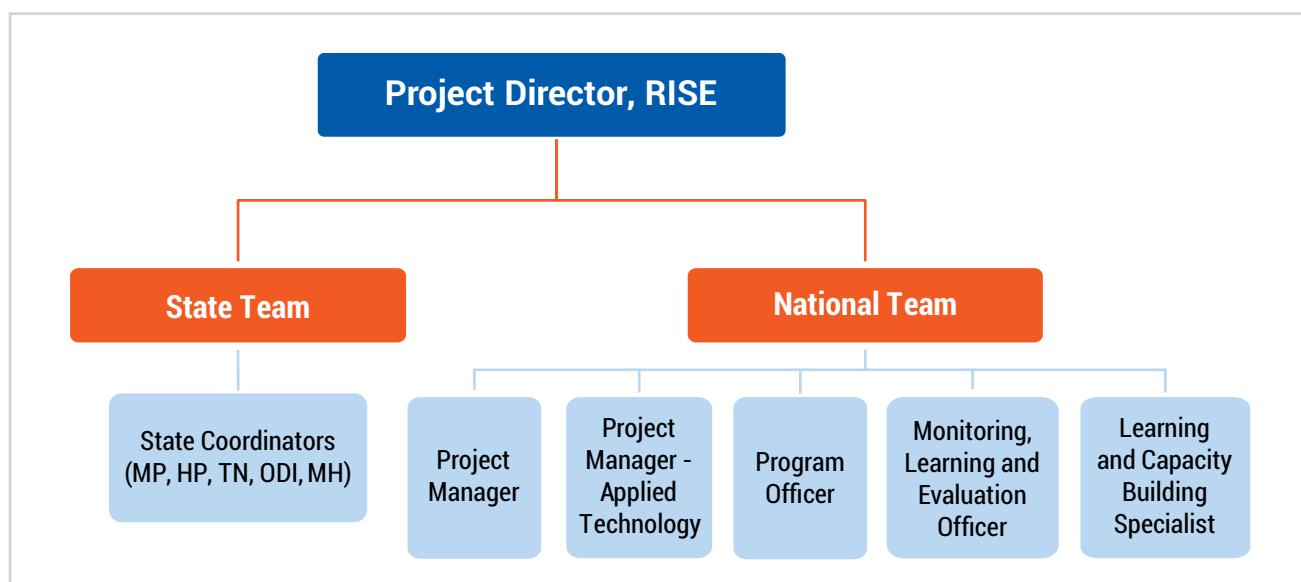
S. No	Activity	Timeline
1.	Capacity Building Need Assessment (CBNA) & reporting	February 2018- July 2018
2.	CBNA Dissemination, Setting objectives, Deciding content & exploring innovative methodologies for capacity building	August 2018- December 2018
3.	Developing capacity building packages & Translating into 5 languages	January 2019- February 2020
4.	Developing & Testing Learning Management System	February 2019- December 2019
5.	Baseline assessment	September 2019- November 2019
6.	Launch of RISE & Orientation in District & Block levels	December 2019- February 2020
7.	Roll out of modules	March 2020- July 2020
8.	Monitoring and support to field implementation	March 2020- October 2020
9.	Endline assessment	October 2020- February 2021
10.	Analysis, Reporting, Documentation preparation & Start of Scale-up	March 2021- November 2021

## 2.3 Project Human Resource

The RISE project was successfully managed by a team of 11 professionals. The project was led by the Project Director along with five team members at the national level.

Each intervention state is supported by a State Training Officer/ coordinator, placed at the state level. The core program team, as shown above, is supported by the finance and admin team in ensuring smooth day to day logistical and budgetary requirements of the project.

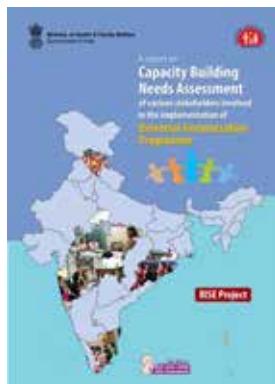
**Figure 2: RISE Organogram**



## 2.4 Capacity Building Need Assessment (CBNA)

To understand the capacity building and training needs of different stakeholders involved in the UIP, and the existing challenges and constraints at different levels of program implementation, a Capacity-Building Needs Assessment (CBNA) was carried out from January to July 2018. An external agency was engaged for conducting the CBNA including analysis of data and preparing the report. In the beginning, an **inception meeting** was held between the agency, JSI and MoHFW to discuss the project, study methodology, data collection tools, expected goals and deliverables of the study. A mixed methodology approach was adopted for the CBNA including qualitative and quantitative methods of data collection at the district level and the block and field level. The specific objectives of CBNA included:

- i) Identification and documentation of Knowledge, Skill and Practices of health workers related to immunization, and limitations and constraints of different stakeholders in performing their tasks
- ii) Analysis of gaps between existing and expected levels of immunization related knowledge and competencies of stakeholders



Picture 2.1: CBNA Report, 2018

- iii) 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.
- iv) Assess tech literacy and perform technology scoping

The field work was conducted by the agency, with the support and supervision of the JSI team, over a period of five months spanning from February 2018 to June 2018. Data was collected from ANMs in the five states. Face-to-face In-depth Interviews (IDI) and Focus Group Discussions (FGDs) with them and supervisors provided inputs on their learning needs, and discussions with senior district and state officials helped to identify broader areas needing capacity building.

A **Preliminary Literature Review** was carried out (online and offline) to review relevant literature linked 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. It involved understanding the role of partners in catering to immunization-related practices and training and capacity-building mechanisms. **Mapping of stakeholders** was done to identify all relevant stakeholders critical to the implementation of the immunization program at the national, state, district, block and sub-center levels. The tools consisted of the survey questionnaire, checklists for IDI, FGD, and observation of vaccination sessions.



Picture 2.2: Discussion during CBNA data collection, 2018



Picture 2.3: Field Observation during CBNA data collection, 2018



Picture 2.4: FGD carried out with the health workers, Chennai, Tamil Nadu, 2018



Picture 2.5: FGD carried out with the Health Workers, Pune Maharashtra, 2018

**Table 3: Survey tools used during Training Workshop**

Type of tools	Number of tools
Survey sheets for FLWs	297
In-depth interviews	119
Observation checklists	68
FGD checklists	52

The Capacity Building Need Assessment (CBNA) findings are highlighted in the following **Figure 3**. CBNA also explored the digital literacy among the health workers and the results showed that 82% of ANMs and village health nurses (VHNs), among other health workers, possessed smartphones and the majority of them (84%) could use their phones for WhatsApp and text services.

**Figure 3: Key Take away: CBNA Report**



of CBNA was submitted by the agency in June 2018, a consultative workshop was organized to disseminate the findings, under the aegis of MoHFW, on 8th August 2018, in New Delhi. The workshop was chaired by Ms. Vandana Gurnani, IAS (the then Joint Secretary-RCH)

and facilitated by the senior officials from the MoHFW. Participants from the five pilot states and all national-level development partners (WHO, UNICEF, UNDP, NCCVMRC, BMGF, ITSU, CORE) were present.



Picture 2.6: Ms. Vandana Gurnani (IAS), Dr. M K Agarwal and Dr. Veena Dhawan interacting with the participants, August 2018



Picture 2.7: National Dissemination of CBNA Findings and Brainstorming Workshop, August 2018

During the CBNA dissemination and meeting, the following 5 core topics were identified which impact the quality of the immunization program most and accordingly five modules were suggested to be developed:

1. Immunization schedule and session management
2. Injection safety and vaccine administration
3. Principles of cold chain management
4. Adverse events following immunization
5. Communication to tackle vaccine hesitancy

## 2.5 Content Development

After the CBNA findings were crystallized and the five topics for the RISE package were decided, the RISE team started working on content development. As the health workers of India are usually trained by the "instructor-led classroom" methodology, for many this was possibly the first time that a training app was going to be used, and health workers were going to discover self-learning on a mobile phone. Therefore,

it was imperative that the content should be easy to understand, simple to navigate through, engaging and interactive and most importantly, help the learners improve their knowledge and skills regarding immunization.

The RISE team used a two-pronged approach to create the content of the modules. Firstly, universally known and best-in-class methodologies like adult learning principles, instructional design, inclusivity, different learning styles (**V**-visual/**A**-aural/**R**-read/**K**-kinesthetic learners) and gamification. Secondly, the animated content was designed that was relatable to users and used a narrative style to keep the learners engaged in the content. The narrator resembles a medical officer, in a familiar primary health center scene; and games depict daily life situations, making the content familiar and close to the hearts of the learners. The animated content was developed with the help of an agency, supervised by the RISE team, JSI.

With every other step of RISE, the content building was a consultative process and various stakeholders, working groups, and partners contributed with their

expertise and knowledge throughout the process. The development of 5 modules was a long and arduous process, with several steps listed below:

- a. **Content curation-** The Immunization Handbook for Health Workers, 2018 (<https://www.nhm.tn.gov.in/sites/default/files/documents/ImmHBforHW2018.pdf>) was the prime source of content. Alongwith that, other relevant training contents approved by the MoHFW, Govt. of India were researched too. Based on these books and documents, five modules were developed with their corresponding chapters, assessments, etc. Perspective from stakeholders was taken during the content development.
- b. **Storyboarding- "Storyboard"** is a graphic organizer that consists of illustrations or images displayed in sequence for pre-visualizing a motion picture, animation, motion graphic or interactive media sequence, etc. This was the first step of content development, and instructional designing was used to give proper structure to the content. Each module had a few chapters, and each chapter had its storyboard with learning objectives, content for learning, interactive quizzes, assessments, etc.
- c. **Audio-visual SCORM (Shareable Content Object Reference Model) content development-** Once the storyboard was approved, audio-visual, interactive content was developed, and animated characters fused life into the content. Interactivity points were added; and after a certain duration of learning, learners could take quizzes and play games and be rewarded. The audio-visual content of RISE has on-screen text, visuals, easy to understand charts and detailed graphics, etc. It also includes recording human voice-overs for characters to carry the narrative which the learners listen to.
- d. **Translation-** Since the App was a platform of self-learning, dissemination of the content in regional languages for better understanding and uptake was a pressing priority. Keeping the English language as a base, the content was further translated into Hindi, Odia, Tamil and Marathi for the pilot phase. The tedious efforts fruition as it helped the learners to improve their knowledge with minimal external supervision.
- e. **Mechanism to gauge knowledge-** Pre and Post assessment was added in each module, which tested learners' knowledge recall leading to e-certification. The scoring levels are as follows:

- I) 85-100% - Gold certificate
- II) 70-84% - Silver certificate
- III) 0-69% - Fail and reattempt the entire module

The assessment questions were taken from the module itself. The learners were given a chance for a second attempt in case they could not succeed in the first. In case any learner does not pass the post-assessment even in the second attempt, they must go through the entire module once more to improve their knowledge.

The assessment and certification processes are integral and important indicators for measuring the gain in knowledge and the effectiveness of the module, and they are appealing features of the application. After post-assessment, beautifully designed e-certificates generated instantly in the phone of the learner and undersigned by the state health authority with the state's health emblem were truly incentives for the learners to take the course.

The content of the RISE module is also an integral part of the process of blended learning. The RISE e-learning modules complement the traditional routine immunization classroom training, and both led to the blended learning model. RISE provided continuous, interactive, self-learning opportunities for health workers to keep learning on-going during pandemic times, which demonstrates the utility of the digital innovation of learning and provides a great example of blended learning.

## 2.6 Mode of delivery of the content – Learning Management System (LMS)

To organize this new process and platform for learning, the RISE team implemented a learner-centric methodology for developing the Learning Management System (LMS), a software designed to create, distribute, and manage the delivery of user-directed training content and to monitor the learners' progress and certification by different levels of supervisors. This software application assists the administration, documentation, tracking, reporting, automation and delivery of educational courses, training programs, or learning and development programs.

LMS delivers and manages all types of content, including video, courses and documents. In the education and higher education markets, an LMS includes a variety of functionality and has features such as rubrics, teacher and instructor facilitated

learning, a discussion board, and often the use of a syllabus.

**There are six major advantages of LMS:**

1. Interoperability
2. Accessibility
3. Reusability
4. Durability
5. Maintenance Ability
6. Adaptability

**Other advantages include:**

- Supporting content in various formats: text, video, audio, etc.
- Easy accessibility of the material at the time and place of choice.
- Trainer modifiable content.
- Trainees access to the updated material.
- Fair and easy learners' evaluation, based on learners' attendance and online quizzes.
- Tracking of learner's performance by Supervisors.

The LMS makes it easy to create courses and make changes, provides learning experiences that are adapted to each learner, and gives administrators and learners an opportunity for online collaboration. The LMS can also be scaled-up easily, adding new learners and new courses as required.

Furthermore, the LMS enables the learners to monitor self-progress and the supervisors to monitor the progress and performance of learners under them, through built-in analytics. The information available through the LMS can help supervisors pinpoint learners who may need more support in acquiring updated skills and knowledge. The LMS offers multiple advantages for both learners and training administrators alike, such as the system organizes different interactive multimedia e-Learning content in one location, providing unlimited access to e-Learning materials, easily tracking learners' progress and performance. It also reduces overall training costs and time in comparison to in-person traditional training costs and keeps the organization up-to-date on training rollout.

The RISE platform has added a different dimension to capacity building in India by facilitating a learner-centric training approach. Learners could access and gain knowledge on their own, at their convenience, without the direct involvement of trainers. They are in-charge of their progress with little follow-up from supervisors.



## Section 3

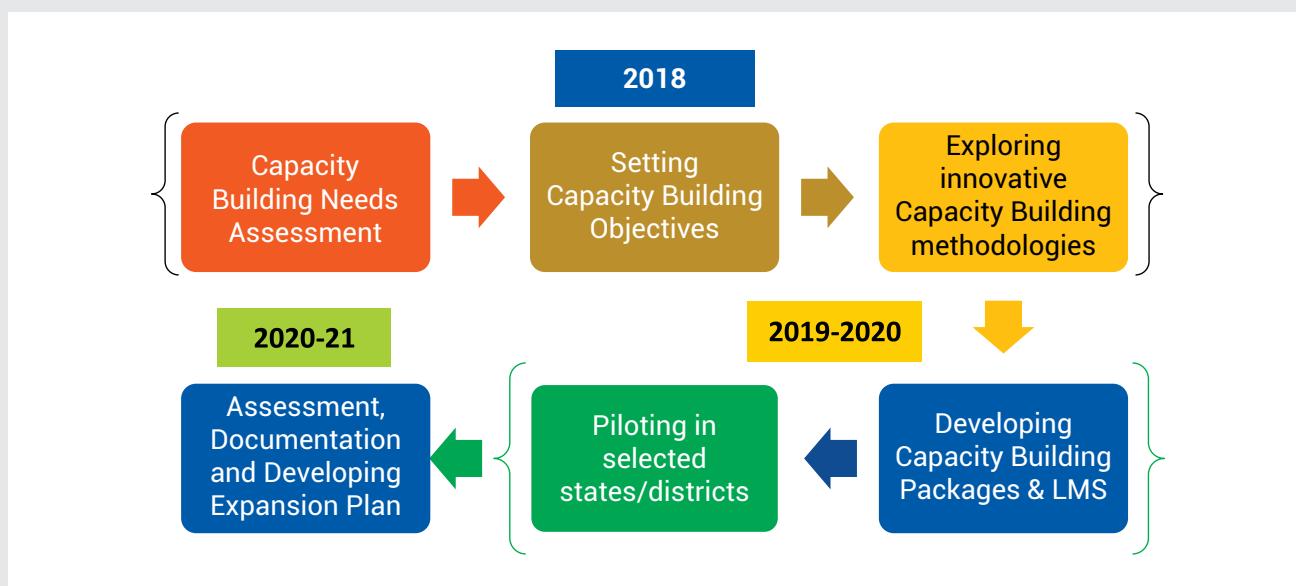
# Implementation of the RISE mobile-learning solution

### 3.1 Implementation Strategy

The implementation strategy was formulated after months of planning and discussions with MoHFW and States, and with partners - to ensure approval,

ownership, participation, and support for the implementation of the RISE learning package. When the module content and Learning Management System were ready, RISE App was introduced to the health workers (ANMs).

**Figure 4: RISE Project Implementation Strategy**



At the back-end, learners were registered onto the App and the App was made available on the Play store, following all security audits and other relevant clearances. On March 1st, 2020, the first module of RISE was made available to all users. While RISE was being implemented, technological troubleshooting and other support were provided by the RISE team to the learners. Some of the existing WhatsApp groups and some groups were created at district and block levels. These groups were used to provide quick solutions to issues. These groups also became a wonderful platform to motivate learners on their good performance and for their colleagues and seniors to congratulate them on their learning achievements.

Between March and July 2020, five modules went live for the health workers to take the course. Wherever required, the JSI team supported those learners who faced problems in registering themselves or in completing the RISE training course (see more detail in section 3.2).

The learners who had finished all of their assigned modules were engaged, subsequently, by utilizing the existing WhatsApp groups as an experimental method to exchange discussions and sharing information of the launch of the quizzes in two of the five districts.

Additionally, 12 more quizzes (covering all 5 modules) were uploaded at weekly intervals on the LMS for all

5 districts. It was ensured that there was no break in the learning. Based on quizmaster completion, encouraging data was received as learners continued to take these quizzes. Overall, 70% of the total learners completed the quizzes of the quizmaster (Detail analysis available under the sub heading 6.2: Blended Learning from WhatsApp group: An Experiment under Section 6)

## 3.2 Cascade Approach

### 3.2.1 RISE launch and State-level orientation

Under the guidance of the Ministry of Health and Family Welfare (MoHFW), John Snow India (JSI) organized a National Launch Workshop of RISE, on 19th December 2019 at The Grand, New Delhi. Dr. M.K. Agarwal, Additional Commissioner, UIP launched the RISE application, along with the senior health officials from five pilot states. The event was attended by several partner organizations (WHO, UNICEF, UNDP, NCCVMRC, ITU, CHAI, CORE, BMGF, USAID).

#### Highlights of the Workshop

- The RISE App was launched and a glimpse of the project was delivered to the audience.
- Importance of such digital platform/e-learning to strengthen capacity of the health workers was cited.
- Tentative launch dates in the intervention states were finalised by the state representative government officials.
- Scalability and sustainability of such game changer programs were discussed.

Dr. M.K. Agarwal, Additional Commissioner, UIP presented an overview and roadmap of the RISE package. He explained the background of the project and its objective. He presented the roadmap of RISE and gave direction to the RISE states for a successful rollout of the project. During the workshop, participants



Picture 3.1: National Launch Workshop, December 2019

were acquainted with the steps followed in the development of the RISE package and got a glimpse of the RISE mobile App. It also paved the way for the subsequent state launches, cascade orientation sessions and the final go-live of RISE modules.

Since the project aims to reach the health workers at the micro-level, RISE adopted a cascade approach to train and build the capacity of the officials at all levels. The National Launch of the RISE App was followed by the launch at the state levels and orientation of a pool of master trainers from district and blocks who were later responsible to train the learners (end-users of the RISE application). The launch and state orientation were conducted from January to February 2020.

- Pune, Maharashtra 08 January 2020
- Chennai, Tamil Nadu 09 January 2020
- Bhubaneswar, Odisha 14 January 2020
- Shimla, Himachal Pradesh 24 January 2020
- Bhopal, Madhya Pradesh 06 February 2020



Pune, Maharashtra



Chennai, Tamil Nadu



Bhubaneswar, Odisha



Shimla, Himachal Pradesh



Bhopal, Madhya Pradesh

Picture 3.2: State Level Launch Workshops, Jan-Feb 2020

### 3.2.2 Block Level orientation of RISE application

The master trainers conducted orientation of health workers (the end-users of the application). During these sessions, the users were given an overview of RISE. Participants also took a short "orientation module" in which all essential features of the module in terms of its functioning were covered. The idea was to give the learners hands-on practice right from the process of downloading, installation of the RISE App and how to generate the certificate upon completion. A user manual on "How to use the RISE App?" in their local language was also provided to the users as a guidebook to be used later on.



Picture 3.3: RISE user manual

This orientation exercise at the block level was carried out from January to February 2020. During this period, about 3000 learners and supervisors were trained across 97 batches in the five pilot districts. The orientation prepared the users to take the modules as soon as they went live.

Picture 3.4: Block level Orientation of RISE training App, Jan-Feb 2020





### 3.3 Go-live of RISE modules

The RISE modules were made live (rolled out through the RISE App) from March to July 2020 in 5 pilot districts of 5 states. Unfortunately, the period coincided with the beginning peak of the COVID-19 pandemic in the country. However, given the digital approach, RISE provided a unique and safe opportunity to the health workers in pilot districts to go through the modules

and to improve their knowledge and skills regarding immunization remotely from their homes/workplaces. In consultation with the MoHFW, a period of 1 month was provided to the health workers, enabling them to complete each of these self-learning modules along with the additional COVID-related work responsibilities.

The Go-live dates for the 5 modules are shown in **Figure 6**.

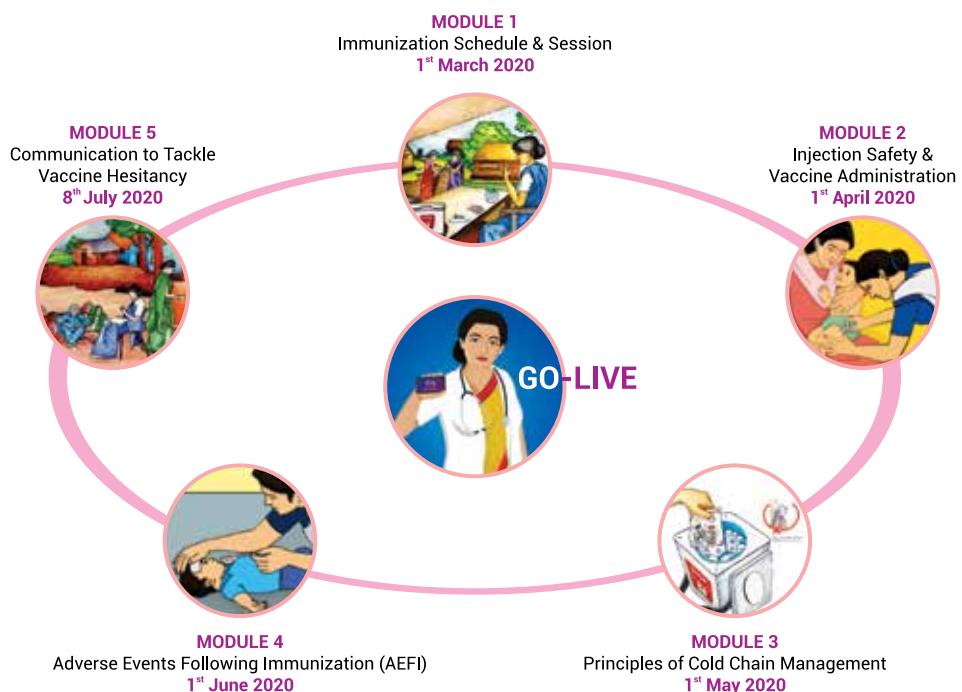


Figure 5: Go- Live Calendar of RISE App

### 3.4 Concurrent Monitoring and Documentation- RISE Bulletin

The highly dynamic RISE Dashboard provided continuous progress for the learners once the modules have been rolled out. The dynamic progress was continuously observed and documented via the RISE weekly Bulletin (later fortnightly and lately once in a month) (<https://risemohfw.in/rise-bulletin>), under the guidance of the Ministry of Health and Family Welfare (MoHFW).



**Picture 3.5: RISE Dashboard**

The progress was documented weekly where above mentioned parameters were covered. The RISE bulletin reached the stakeholders at the National, state and sub-district level. Major components of the bulletin include:

- **Riveting Bytes-** The WhatsApp groups at each block in the districts played a vital role in dispensing

The dashboard displays the following parameters:-

- Percentage of users who started and completed the module
- Percentage of users - types of the certificate generated
- Average percentage of pre-test and post-test scores

two-way communication and facilitating RISE learning. The learners in the groups not only shared their joy of completing the modules but also found it a platform to resolve their queries, troubleshooting and give suggestions as well. The Riveting Bytes section covered such interactions among the learners with their supervisors.

- Highlights-** Covered the highlights of the contents in the current issue of the bulletin.
- Learners scored 100% marks in "Post Test" in "All five modules" -** This section covered names of learners who have scored 100% marks in the modules.
- 100% completion of "last Module" & "All Modules" this Week-** This section covered the names of blocks where 100% of users have completed the training
- Stories from the Field-** There were stories narrated by the health workers, mostly describing the utility of the app in the field, flexibility and knowledge improvement platform and bridging the gap

DISTRICT, STATE	NO. OF TARGET USERS
SHIMLA, HIMACHAL PRADESH (HP)	286
PUNE, MAHARASHTRA (MH)	1107
BHOPAL, MADHYA PRADESH (MP)	261
KHORDHA, ODISHA (OD)	414
KANCHEEPURAM, TAMIL NADU (TN)	468
TOTAL	2536

Picture 3.6: RISE Bulletin

RISE bulletins have been instrumental in putting the spotlight on success stories and feedback shared from the learners, thus underlining the learner-centric work of this project. One such example is highlighted below:

"Earlier I was apprehensive about the AEFIs occurring among the beneficiaries but RISE App was very useful in clearing my doubts and giving me confidence for administering vaccines without fear. Further, it taught me to offer immediate and appropriate treatment in case of AEFI occurs."

...A health worker from Tamil Nadu after obtaining Gold certificate in Module 4

between training and knowledge, which not only motivated and inspired other learners but also built an affable competition among the learners as well as the development of peer-to-peer learning. It also helped supervisors to develop a bond with the health workers working under them. Further, it helped to track the progress of the health workers, troubleshoot their problems and clarification of doubts at the monthly or block-level meetings.

The stories further gave momentum among the learners in the form of a collegial competitive environment, inculcation of peer-to-peer learning, supportive supervision and confidence among the learners, especially senior age cohorts of ANMs in the states.

#### Some key findings

- There is a definite knowledge gain as evident from higher post-test marks as compared to the pre-test marks. The gain is more in Module 2
- Majority of the learners complete the modules & pass the assessment in 1<sup>st</sup> attempt and with a Gold Certificate
- A large chunk of the users completes the module within first 10 days of release of the module



#### Upcoming Module



#### PRINCIPLES OF COLD CHAIN MANAGEMENT

#### This Week's Highlights

"We bring learning to people instead of people to learning"

Mrs. Prabha Zinta,  
HSC Tharola, Block Kotkhai,  
District Shimla, Himachal Pradesh

In Feb 2020, Mrs. Prabha, a senior health staff with 30+ years of experience, met with an accident and got both her legs fractured. She was admitted at the Indira Gandhi Medical College Hospital, Shimla and could not attend the block-level training for RISE. Currently she has been discharged from hospital and recuperating in her home till she is fit enough to resume her duties.

She came to know about the RISE application through her colleagues and the WhatsApp group created in the block for RISE. She got interested and though she was not trained in using the app, downloaded the application in her personal mobile with guidance from her peers. She faced some problems with internet connectivity at times, but maintained her zeal and successfully completed both the modules with Gold certificates. This is a testimony of the enthusiasm RISE has generated among the learners and they are enjoying learning even when off-duty



#### Congratulations!

Blocks with 100 percent completion of  
Module 2;

Block Kumarsain and Nankhari,  
District Shimla  
Himachal Pradesh

Block Jatani,  
District Khordha  
Odisha

We appreciate the leadership!

For further details, please contact;  
JSI India, Plot No 5 & 6, Local Shopping  
Complex, Nelson Mandela Marg, Vasant  
Kunj, New Delhi-110070

Innovate Improve Immunize

## Section 4

# Baseline and Endline Assessment

### 4.1 Sampling Frame and Sample Size in Intervention Districts

The sampling frame and sample for the intervention districts were derived statistically for the surveys - i.e., ANMs knowledge assessment survey and ANMs practice survey at the session site for baseline and end line are mentioned below:

**Table 4: Sampling frame and sample size in Intervention Districts**

Sl. No.	State	Intervention District (ID)	No. of blocks	Sampled Blocks	No. of Health workers	Sample size for ANM knowledge assessment	Sampled ANM for Practice Survey
1	Himachal Pradesh	Shimla	10	3	310	57	9
2	Madhya Pradesh	Bhopal	2	2	135	42	6
3	Maharashtra	Pune	13	3	1334	69	12
4	Odisha	Khordha	10	3	254	54	9
5	Tamil Nadu	Kancheepuram	13	3	257	54	9
		<b>Total</b>	<b>48</b>	<b>14</b>	<b>2290</b>	<b>276</b>	<b>45</b>

### 4.2 Sampling Frame and Sample Size in control districts

**Table 5** presents the sampling frame and the sample size drawn for the control districts as well for the baseline and the endline surveys.

**Table 5: Sampling Frame and sample size in Control Districts**

Sl. No.	State	Control District (CD)	No. of blocks	Sampled Blocks	No. of Health Workers	Sample size for ANM knowledge assessment	Sampled ANM for Practice Survey
1	Himachal Pradesh	Solan	5	3	184	48	10
2	Madhya Pradesh	Indore	4	2	289	54	8
3	Maharashtra	Nagpur	14	3	574	63	9
4	Odisha	Jharsuguda	5	3	90	36	6
5	Tamil Nadu	Madurai	13	3	298	57	10
		<b>Total</b>	<b>41</b>	<b>14</b>	<b>1435</b>	<b>258</b>	<b>43</b>

#### 4.2.1 Sampling for ANM Knowledge Assessment Survey

A multi-stage cluster sampling method was used for drawing sample size for the ANMs knowledge Assessment survey. Based on this, a sample size of 276 ANMs was selected in the intervention districts, and a sample size of 258 ANMs was chosen to be surveyed in the control districts. The sample size was calculated based on 95% confidence level,  $\pm 10$  standard error, and with 0.75 design effect. The sampling was conducted based on the following process:

- 1. Stage one sampling-** This involved cluster sampling to identify blocks/areas in three stratum/clusters i.e., urban, peri-urban or urban hinterlands and rural in each project intervention and control districts. As all the project intervention districts are the state headquarters having urban areas, the total blocks in three clusters were based on the location of the blocks. Cluster-1 was characterised by the urban blocks, Cluster-2 had the peri-urban blocks adjoining to the urban blocks and Cluster-3 had the rural blocks that are not influenced by the urban areas (with an assumption that the knowledge and practice levels of the health workers in each stratum would be same).
- 2. End stage sampling-** This involved a simple random sampling for the selection of 276 ANMs in 14 clusters of the five intervention districts and 258 ANMs in 14 clusters of the five control districts. This ensured that all the targeted health workers had an equal probability of being randomly selected in the sample within the cluster.

#### 4.2.2 Sampling for ANMs Practice Assessment Survey

The sample for the practice assessment survey was the subset of the sampled health workers who were selected for the knowledge assessment survey. They were 15% of the sampled ANMs for the knowledge assessment survey. This ensured that all ANMs had an equal probability of being sampled out of the already sampled ANMs. Using a simple random sampling method, ANMs were selected for the survey. A total of 88 ANMs (45 from Intervention and 43 from Control district) were observed during the baseline and endline surveys. Notably, the same ANMs were sampled and observed for endline survey who were sampled and observed during baseline. It is because the changes in the practices would be visible in the same sample

after completing the RISE training course. Likewise in the control districts, the same health workers were sampled and observed during baseline and endline surveys.

#### 4.3 Data Collection Tools and Training

Both the baseline and endline data were collected using digital formats developed by an IT agency for developing ICT-based tools. Data were collected by the JSI team using the digital tools during the stipulated period from September to November 2019. Likewise, data collection for the endline assessment was from October to December 2020. The questionnaires were finalized after field testing. The Knowledge Assessment survey questionnaire was comprised of 30 questions which were divided into five sections (Annexure-I). These 30 questions represented five modules of the RISE Application (**Table 6**)

**Table 6: Division of sections in the ANM Knowledge Assessment questionnaire**

Sections	Number of questions
Module-1 Immunization Schedule and Session Management	08
Module-2 Injection Safety and Vaccine Administration	04
Module-3 Principles of Cold Chain Management	06
Module-4 Adverse Events Following Immunization (AEFI)	06
Module-5 Communication to Tackle Vaccine Hesitancy	06
<b>Total</b>	<b>30</b>

The Practice Assessment questionnaire was comprised of a set of 11 key parameters about the actual practice followed by the vaccinator at the session site, and the JSI team observed these at the session sites. These parameters assessed the practices of UIP guidelines ANMs carried out at the session sites. (Annexure-II)

#### 4.3 Data Analysis and Report writing

The Data analysis process was divided into several stages- collection of data and information from the field, data cleaning, thematic segregation of qualitative

data and cross checking with the state team to check data accuracy. For a double check, data was cleaned separately at the state, district and block levels through maintaining standard data cleaning parameters. Each response and detail were matched and sorted accordingly. The data cleaning and sorting processes helped to create files for data analysis purposes.

Broadly, the pivot table approach, data visualisation and univariate calculations were carried out with Microsoft Excel, version 16. The analyses majorly provided i) concurrent monitoring parameters such as course completion rate, certification states and pre-test and post-test assessment scores, ii) baseline and endline knowledge levels of the learners, iii) results for the baseline and endline practice assessment. It is important to note that the analyses of baseline and endline data were carried out at three levels-

- I. Aggregate level of baseline and endline scores from intervention districts
- II. Aggregate level of baseline and endline score from control districts
- III. Comparison of intervention versus control districts

Furthermore, for quantitative data analysis, IBM SPSS statistics (version 21), statistical software was used to carry out parametric tests to substantiate the findings statistically. In addition, upon deriving the qualitative data, particularly manuscripts of In-depth interviews, thematic analyses were carried out with Atlas.ti, (Atlas.

ti Scientific Software Development GmbH, version 5.1) software for the qualitative analysis. The interviews were coded into several themes that expounded the varied perceptions of the respondents (ANMs/ Block level officer, district level officer) towards the RISE App. Further, verbatim were selected from the scripts and used in the present report to substantiate the quantitative findings.

It is important to mention that the In-depth Interviews were carried out in the regional languages of the five states which were translated into the English language for analysis purposes with higher accuracy of the essence and meaning of the words expressed by the learners.



## Section 5

# Results and Discussion

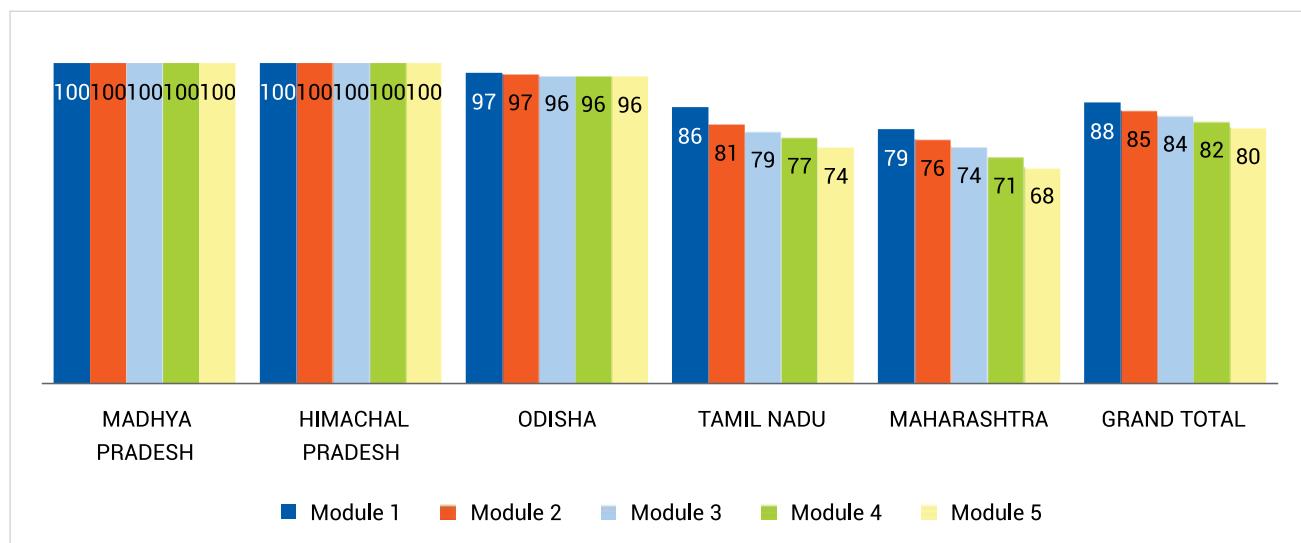
This section of the report is comprised of the results and findings of the assessment carried out at different points of time during the pilot phase of the project. The results are divided into the following categories:

- Findings from the RISE dashboard (up to 31st December 2020)

- Effectiveness of the RISE training App: Evidence from Baseline and Endline Assessment
- Effectiveness of the RISE training: Improvement in Immunization practices.
- Qualitative survey findings

### 5.1 Findings from RISE Dashboard

Figure 6: Percentage of learners who completed RISE training



As soon as Module 1 was rolled out, the RISE dashboard started populating the progress of each learner across the intervention districts. The dashboard continues to display the progress held so far. The data of the learners who have completed the RISE training by the end of the year 2020 is analyzed and presented in Figure 6.

Module-wise, the completion was highest (88%) in Module 1 which had reduced marginally in subsequent modules to reach 80% in Module 5. Thus, the full completion (all RISE modules) was considered to be 80%. State-wise, Himachal Pradesh and Madhya Pradesh had 100% completions and Odisha also had a very high (96%) completion rate. However, the completion rates in Tamil Nadu and Maharashtra were comparatively less (74% & 68%, respectively).

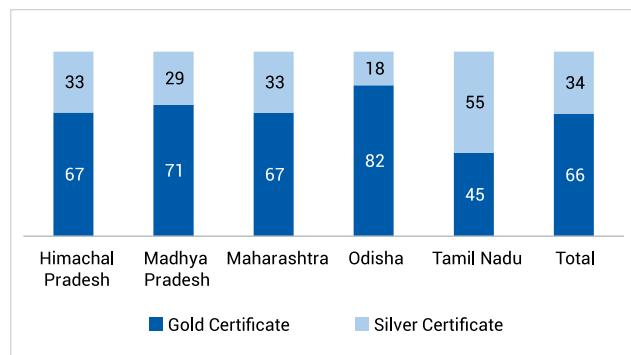
Figure 7: Module-wise certification status (%)



Figure 7 shows the certification status after the course completion by the learners. Overall, 66% of the learners earned gold e-certificates while 34% of the learners earned silver certificate in the course. Module-wise, the proportion of gold certificate varied

from 54% to 73%, the highest (73%) being in Module 3 and the lowest (54%) in Module 1.

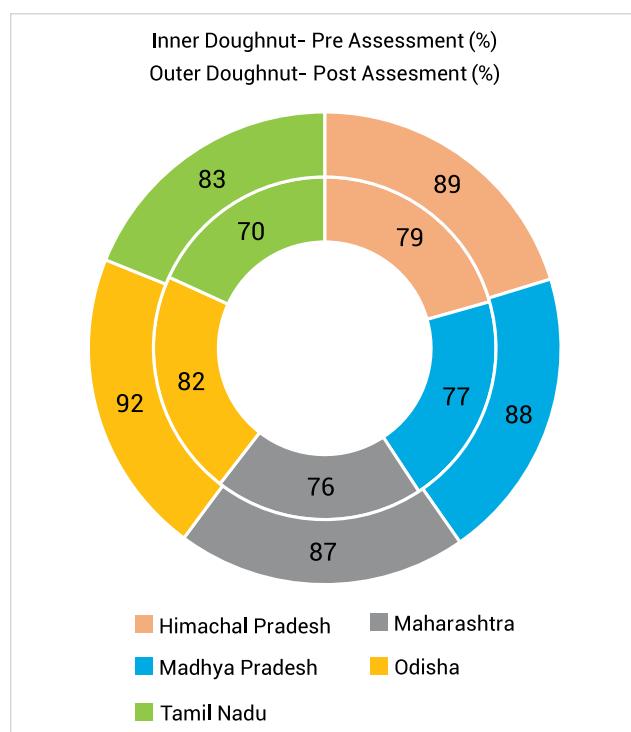
**Figure 8: Certification status in Intervention districts**



The state-wise findings (**Figure 8**) reflected that overall, 66% of the learners received gold certificates while 34% of the learners earned silver certificates. Learners from Odisha earned more gold certificates as compared to other states, followed by Madhya Pradesh and Himachal Pradesh.

During the modules roll-out, the JSI team and state officials received countless stories of the e-certificates which showed appreciation for the course by the learners.

**Figure 9: State wise knowledge improvement between Pre and Post Assessment score (%)**

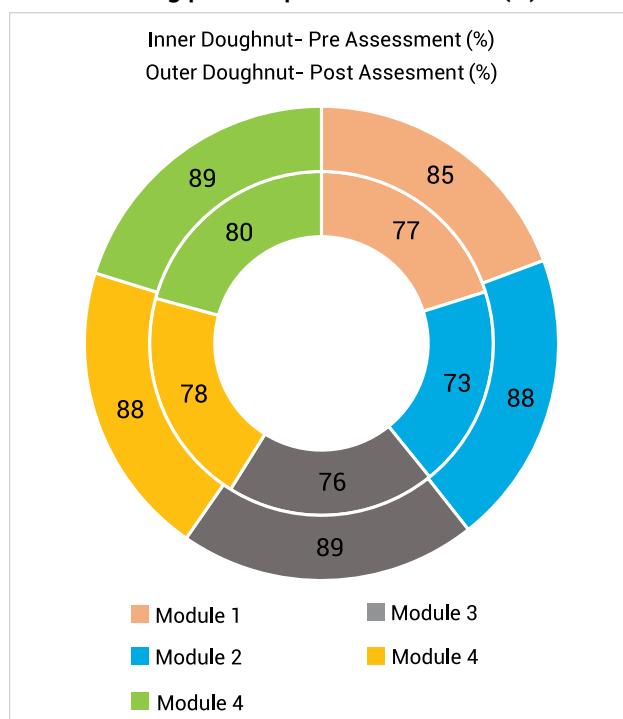


The dashboard further provided pre and post-assessment scores that indicated improvement in the knowledge levels of the learners after completing

the modules one by one and, subsequently, the entire course (Figure 9).

Overall, an 11 points improvement in knowledge levels of the learners, based on pre and post-assessment scores (77% during pre-assessment and 88% during post-assessment) was observed. State-wise, a remarkable improvement of 13 points (70% during pre-assessment and 83% during post-assessment) was observed in Tamil Nadu followed by 11 points each in Maharashtra and Madhya Pradesh. In Himachal Pradesh as well as in Odisha, the learner's knowledge had increased by 10%.

**Figure 10: Module wise improvement of knowledge during pre and post-assessment (%)**



**Figure 10** depicts that module-wise, the most notable knowledge improvement (15 points) was observed in Module 2 (73% during pre-assessment to 88% during post-assessment) which focused on "Injection Safety and Vaccine administration", followed by 13 points improvement (76% during pre-assessment to 89% during post-assessment) in Module 3 on "Principles of Cold Chain Management".

## 5.1 Effectiveness of RISE training App: Improvement in Knowledge

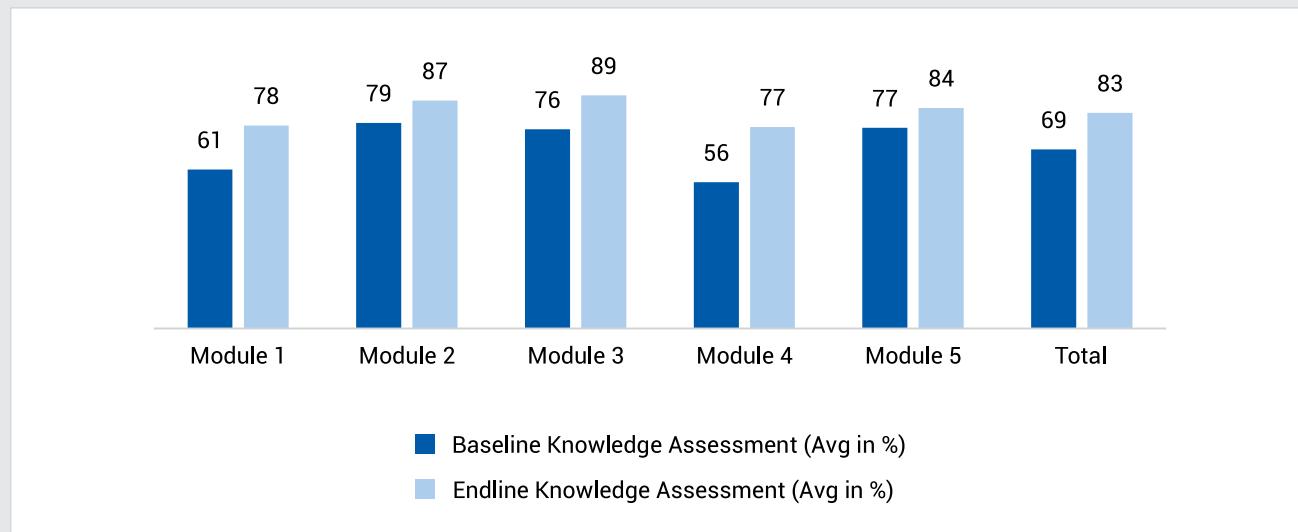
### a) Comparison between Baseline and Endline in Intervention Districts

Improvement in the knowledge and skills on immunization of the health workers working in the

field providing vaccination to children and pregnant women was the prime objective of the project. The baseline survey was carried out during September-

October 2019 while the endline assessment was completed during October-December 2020.

**Figure 11: Comparison of Baseline and Endline Knowledge Assessment in RISE Intervention districts**



The comparison between baseline and endline knowledge assessment of the learners (Figure 11) elucidates that there was a significant knowledge gain among the learners after taking the RISE training course. Overall, a gain of 14 points was observed from baseline to endline among the health workers. Module

wise, the highest knowledge gain was observed in Module 4 (21 points), followed by Module 1 (17 points), and Module 3 (13 points).

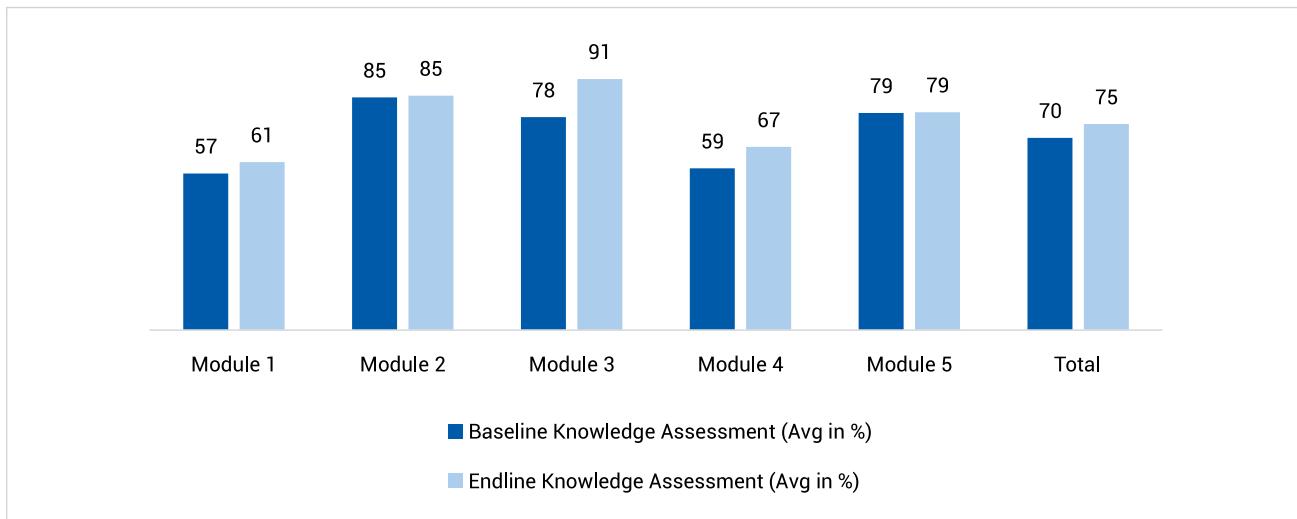
The results were supported with a paired-sample t-test to compare the levels of knowledge before and after taking the RISE training app.

**Table 7: Paired t-test results showing learning effectiveness of RISE application in Intervention Districts.  
Sampled population (N= 275)**

Modules	X (Baseline)	SD	X (Endline)	SD	t(df)	P-Value	Mean Difference
Module 1	61	20	78	19	10	<0.05	17
Module 2	79	21	87	18	5	<0.05	9
Module 3	76	16	89	11	11	<0.001	13
Module 4	56	24	77	19	11	<0.001	21
Module 5	77	21	84	16	4	<0.05	8
Overall	68	14	82	11	12	<0.001	14

From **Table 7**, it is evident that the RISE application showed significant effectiveness in terms of improving knowledge levels among the learners.

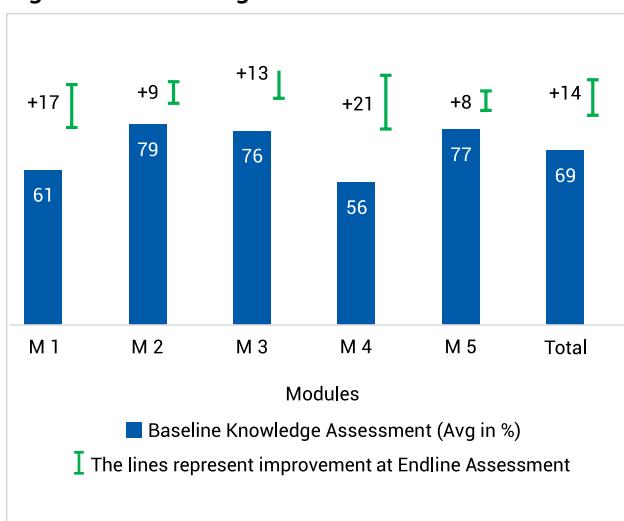
**Figure 12: Comparison of Baseline and Endline Knowledge Assessment in RISE Control districts**



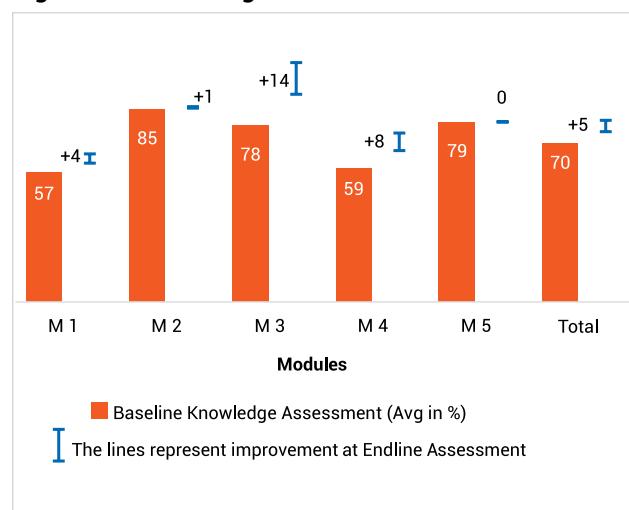
**Figure 12** is a comparison of knowledge gain among the health workers in the control districts of the project from baseline to endline. Being a control group, an overall knowledge gain among the learners was observed as 5% (70% during baseline and 75% during endline). Module-wise, the highest difference in knowledge was observed in Module 3 (78% during baseline to 91% during endline assessment). The increase in knowledge in Module 3 might be due to regular training held through an e-VIN network. The increase in Module 4 (08 points) and Module 1 (04 points) might be an outcome of AEFI training that was held regularly in the control districts.

### b) Comparison of knowledge gain between Intervention and Control Districts

**Figure 13: Knowledge Gain in Intervention Districts**



**Figure 14: Knowledge Gain in Control Districts**



When intervention and control districts of the project were compared from baseline to endline (**Figure 13** and **Figure 14**), it was observed that the learners from the intervention districts scored less than the learners from the control districts, except Module 1 during the baseline.

However, a significant knowledge improvement was recorded during the endline assessment which could be linked with the RISE training course taken by the learners in the intervention districts. As reflected, knowledge levels of the learners have increased in all the modules, overall, with 14 points increase observed in the intervention districts while a five points increase was observed in the control districts. As learners shared benefits of module 4 on "AEFI", the results did reflect an increase of 21 points in the intervention

districts while it is 8 points in the control districts. An 8-points knowledge gain was observed on module 5 in the intervention districts whilst the knowledge level remains the same in the control districts.

It can be concluded that the findings as well as the testimonies of the learners show that knowledge improvement is an outcome of the RISE training course in the intervention districts

## 5.2 Effectiveness of RISE training- Improvement in Immunization Practices

The pilot project envisaged improving the routine immunization practices of the health workers who have been surveyed during the baseline assessment. Practice assessment is considered to be a mirror for the health workers where their learnings are reflected.

### a) Comparison between Baseline and Endline

The routine immunization practices of sampled health workers (45) were observed with the help of a set of 11 parameters during the baseline survey. The endline assessment survey was carried out with the same learners to assess any change in their practices after completing the training course. The assessment presented in **Table 8** indicates improved practices among vaccinators after receiving the training.

For example, during the baseline survey, only 22% (10) of the ANMs were updating MCP card immediately after giving vaccinating the beneficiaries and asking caregivers to wait for 30 minutes after vaccination. ANMs using the red bags to collect plastic syringes immediately after using a hub cutter and giving four key messages to the caregivers were also observed at the lower side during the baseline.

**Table 8: Paired T-test results showing Learning Effectiveness indicative through Practice Improvement Assessment.**

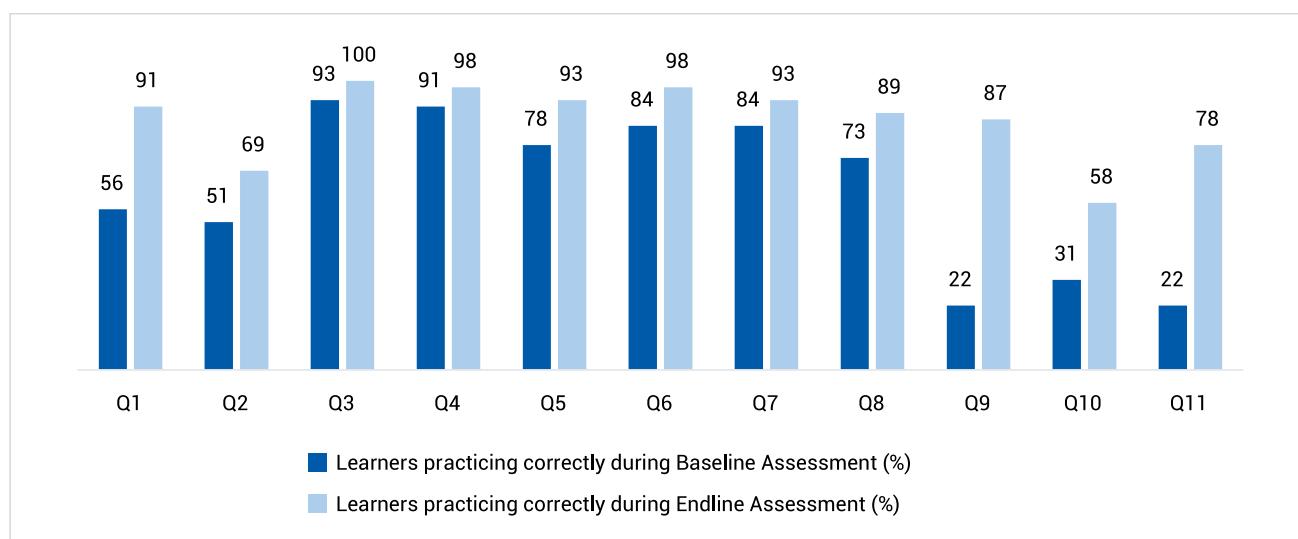
Sampled Health Workers (N=45) in the intervention districts

Correct practices observed	ANMs practicing correctly before RISE training	X	ANMs practicing correctly after RISE training	X	P-Value	Net Change (n.c)
1. Mark date and time after opening each vaccine vial	25 (56)	1.6	41 (91)	1.9	<0.001	0.356
2. Place heat-sensitive vaccines on ice pack	23 (51)	1.5	31 (69)	1.7	<0.05	0.178
3. Does not use reconstituted vaccines after 4 hours of reconstitution	42 (93)	1.1	45 (100)	2	<0.001	0.933
4. Does not touch needle during vaccination	41 (91)	2.5	44 (98)	2.4	n.s*	0.044
5. Uses correct route of vaccination	35 (78)	2.2	42 (93)	2.4	n.s*	0.178
6. Uses correct site for administering vaccines to a child	38 (84)	2.3	44 (98)	2.5	<0.001	0.156
7. Cut hub of both AD and disposable syringes immediately after use	38 (84)	2.2	42 (93)	2.4	<0.05	0.156
8. Uses Red bag for collecting the plastic part of the syringes immediately after using the hub cutter	33 (73)	1.9	40 (89)	2.1	n.s*	0.222
9. Update MCP card and counterfoil immediately after vaccination	10 (22)	0.6	39 (87)	1.9	<0.001	1.289
10. All 4 key messages given to the caregivers	14 (31)	1	26 (58)	1.1	n.s*	0.089
11. Ask the caregivers to wait for 30 minutes after vaccination	10 (22)	0.7	35 (78)	1.5	<0.001	0.8
Note: n.s* reflects to non-significant values						

After taking the training course, significant changes in practices were observed. The net change obtained from the difference of means (Table 8), showed that significant changes were observed with ANMs updating the MCP cards and counterfoils immediately after vaccination (n.c. 1.289, p<0.001) and asking caregivers to wait for 30 minutes after vaccination (n.c 0.800, p<0.001). All the health workers (100%) now do

not use the reconstituted vaccine after four hours of reconstitution (n.c 0.933, p<0.001). Likewise, there was an improvement in the practices such as placing heat-sensitive vaccines on ice packs (n.c 0.178, p<0.05), and correct site for administering vaccines to a child (n.c 0.156, P<0.001). Hence, it can be inferred that there has been an improvement in the practices of health workers.

**Figure 15: Learners practicing correctly at session sites during Baseline and Endline Assessment in RISE intervention districts**



**Figure 15** supports the above findings, indicating a significant increase in performing correct immunization practices, particularly for the questions of: updating MCP card and counterfoil soon after vaccine administration (Q.9) (22% during baseline to 87% during the endline); asking caregivers to wait for 30 minutes after immunization (Q.11) (22% during baseline to 78% during endline); marking date and time after the opening of each vial (Q.1) (56% during baseline to 91% during endline); and giving four key messages to the caregivers before leaving the session sites (Q.10) (31% during baseline to 58% during endline).

Remarkable progress was also observed among the learners about: placing heat-sensitive vaccines on ice packs (Q.2) (51% to 69%); using the correct route of vaccination (Q.5) (78% to 93%); correct site of administering vaccination (Q.6) (84% to 98%); using the red bag for collecting plastic parts of the syringes (Q.8) (73% to 89%); and discarding reconstituted vaccine after four hours of reconstitution (Q.3) (93% to 100%).

As learners continued to share their experiences especially the benefits of the RISE training course in the field, one of the VHNs from Tamil Nadu reported that

*"I have remembered all the pre- and post-assessment questions related to Module 4 which will help me in the routine immunization whenever I go to the field."*

Likewise, one of the ANMs from Madhya Pradesh mentioned that

*"AEFI chapter is very useful for our daily routine immunization."*

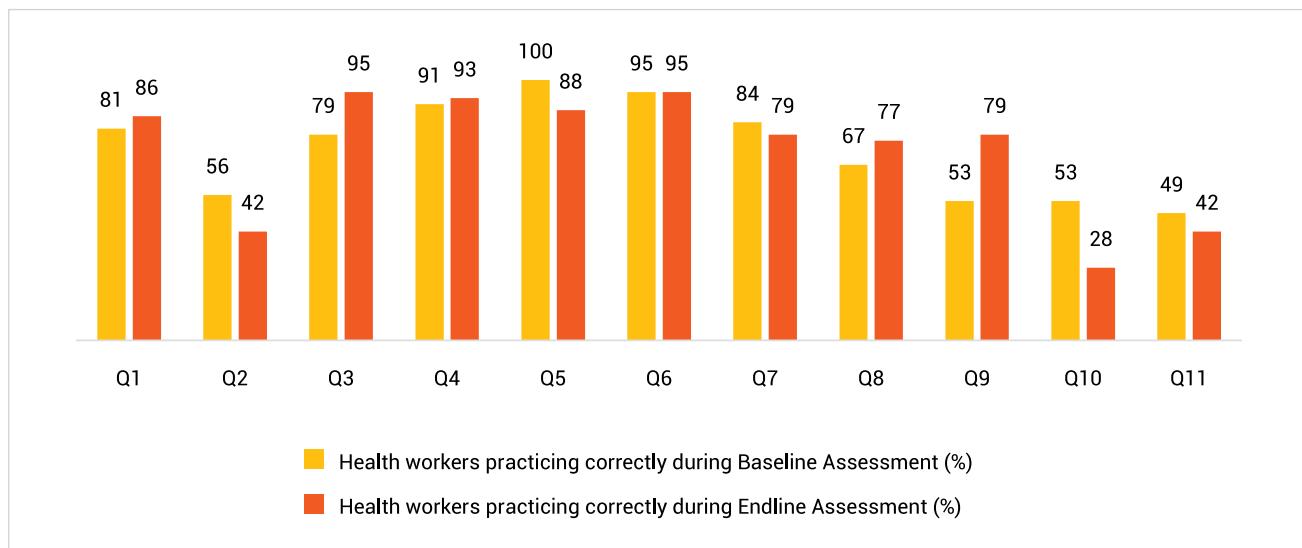
Another ANM from Maharashtra stated that

*"AEFI module and the entire RISE application is a very useful and important tool to improve my immunization knowledge."*

One of the ANMs from Himachal Pradesh mentioned that

*"Principles of Cold Chain Management is an excellent module."*

**Figure 16: Health workers practicing correctly at session sites during Baseline and Endline Assessment in RISE Control districts**



For **control districts**, some differences in routine immunization practices were observed from baseline to endline (**Figure 16**). Parameters-wise, detailed analysis showed that practices have improved about updating MCP card and counterfoils soon after vaccination (Q.9) (53% to 79%); discarding reconstituted vaccines after four hours of reconstitution (Q.3) (79% to 95%); using red bags for collecting plastic parts of the syringes (Q.8) (67% to 77%); followed by marking date and time after opening each vial (Q.1) (81% to 86%).

During the endline assessment, 28 % of the health workers were giving four key messages to the beneficiaries after vaccination (Q.10); 42% of the health workers placed heat-sensitive vaccines on ice-packs (Q.2); 42% of the health workers asked caregivers to wait for 30 minutes after vaccination (Q.11) and 79% cut the hub of AD and disposable syringes soon after use vaccination (Q.7).



Picture 5.1: Endline Practice Assessment Survey, Nov-Dec 2020

### b) Comparison of practices between Intervention and Control Districts

Figure 17: Improvement in Practices of Health Workers in Intervention Districts

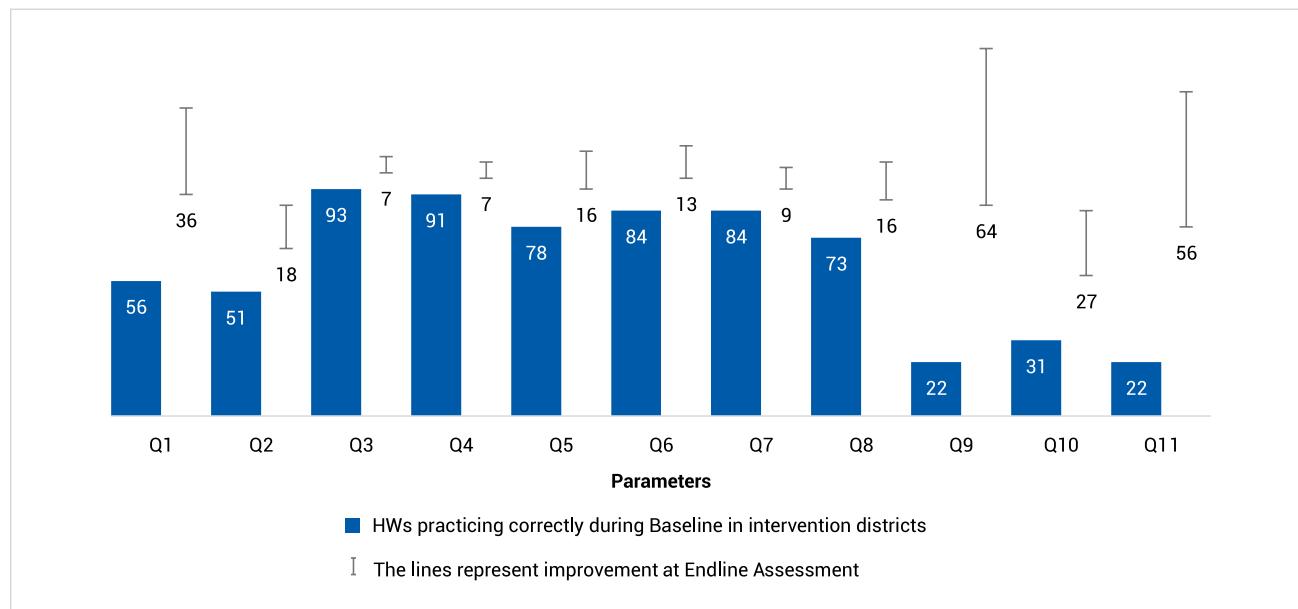
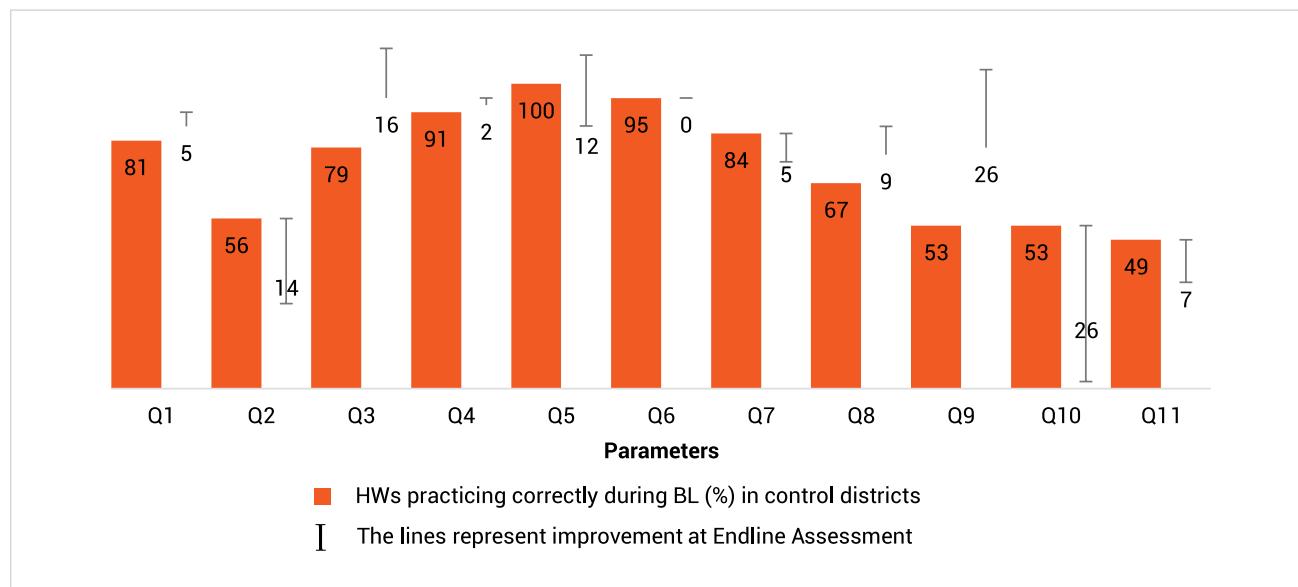


Figure 18: Improvement in Practices of Health Workers in Control Districts



**Figure 17** and **Figure 18** showed the practice deviation from baseline to endline in the intervention and control districts. Among all, the practice of updating the MCP card and counterfoil just after the immunization (Q.9) has improved remarkably in both. Moreover, health workers stopped utilizing the reconstituted vaccines following four hours of reconstitution (Q.3). After taking the RISE course in the intervention districts, substantial improvements in the practices were noticeable during the endline assessment. The healthcare workers have

improved in: updating MCP card and counterfoil just after the vaccination; requesting caregivers to wait for 30 minutes after immunization (Q.11); trailed by giving four vital messages to the recipients (Q.10), placing heat-sensitive vaccines on the ice-packs (Q.2). The outcomes depicted consistent improvement in the routine immunization practices, it is expected that the healthcare workers would keep on being benefitted from the RISE training course in the future as well.

### 5.3 Qualitative Survey Findings

A qualitative survey was carried out with different stakeholders during endline assessment to understand the difference and similarities of opinions about the

RISE App (**Table 9**). In this regard, in-depth interviews were carried out with the health workers who were the learners of the RISE training App.

**Table 9: Sampling Frame of Qualitative Data Collection**

Sl. No.	State	Intervention District (ID)	Sample size for Health Workers	Sample size at Block level	Sample size at District level
1	Himachal Pradesh	Shimla	6	3	1
2	Madhya Pradesh	Bhopal	6	3	1
3	Maharashtra	Pune	6	3	1
4	Odisha	Khordha	6	3	1
5	Tamil Nadu	Kancheepuram	6	3	1
<b>Total</b>			<b>30</b>	<b>15</b>	<b>5</b>

They shared their experiences of attending the RISE training and taking the course on their mobile phones. Further, they shared how the training is beneficial for them in the field and complementary to the traditional/ classroom instructor-led face-to-face training. In addition, interviews were also carried out with the Medical Officers, block and district level respondents who were involved in the implementation of the application in the district.



Picture 5.2: FGD with Health Workers during Endline Assessment, Himachal Pradesh, Nov-Dec 2020

Overall, the responses from the different stakeholders were quite encouraging and appreciated. The perceptions of the respondents are classified into the following themes of the interviewed respondents.

#### 5.3.1 RISE app training

As mentioned, approximately 3000 learners attended the RISE training which was held from January to March 2020. Those who attended the training stated that they found the training interesting and useful. One of the learners from Tamil Nadu mentioned that



Picture 5.3: In depth interview during Endline Assessment, Odisha, Nov-Dec 2020

*"Initially I was hesitant to attend the training as I felt whether I will not be able to complete the training but I attended the entire session and found the training very interesting and useful."*

Likewise, many learners from Bhopal, Madhya Pradesh also praised the training sessions. One of the learners mentioned:

*"The training methodology was very interesting as we practiced what we had to learn later."*

### 5.3.2. Useful Features of RISE

Given that the RISE app is embedded with interesting games, quizzes, interaction, e-certificates, etc., learners were asked about the features which they liked. The DIO and DICA from Odisha mentioned that:

*"Knowledge of the learners has increased and it will help in improving the practices of the health workers in the field."*

The BDO of Berasia block in Madhya Pradesh appreciated the App saying that:

*"The app is made in such a way that even health workers from senior ages are also able to complete the modules without much support and supervision."*

In the words of one of Block level officers in Maharashtra:

*"The refreshment of immunization knowledge is the highlight of the RISE App. ANMs are realizing their mistakes in practicing and getting them rectified.*

*The procedure and practical are shown through animations and these are well understood by the health workers."*

One of the learners from Tamil Nadu mentioned:

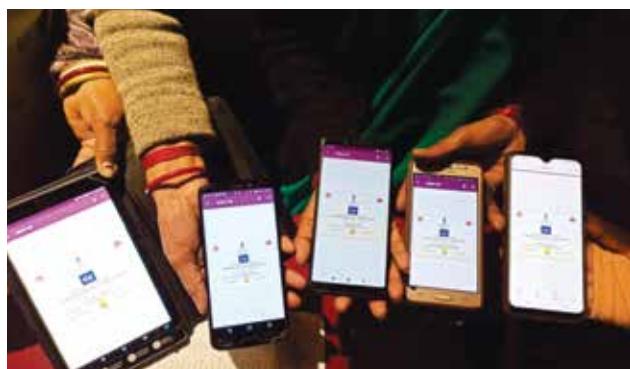
*"I liked the conversation between the doctors and the sisters in the video and the way the stories were made". The umbrella and the bus games were very much interesting."*

Likewise, another learner from Maharashtra expressed:

*"Animations were as good as the real conversation between health workers and the beneficiaries."*

The **e-certificates** earned after completion of each module - and the master certificate after completing all the modules - were the most celebrated feature of the application. The gold and silver certificates were perceived as added merits to their professional qualifications and learners were happy to receive it and were greatly appreciated by the supervisors, state representatives and national team, RISE, JSI. As expressed by UDM in Odisha:

*The learners were receiving certificates after completion of modules and knowledge is increasing, no matter silver or gold certificate. The certificates were motivating them to complete other modules.*



Picture 5.4: Certificate of Module Completion

The flexibility of completing the course (despite some personal challenges) was praised by most of the learners across the intervention districts. The learners could complete the course at any point of time and at any convenient place. During the pandemic period, many learners who had additional responsibilities for surveillance (assigned under COVID pandemic), were nonetheless able to complete the course, given its flexibility. Learners from Himachal Pradesh noted completing the course at night because the speed of the mobile data remains high in the night and hence they could finish the course easily without disruption. As mentioned by one learner from Madhya Pradesh.

*"Flexibility of doing the course is the forte of RISE."*



Picture 5.5: In-depth Interview during Endline Assessment, Tamil Nadu, Nov-Dec 2020

Supervisors also praised that flexibility and noted that the play and pause feature of the App was helpful for the learners to complete the course. One of the medical officers from Himachal Pradesh expressed:

*"The flexibility of time to complete the course was a very good feature of the app as learners could complete the course whenever and wherever they get time."*

Learners also appreciated that the course was in their respective **regional language** which helped them to understand the subject easily. One of the learners expressed:

*"The story and the animation modes of the entire training were very much interesting and I found it better than classroom training. In addition, I can watch the video as many times as I want to clear my doubts.*



Picture 5.6: Qualitative Data Collection during Endline Assessment, Nov-Dec 2020

### 5.3.3 Challenges faced in taking the RISE training

Learners, as well as medical officers, reported internet and network issues that impeded or disrupted the course flow and they had to pause in between. One of the VHNs from Kancheepuram reported:

*"Learners faced internet issues and therefore, they had to wait for the full network to complete the course."*

Sharing his experience, one of the learners from Pune reported navigation through the App was stuck several times at particular slides. A few of the learners from all of the districts reported that they faced wrong password/mobile numbers issues. The chapters also got stuck at some places, resulting in a longer time taken to complete the course. To overcome the freezing of the App and chapters, they completed the training at places where network connectivity was available. In addition, one of the learners from Odisha reported that sound was not clear at many places; and at some places, learners felt the font size was too small to read the text. Learners resolved these problems themselves, as gradually they learned to adjust their phone settings to increase the font size and sound volume.

### 5.3.4. Support received to overcome challenges

Learners shared problems either through phone calls or via screenshots of the problems on the WhatsApp group. Their problems were sometimes resolved late at night, as they were waiting to complete the modules as early as possible. One experience was shared by a learner from Tamil Nadu:

*I was unable to start the module at night and reported the issue to the state representative of RISE, and it was further shared with the national representative of the project. My problem was resolved within 15-20 minutes, and I could complete the module by midnight. I shared the e-certificate with the state representative.*

Supportive supervision also was provided by the supervisors and nodal persons for the timely completion of the training. One of the learners from Pune reported:

*My supervisor helped me in navigation, checking progress and scores in the app. In addition, she helped me to understand how to chat with the state representative on WhatsApp, check scores and motivated me to complete the course.*

Likewise, learners reported that the supervisor used to review the performance, cleared doubts and asked to

share and resolve difficulties on every Friday meeting at the block level which motivated us. An elderly learner from Odisha reported that

*"The supervisor not only helped to resolve doubts, but he also encouraged me saying that at such an elderly age, you could complete the modules with eagerness."*

Furthermore, peer groups of learners also helped each other to clarify doubts and to address difficulties faced during the course. This inculcated the peer-group learning principles among the learners. One of the ANMs from Pune shared:

*"I used to approach my peer group for any solutions. The problems used to get resolved within 15-20 minutes."*

Similarly, learners from Shimla also reported:

*"We used to call each other in case of problems and sometimes and used to sit together for course completion and help each other if needed."*

### **5.3.5. Utility of the application in the field**

This is the most promising contribution of the RISE App towards routine immunization. It is truly rewarding that learners are following correct practices in the field/session sites after taking the RISE training course. All of the respondents of the in-depth interviews cited the benefits of the App in some way or another in the field. One of the learners from Himachal Pradesh said:

*"RISE is a true companion", all the routine immunization-related knowledge had been refreshed through the app as most of the doubts have been cleared through the training."*

Many learners noted that they have a better understanding of vaccination sequences, the four key messages (for the caregiver), bio-medical waste management, AEFIs and immunization systems in the field. One of the learners in Himachal Pradesh noted down the questions and answers from the quizmaster in her notebook as she found them beneficial to solve the doubts arising during the field work. A learner from Maharashtra mentioned:

*"I have learned a lot about the appropriate arrangement of logistics before the immunization session. Injection sites and routes, bio-medical waste management practices are corrected after taking the RISE training."*

Another learner from Maharashtra expressed:

*"Now I am aware of maximum ages for giving all vaccines, and I am confident about the due vaccines for any left out/drop out the child."*

Another interesting experienced shared by one of the learners in the state:

*"I know maximum period (age) for each vaccine, Open Vial Policy, biomedical waste disposal, conditioning of ice packs, handling of AEFI cases and placement of vaccines at session sites."*

One of the learners from Himachal Pradesh said:

*"Apna RISE aya hai, Gyan Mobile me laya he" (Our RISE has brought information in the mobile).*

She happily said:

*"Session sites and cold chain management are as important as vaccine distribution. After taking the training, I know the proper vaccination process and how to handle the vaccine"*

One more interesting experience shared by one of the learners:

*"Earlier, many times we had missed few crucial steps related to immunization, especially how to deal with community or manage immunization sessions but now we are confidently following guidelines"*

The medical officer from Maharashtra said:

*"Many ANMs are aged and it's hard for them to understand the technical subjects. However, in this (RISE) training, these subjects are made easily understandable through scenarios, animations, games and these things have captured their full attention to the subject."*

The Deputy Director of Kancheepuram expressed:

*"It was very useful for the VHNs because they are the first responders in Immunization wherein all field doubts will be cleared at their own pace. We saw in the field, there was rapid improvement in areas like the site of immunization, a dose of vaccine and practices like using hub-cutters and not re-capping syringes after usage and bio-medical waste segregation was perfectly done after this training by our VHNs."*

The DIO of Madhya Pradesh expressed that:

*A total of 22 hired ANMs were selected for regular ANMs. Though not directly connected, it can be said that RISE training has helped them to clear the process of selection.*

### 5.3.6. Suggestions from health workers

Several topics were suggested, such as a course on adolescent health covering risks such as cancer and communicable and non-communicable diseases to be added in the App. In addition, antenatal issues like the development of the baby should also be included in the training. Also, topics related to the COVID pandemic such as vaccine introduction and training, COVID appropriate behaviour, myths and facts, symptoms and treatments and related information. As suggested by one of the block medical officers, "the vaccinators needed to be trained about it." The DIO and DICA from Odisha suggested including modules on the COVID-19 vaccine and microplanning on immunization. A few learners from Himachal Pradesh, Madhya Pradesh, and Odisha requested to include topics and information related to family planning, as village populations ask them about this. The medical officer from Maharashtra suggested PCV-related courses in the training to clarify doubts related to the vaccine. Additional suggestions to integrate into the App included courses on bio-medical waste management and how to disinfect immunization waste, as well as further topics on cold chain management and vaccine handling. Another set of learners suggested adding detailed maternal health, including high-risk pregnancy complications, ante and post-natal care.

### 5.3.7. Improvements in the RISE training:

Some learners suggested improvements during in-depth interviews, including:

- Sound volume is to be increased at some places in the modules.
- The font size of the text should be increased at some places in the modules.

In addition, one of the Block Health supervisors of Maharashtra suggested:

*"RISE App can be linked with RCH Portal (previously MCTS), so that, the duelist can be made available to ANMs directly in RISE App."*

The RCH officer in Maharashtra suggested:

*"Amalgamation of all work at session sites needs to be taught (like the work carried out in VHNDs). In addition, some IEC videos can be included in the RISE app for the beneficiaries who stay for 30 minutes post-vaccination."*

Hence, it can be concluded that the RISE App was appreciated not only by the health workers but its usefulness was cited by the block, district and state level officials as well. Further, as health workers have improved their practices on routine immunization in the field, it can be acclaimed the RISE App could meet one of the prime objectives during the pilot phase.

## Section 6

# Learnings from the Project

### 6.1 Effectiveness of RISE as a Learning tool

RISE is a new methodology of blended learning to enhance the knowledge and skills of health workers and thus to strengthen routine immunization programs. It can be used also as a complementary tool for supportive supervision and mentoring. It has been widely accepted as a learning tool by both health workers and supervisors. The learning platform of RISE can also be used to build capacity for other cadres of learners regarding immunization or on other topics (based on their training needs). RISE has shown tremendous potential to be a game-changer in the capacity building of a large number of health workers, which can be replicated in other geographical areas not only in India but across many other countries in the world, especially in pandemic time with limitation of organizing face-to-face classroom-based training.

The experience in pilot areas showed that RISE is feasible and has the potential to be sustainable, as no big hurdles were faced regarding Internet connectivity or the availability and use of Android/iOS devices. It has also shown to be a cost-effective model of capacity building, as it minimizes the operational cost (such as venue, travel, food, etc) of the face-to-face training which is usually done away from the health workers' workplace. It is convenient, as the health workers can take the course at their pace and time in their workplace/home. Learners' motivation and enthusiasm for RISE were evident, given that some of them completed the courses by the morning when we had just uploaded the courses to go-live at midnight. Also, although there was a notion that senior or elder health workers are hesitant towards the use of technology or may find it difficult, but good participation in RISE from all age groups of health workers was observed.

Figure 19: Key Learnings



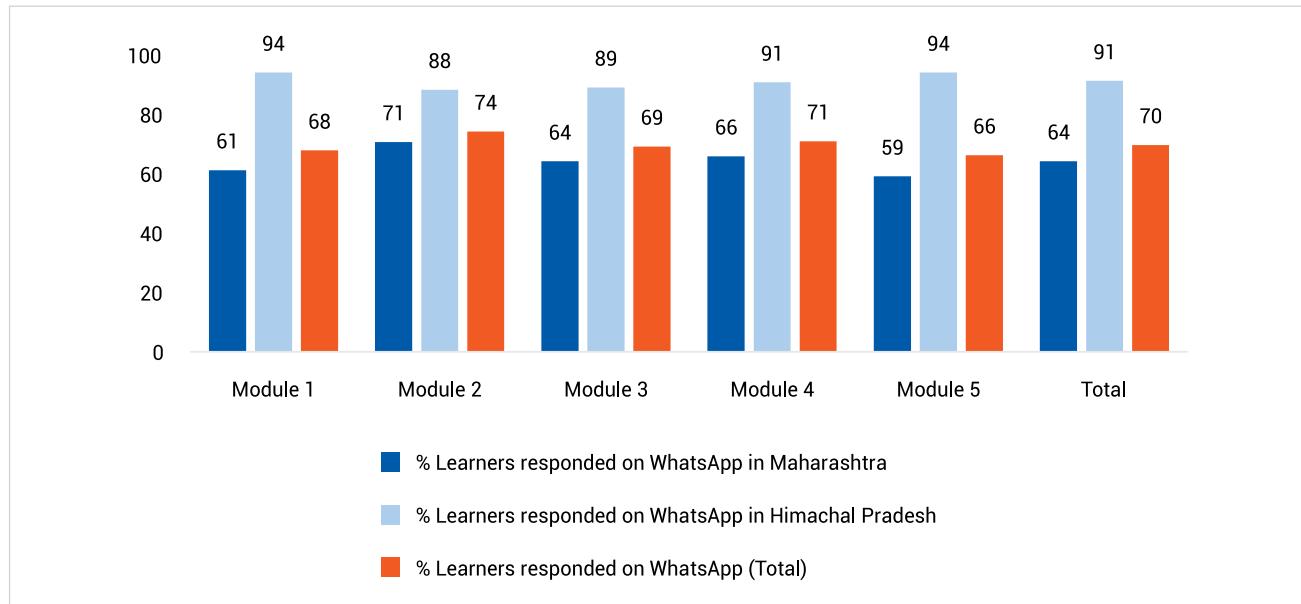
### 6.2 Blended- learning from WhatsApp group- An Experiment

After the RISE modules were completely rolled-out, the learners were kept engaged via quizzes which were shared with them the WhatsApp group created earlier. A set of 12 quizzes were uploaded to the groups, two

for each module. Further, two more quizzes were uploaded which were scenario-based.

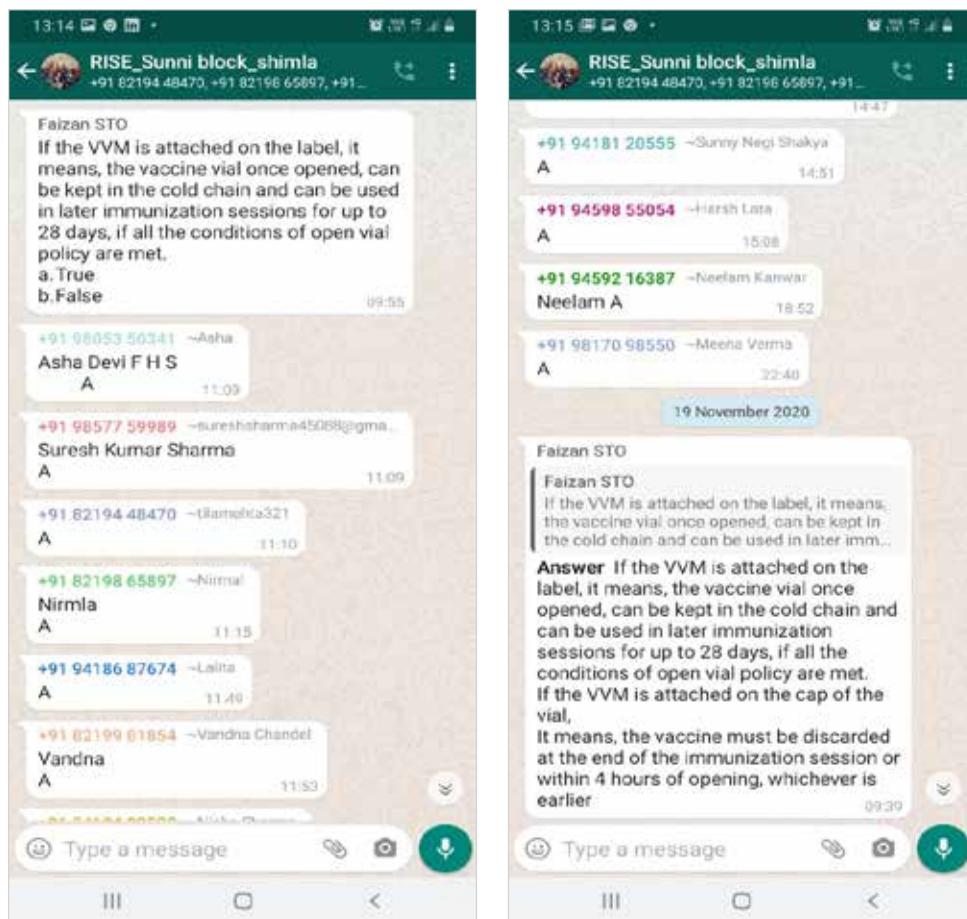
The WhatsApp groups were formed only in Maharashtra and Himachal Pradesh and therefore, analyses were carried out from the two states and presented in **Figure 20**.

Figure 20: Learners attempted WhatsApp quizzes after RISE training course



Overall, 70% of the learners actively responded to the quizzes, out of which 64% of learners were from Maharashtra and 91% of learners were from

Himachal Pradesh. Module 2 and Module 4 were the highly responded modules (more than 70%) while the responses in modules 1, 3 and 5 were more than 60%.



Picture 6.1: WhatsApp Quizzes posted on WhatsApp group

## Section 7

# Consideration for Scalability and Sustainability

## 7.1 Overcoming Barriers to Roll Out of RISE Training Package

The pilot phase of RISE training has gone through a remarkable journey, with potential challenges continually overcome since its inception. Some of the challenges the project has overcome include:

- 1. Tech literacy:** It was one of the colossal challenges that the RISE project was anticipated to face

after proceeding with the proposed objectives of strengthening the health workers' capacity on their smartphones. However, during the Capacity Building Need Assessment, it was found that more than 80% of the participants were well-versed with the use of smartphones and understand its various features including downloaded applications. The tech literacy was sound even among the older cohorts of the health workers.



Picture 7.1: Learners from Elder cohort completed training course

The RISE training course was completed by the learners from the elder cohort with great enthusiasm. One of the learners who was reaching the retirement age from Himachal Pradesh expressed that

*"Even at the age of 60 years, I found the app so user-friendly and required minimum hand-holding."*

Thus, it can be summarised that the training App was coherent as well as beneficial for all the learners, irrespective of age and extreme tech literacy.

- 2. Orientation of the Trainers-** Being a pilot project, a big challenge was to orient the learners so that they can be well versed with the flow of the course and able to complete the course with minimal problems when doing it individually. To achieve this, a total of 97 batches of orientation

were carried out across the pilot districts where approximately 3000 learners were trained on how to use the App. As a result, the learners could complete the course easily. One of the learners from Shimla, Himachal Pradesh shared her experience:

*"Though I have earned a silver certificate due to network issues and other reasons, I am happy that I have learned so much from the training app. It has refreshed my knowledge and cleared so many doubts related to the work which I do daily."*

- 3. Troubleshooting learners soon after roll out of the module-** As soon as the first module went live, a pool of questions arose. In most cases, learners forgot their login ID and password. Apart from that, some of them were not able to receive the certificate, and sometimes the course froze due to poor network connectivity. The JSI Team at

the national and state levels was troubleshooting the learners' issues as and when required. The fast-track troubleshooting helped the learners to complete the course as early as possible, including sometimes, during mid-night to early mornings.

#### 4. Motivation to complete the training course-

Since the beginning of the training course, there was a group of learners who pro-actively started and completed the modules within a few hours to one day. On the other hand, some of the other



Picture 7.2: Peer to Peer Learning

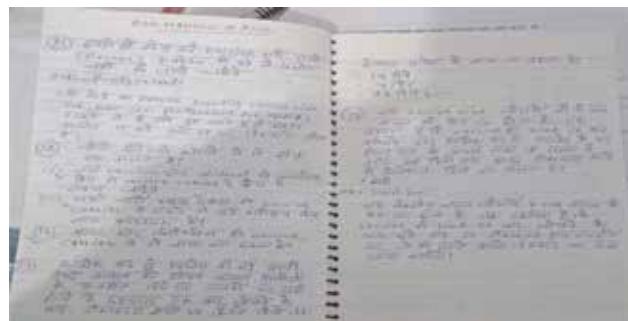
learners needed intense motivation to complete the modules and eventually the course. Obtaining a gold certificate was a catalyst inculcating motivation among learners themselves. Some learners who earned silver certificates were motivated by their respective supervisors and state and national representatives of the RISE project (JSI). Some learners shared their certificates with family and friends, which in turn motivated them to complete the course on time.

#### 5. Motivation to learners who did not start the course-

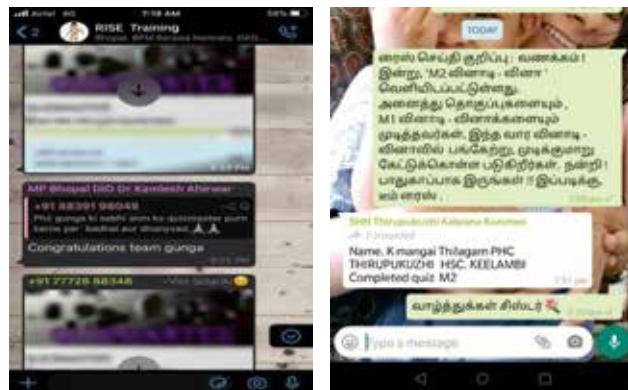
Module roll-out among a few learners slowed down because of the pandemic and their added roles and responsibilities. In such cases, the JSI state representatives and supervisors played a vital role to motivate them and complete the course through personal communication and monthly meetings.

#### 6. Keeping learners engaged after completion of course-

To keep the learners engaged on the RISE application and continue to refresh knowledge, quizmaster was uploaded in the application (results discussed earlier). The quizmaster was liked by many of the learners as it was like a guidebook for them. One of the learners from Shimla, Himachal Pradesh has noted down the quiz questions in her notebook with answers and expressed that she often revised those questions which refreshed her knowledge several times.



Picture 7.3: Quizmaster questions notes by ANM, Shimla, Himachal Pradesh, Nov-Dec 2020



Picture 7.4: Quizmaster notification and completion in the WhatsApp groups

## 7.2 Recommendations

Based on the encouraging results of RISE in the pilot phase, and despite some challenges, there was overwhelming interest and buy-in for RISE to be scaled up from both MOHFW and states as a ground-breaking learning platform to benefit the capacity development of more health workers. Some of the ways in which RISE can be scaled up further are:

**1. Horizontal expansion:** RISE can be expanded geographically across all states of the country. The scale-up would begin in a phase-wise manner, starting with the districts remaining in the pilot states (apart from the 5 implementation districts). Control districts, for instance, would be the first set along with other districts where the application can be expanded.

**2. Vertical expansion:** As suggested by the supervisors and state immunization officers, the application can be expanded and adapted vertically for the training of ASHAs, AWWs, and medical officers to improve and refresh their knowledge on immunization, and, as a result, improve immunization services and achieve desired coverage.

- 3. Content diversity:** More topics of immunization can be taken up as per the learning needs. As suggested by learners and supervisors, the application can also be embedded with several health topics that are targeted interventions by MoHFW in the future.

By seemingly improving the skills and knowledge of the health workers, the RISE project built up confidence in itself that it can be a game-changer in the domain of public health. Since the health workers are gradually entering into the digital mode of health tracking, such digital platforms of self-learning at their own pace and time would enhance their confidence, bridging the gap between skills and knowledge. The model is feasible, and can reach any health personnel working in the field of public health.

### 7.3 Limitations

In the two and half year's journey, the project overcome all challenges and ran successfully to achieve its prime objective of strengthening the capacity of the health workers through a novel knowledge application. However, there are some limitations of the project during the pilot phase: -

1. Pandemic-imposed barriers to carry out several field-based operations such as in-person monitoring, supervision and blended learning.
2. Internet connectivity was one of the problems, resulting in some learners completing their courses away from their homes/work to access stronger connectivity.
3. It was a small-scale pilot study, where digital innovation for knowledge improvement experimented with health workers engaged in routine immunization.

Last but not least, in progressive times when face-to-face/classroom training is undergoing paradigm shifts, RISE is a digital e-learning package and ambitious mechanism of self-learning for health workers. Further, as dynamicity is the forte of the application, it is, therefore, a reliable and promising solution for capacity building. The digital mode is the new form of learning and RISE is capacitated with all essential features to meet the demands in changing times.

### 7.4 Exposition of RISE mobile-learning solution

The RISE team, along with the support of MoHFW

and GAVI, has been actively showcasing this project. Once the project began implementation, the curiosity and interest in RISE has been palpable. To create awareness of what the project has achieved, we have presented in webinars, conferences, podcasts etc. Along with the core RISE team, the JSI Inc. Immunization and Communications team has played a significant role in these expositions. Below are some of the events where RISE was presented:

#### 1. JSI Inc. Podcast - July 2020

<https://soundcloud.com/user-22029268/voices-of-public-health-rolling-out-a-digital-training-initiative-in-india-during-covid-19>

#### 2. JSI Inc. Webinar – September 2020

<https://www.youtube.com/watch?v=jzEr9zAUql&feature=youtu.be>

#### 3. Presentation in "Global Digital Health Forum"

- December 2020 [https://gdhf.conference.tc/login?error=session\\_closed&id=&course\\_title=Global%20Digital%20Health%20Forum%202020&wp=%2F2020%2Fevents%2Fhealth-worker-quality-improvement-and-capacity-building-9C9snuJyPvUwbY8bP6f8-Tq&redirect=%2Fenrollments](https://gdhf.conference.tc/login?error=session_closed&id=&course_title=Global%20Digital%20Health%20Forum%202020&wp=%2F2020%2Fevents%2Fhealth-worker-quality-improvement-and-capacity-building-9C9snuJyPvUwbY8bP6f8-Tq&redirect=%2Fenrollments)

#### 4. RISE Blogs

- I. <https://www.jsi.com/a-learner-centered-journey-of-capacity-building-rapid-immunization-skill-enhancement-content-development/>
- II. <https://www.jsi.com/meeting-health-worker-training-needs-in-india/>
- III. <https://www.gavi.org/vaccineswork/vaccinator-training-smartphone-screens-amid-covid-19-another-new-normal>

#### 5. Included in the Training Resources Directory of WHO: <https://www.who.int/immunization/documents/TrainingResourcesDirectory.xls?ua=1>

#### 6. RISE presented at Boost Sparks

<https://brightspots.boostcommunity.org/rapid-immunization-skills-enhancement>

#### 7. RISE presented at Supportive Supervision Workshop Series (Part-4) [https://www.youtube.com/watch?v=MxM6H\\_VqTpM](https://www.youtube.com/watch?v=MxM6H_VqTpM)

The success of RISE is huge, and we are happy to share our learnings and experiences from the project. We hope that these opportunities to talk about and expand RISE may lead to fruitful, collaborative ventures to further build capacity in health, ultimately leading to health systems strengthening in every sphere of public health.



# **Annexures**

## Annexure-I

# ANM Knowledge Assessment

### Assessment Questionnaires

#### RISE 01: ANM Knowledge Assessment Survey

##### **Objective:**

Assess the learners' knowledge on the contents of RISE modules, through interviews

**Stakeholders to be interviewed:** ANM/Health workers who are conducting immunization session

\*\*The respondent of the interview is above 18 years of age and only be included in the survey.

##### **Basic Information**

1.1 State: .....

1.2 District: .....

1.3 Block: .....

1.4 Date: (DD/MM/YYYY) .....

1.5 Name of health facility to which attached: .....

1.6 Designation of the Health Worker: .....

1.7 Name of the sub-centre attached .....

1.8 Contact no, if any.....

Sl. No.	Questions	Options
<b>Module 1 - Immunization Schedule and Session Management</b>		
1	What is the dose of BCG vaccine for less than one-month old infant?	1. 0.05 ml 2. 0.1 ml 3. Don't know
2	Under UIP, dose of Vit A for 9 months old infant is 2 Lakh IU.	1. True 2. False 3. Don't know
3	The maximum age for the first dose of Rota Virus Vaccine to a child is	1. 14 weeks 2. 1 year 3. 5 years 4. 7 years 5. Don't know
4	What vaccines should be given to a 16-months old child who has never been vaccinated?	1. OPV-1 2. BCG 3. Penta-1 4. DPT-1 5. JE-1 (wherever applicable) 6. MR-1 7. Don't know
<b>(Multiple answers possible)</b>		
5	The immunization records include MCP card and RCH register only	1. True 2. False 3. Don't know
6	Due-list of beneficiaries is prepared from the counterfoils of the immunization cards only.	1. True 2. False 3. Don't know
7	If a child comes with mild fever, diarrhoea, should you give vaccination?	1. Yes 2. No 3. Don't know
8	For infants who have never been vaccinated, we can give more than one dose of the same vaccine at one time	1. True 2. False 3. Don't know
<b>Module 2 - Injection Safety and Vaccine Administration</b>		
9	Ideally a hub cutter is used after using each AD syringe	1. True 2. False 3. Don't know
10	Which bag is used for collecting the used plastic part of syringes	1. Red Bag 2. Black Bag 3. Don't know
11	Is it safe to give multiple vaccines to an infant in one immunization session	1. True 2. False 3. Don't know

Sl. No.	Questions	Options
12	At what angle the needle is inserted for Subcutaneous injection?	1. 15 degree 2. 45 degree 3. 90 degree 4. Don't know
<b>Module 3 - Cold Chain Management</b>		
13	Which of these vaccines lose their potency if frozen? (Multiple answers possible)	1. IPV 2. OPV 3. Pentavalent 4. BCG 5. Don't know
14	At the time of reconstitution, diluent should be at the same temperature as the vaccine (+2 to +80 C)	1. True 2. False 3. Don't know
15	Open Vial Policy is not applicable to which of these vaccines? (Multiple answers possible)	1. Pentavalent 2. BCG 3. RVV 4. MR 5. JE 6. Don't know
16	Which of the following are the criteria for implementation of Open Vial Policy?	1. The expiry date has not passed. 2. The vaccine vial monitor (VVM) has not reached/crossed the discard point. 3. Date and time of opening is written on the vial 4. All of the above 5. None of the above 6. Don't know
17	Droppers and syringes should be carried in the vaccine carrier	1. Yes 2. No 3. Don't know
18	Vaccine carrier is packed with 4 frozen icepacks.	1. True 2. False 3. Don't know
<b>Module 4 – AEFI</b>		
19	Serious AEFIs includes	1. Death, 2. Inpatient hospitalization 3. AEFI cluster 4. All of the above 5. Don't know
20	Which of the following AEFIs need to be recorded in AEFI register at block level?	1. Minor AEFIs 2. Serious AEFIs 3. Severe AEFIs 4. All of the above 5. Don't know

Sl. No.	Questions	Options
21	Whenever you suspect anaphylaxis, you will immediately send the case to the nearest health facility equipped to manage anaphylaxis.	1. True 2. False 3. Don't know
22	Adrenaline injection is given deep I/M in the middle 1/3rd of anterolateral aspect of the thigh of the .....to that in which vaccine was given.	1. Same limb 2. Opposite limb 3. Don't know
23	To avoid wastage, reconstituted vaccine can be taken from one session site to another.	1. True 2. False 3. Don't know
24	After vaccination, ask the beneficiary to wait for ..... minutes to observe for any AEFI.	1. 15 minutes 2. 30 minutes 3. 45 minutes 4. 60 minutes 5. Don't know
<b>Module 5 – Communication to Tackle Vaccine Hesitancy</b>		
25	Those children who started vaccination but did not complete the schedule are known as	1. Left outs 2. Drop outs 3. Others 4. Don't know
26	There is no single intervention strategy that addresses all instances of vaccine hesitancy	1. True 2. False 3. Don't know
27	Who can be an influencer?	1. Is well known in the community 2. Source of credible information in the community 3. Able to motivate people and influence opinions of people 4. All of the above 5. None of the above 6. Don't know
28	Engaging influencers in the community creates ownership and an enabling environment for immunization services.	1. True 2. False 3. Don't know
29	Preparation before a community meeting is crucial for the success of the meeting.	1. True 2. False 3. Don't know
30	Using GATHER approach during IPC is very effective for tackling vaccine hesitancy in caregivers	1. True 2. False 3. Don't know
	<b>Remarks if any (Text)</b>	
	<b>Note: (Text)Thanks to the ANM for her participation</b>	

## Annexure-II

# ANM Practice Assessment

### RISE 02: ANM Practice Assessment Survey

**Objective:** The objective of observing immunisation session is to:

- Assess the level of proficiency of ANMs in administering vaccines
- Assess other necessary practises that needs to be followed in immunization sessions to improve quality and coverage

**Stakeholders to be interviewed:** ANMs at the immunization session site

**Instruction:**

- Observe atleast 3 beneficiaries at a session site against questions # from 4 -11

\*\*The respondent of the interview is above 18 years of age and only be included in the survey.

Sl. No.	Practices	Observation					
		1. Yes		2. No			
2	Ensures the placement of heat sensitive vaccines on ice pack (BCG, MR, OPV, Rota & JE)	1. Yes 2. No					
		Child/PW -1	Child/PW -2	Child/PW -3	Child/PW -1	Child/PW -2	Child/PW -3
4	ANM touches the needle during vaccination	Yes	No	Yes	No	Yes	No
5	Observe the correct route of a particular vaccine administered to each child (may be IM, SC, ID or Oral)						
6	Observe the correct site of a particular vaccine administered to each child (may be Right upper arm, Left upper arm, Right thigh, Left thigh or Mouth)						

Sl. No.	Practices	Observation				
7	Cut each AD and Disposable syringe by the hub cutter immediately after use					
8	Use red bag for collecting the plastic portion of cut syringes immediately after using hub cutter					
9	Update MCP card and counterfoil immediately after vaccination					
10	Observe four key messages given to the care giver after vaccination					
a.	What vaccine was given and what disease it prevents					
b.	When and where to come for the next visit					
c.	What are the minor side effects and how to deal with them					
d.	To keep the MCP card safe and bring it along for the next visit					
11	Observe, if the ANM asks the beneficiary to wait for 30 minutes after the vaccination					
	<b>Take photo of the session site</b>					
	<b>Remarks (Text)</b>					
	<b>Note: (Text)Thanks to the ANM for her good work</b>					

## Annexure-III

# Qualitative Survey Tool



Plot No. 5 & 6, First Floor Allied House, Pocket 10,  
Sector B, Vasant Kunj, New Delhi-110070

Confidential (For Qualitative Survey Purpose only)

### RISE In-depth Interview with ANMs

**Objective:** The objective of the interaction with the learners (ANMs) is as follows

- Find out about their perception of the RISE training
- Challenges that they faced in taking RISE training

### Consent (To be sought from Learner by the FI)

Namaste!!

My name is \_\_\_\_\_ and I am working with JSI.

After completion of RISE training modules, our organisation is carrying out an endline evaluation in which we are trying to collect data on your perception towards RISE application, on which you completed five modules on routine immunizations and received certificate of completion. The information will help us to assess the impact of the novel application and also to resolve the challenges in future.

While participating in the discussion, please be open about your views. There is nothing right or wrong and hence, we expect that you will share your thoughts freely. The discussion will take around thirty to forty minutes to complete. I assure you that whatever information you provide, will be kept strictly confidential and will be used only for evaluation purpose. Your name will not appear anywhere in the final report of the project and further.

Your consent to participate in the interview is voluntary. You may withdraw your participation at any point of time if it gets inconvenient. However, I hope that you will provide responses as your participation is important for us.

Please let me know if you want me to ask anything about the survey.

### "RESPOND TO THE QUERIES, CONCERNS AND DOUBTS OF THE RESPONDENT".

With your consent, may I begin the discussion now?

**Yes "1"      No "0"**

**Name and Signature of the Field Investigator**

**Date of IDI**

Serial no.	Questions
1.	<p>Would you like to share your views on the classroom training/face to face trainings related to your work which you have received in the recent past?</p> <p><b>Probes</b></p> <ul style="list-style-type: none"> <li>• Face difficulty in attending the trainings, if any</li> <li>• Advantages and disadvantages of the trainings.</li> <li>• Do you think there is any scope of improvement in the training? If yes, how?</li> </ul>
2.	<p>Did you attend RISE training at the block level?</p> <p><b>Probes (for those who attended the training):</b></p> <ul style="list-style-type: none"> <li>• How was the training?</li> <li>• What was your impression towards the application?</li> <li>• Areas of improvements for the training on the application</li> </ul> <p><b>Probes (for those who did not attend the training)</b></p> <ul style="list-style-type: none"> <li>• How did you come to know about the RISE training App?</li> <li>• What was your impression towards the application?</li> <li>• Areas of improvements for the training on the application</li> </ul>
3.	<p>Were there any challenges to run the application and complete the courses after block level trainings. If yes, please elaborate</p> <p><b>Probes/challenges:</b></p> <ul style="list-style-type: none"> <li>• <b>App related-</b> login and password, small fonts of the content, can't find click button easily</li> <li>• <b>Internet related-</b> excessive usage of mobile data while running the app, course progress hangs out and alike</li> <li>• <b>Mobile related-</b> not having smart phone, memory space, damaged screen, non-operational buttons and alike, data pack finishes fast</li> <li>• Any other</li> </ul>
4.	<p>Do you think there is any utility of the RISE application?</p> <p><b>Probes</b></p> <ul style="list-style-type: none"> <li>• Do you refer the RISE application to resolve any doubts on your work related to immunization during work?</li> <li>• Do you think there is any change in your knowledge regarding immunization after taking RISE courses?</li> <li>• Do you think you had any change in your skill set regarding immunization after taking RISE courses?</li> </ul>
5.	<p>Any suggestions you would like to give to make the application better in future</p> <p><b>Probes</b></p> <ul style="list-style-type: none"> <li>• Regarding content -speed, fonts, any addition etc</li> <li>• Regarding application</li> </ul>

Serial no.	Questions
6.	<p>Do you think there is utility of the dashboard?</p> <p><b>Probes</b></p> <ul style="list-style-type: none"><li>• Do you know how to use the dashboard?</li><li>• Did the dashboard help you in tracking your progress? If yes then please elaborate how</li><li>• Did you compare your performance with your peers by looking at the dashboard?</li></ul>
7.	<p>Are there any advantages of RISE application?</p> <p><b>Probes</b> (Can give a thought whether keeping probes will lead to bias in this question)</p> <ul style="list-style-type: none"><li>• Flexibility of time and place</li><li>• No hesitation in going back if something missed</li><li>• Clears doubts which we hesitated to ask during classroom training</li><li>• Are there any disadvantages of the RISE application?</li></ul>
8.	Any other comments, feedback, suggestions

Thank the Learner after completion of the interview.

## Annexure-IV

# Supplement Figures

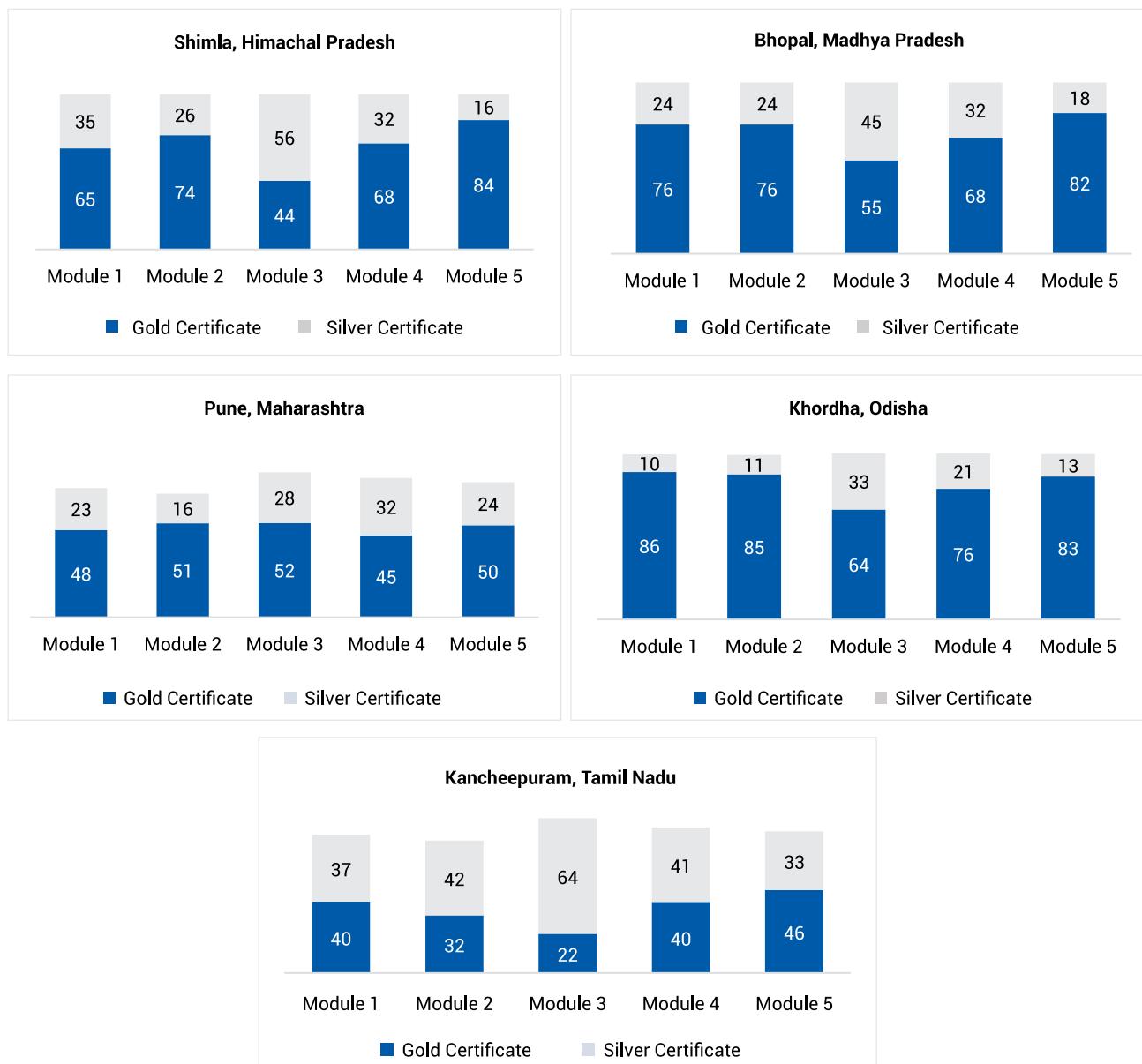
Figure 3.1 State and Module wise Pre and Post Assessment Scores (in %) by the end of the year 2020



Inner Doughnut represents Pre-Assessment scores (%)

Outer Doughnut represents Post-Assessment scores (%)

Figure 3.2: State and Module wise Certification Status



# RISE TEAM



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Project Director

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## Former Colleagues

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- Dr. Deenadayalan Chandran
- Mr. Raghunandan Puhan
- Dr. Rajat Garg
- Dr. Rachna William
- Mr. Faizan Ali
- Dr. Ayushi Agrawal
- Dr. Puskarr Deshmukh
- Mr. Vijay Agarwal

# Photo Gallery



# Photo Gallery



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