

Effective Supportive Supervision in Immunization



*Health Systems Strengthening
Case Study Madhya Pradesh, India
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unicef 

for every child

i) Acknowledgements

This case study is an outcome of a consultative engagement involving a range of stakeholders in Madhya Pradesh and beyond working in health systems and particularly immunization. Everyone who has been interviewed during the process showed tremendous enthusiasm and passion for the system and were supportive of the documentation exercise.

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ii) Acronyms

AEFI	Adverse Events Following Immunization
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AVDS	Alternate Vaccine Delivery System
AWW	AnganWadi Worker
AYUSH	Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy
BMO	Block Medical Officer
BPM	Block Programme Manager
CAGR	Compound Annual Growth Rate
CBI-RI	Capacity Building Initiative – Routine Immunization
CCH	Cold Chain Handler
CCP	Cold Chain Point
CHC	Community Healthcare Centre
CMHO	Chief Medical and Health Officer
DF	Deep Freezer
DIO	District Immunization Officer
DHS	Directorate of Health Services
DPM	District Programme Manager
DPT	Diphtheria Pertussis Tetanus
EAG	Empower Action Group
EPI	Expanded Programme on Immunization
FIC	Full Immunization Coverage
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GMSD	Government Medical Store Depot
GAVI	Global Alliance for Vaccines and Immunization
HWC	Health and Wellness Centre
HSS	Health Systems Strengthening
IAPSM	Indian Association for Preventive and Social Medicine
IEC	Information Education and Communication
ILR	Ice Lined Refrigerator
IMI	Intensified Mission Indradhanush
IMR	Infant Mortality Rate
IPV	Inactivated Polio Vaccine
ITSU	Immunization Technical Support Unit
JE	Japanese Encephalitis
JSI	John Snow Inc
KII	Key Informant Interview
LHV	Lady Health Visitor
MCP	Mother Child Protection
MCI	Medical Council of India
MI	Mission Indradhanush
MMR	Maternal Mortality Rate
MPW	Multi-Purpose Worker
MR	Measles Rubella
NCCMIS	National Cold Chain Management Information System
NHFS	National Household and Family Survey
NHM	National Health Mission
NHP	National Health Policy
NHSRC	National Health System Resource Centre
NRHM	National Rural Health Mission
NTAGI	National Technical Advisory Group on Immunization
ODK	Open Data Kit
OPV	Oral Polio Vaccine

ORS	Oral Rehydration Solution
PCV	Pneumococcal Conjugate Vaccine
PHC	Primary Healthcare Centre
PIP	Programme Implementation Plan
PM-JAY	Pradhan Mantri – Jan Arogya Yojana
PPP	Purchase Power Parity
RI	Routine Immunization
RISS	Routine Immunization Supportive Supervision
RMNCH+A	Reproductive Maternal Newborn Child plus Adolescent Health
RVV	Rota Virus Vaccine
SHC	Sub-Health Centre
Td	Tetanus Diphtheria
TFR	Total Fertility Rate
UIP	Universal Immunization Programme
UNICEF	United Nations Children’s Fund
UNDP	United Nations Development Programme
U5MR	Under 5 Mortality Rate
VHND	Village Health Nutrition Day
VPD	Vaccine Preventable Diseases
WHO	World Health Organization

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1. Executive Summary

Madhya Pradesh and its Health System

Madhya Pradesh is the second largest state in India after Rajasthan with an area of 308,252 km², and a population of 72 million (census 2011). The state is divided into 10 divisions and 52 districts for administrative purposes, with Indore and Bhopal as the largest cities with roughly 21 million and 18 million population respectively. The state is home to 46 tribal groups, the maximum in the country, residing in 89 (out of total 333) administrative blocks and constituting about 21% of total population of state. Madhya Pradesh is a high focus state for the central government since 2001, when the government of India established an Empowered Action Group (EAG) under the Ministry of Health and Family Welfare, to provide special focus and monitoring of eight states which were demographically behind in India, and supporting them to achieve national health goals.

The health system of Madhya Pradesh is designed as per India's federal structure and federal-state division of responsibilities and financing, where Madhya Pradesh is responsible for organizing and delivering health services to its residents. The public health care system in the state is designed in a three-tier structure, promoting and emphasizing primary health care, and multifaceted since it converges with proven Indian traditional healthcare systems, recently termed collectively as AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy). However, allopathic system is the most dominant in the public sector, with most of the national programmes using allopathic medicines. In terms of financing for health, there are three sources for health expenditure in the state (*as per National Health Accounts 2015-16*), where majority is Out of Pocket (~70%) going directly to the providers from households, second is government's contribution (~28%) and finally about 2% is contributed by NGOs, organizations and social insurance schemes. Although, public health expenditure by the state government is increasing y-o-y, it is still unable to considerably reduce the out of pocket expenditure in the state. The state government's budget of USD 1.5 billion on health saw a 35% increase from 2018-19 to 2019-20, but it was still only 4.6% of total budget for the state, and about 1% of the state's GDP.

Universal Immunization Programme of India

The government of India launched the country's first immunization programme EPI in 1978 with four vaccines (BCG, OPV, DPT and Typhoid-paratyphoid) and a target coverage of 80% infants. The programme was renamed as UIP in 1985 with addition of two new vaccines and more emphasis on quality of care, reducing mortality and morbidity from six Vaccine Preventable Diseases (VPD) and strengthening cold chain, monitoring and evaluation and vaccine self-sufficiency through local production. Since the break of 21st century, the UIP programme saw new strategies (formation of NTAGI, AEFI guidelines, Multi Year Strategic

Plans, national vaccine policy, multi-dose vial policy etc.), new technologies (auto-disable syringes, hub-cutters, vaccine vial monitors etc.) and new vaccines (Hepatitis B, Japanese encephalitis, Measles 2nd dose, Hemophilus influenzae type b, Pentavalent, Measles and Rubella (MR), Rotavirus and Pneumococcal Conjugate). One of the key successes of the programme was in 2012 when WHO removed India from the list of polio endemic countries. Moreover, since the launch of UIP, India has seen significant reduction in the burden of VPDs. Presently, the UIP is in its third Multi Year Strategic Plan (2018-22); where the key objective is to achieve and sustain the target of 90% full immunization coverage along with strengthening the program management, vaccine logistics and cold chain, introduce new vaccines while bringing greater efficiency and accountability in service delivery.

Immunization in Madhya Pradesh

In the last two decades of implementation of UIP in India, several surveys and evaluation have found Madhya Pradesh to be one of the weakest states in the country to reach the immunization coverage targets. Low immunization coverage has been deemed as one of the primary reasons for high IMR and U5MR in the state in the last two decades. The immunization programme is critical for the state to bring these indices down, and it has an ambitious annual target of immunizing 1.9 million children and 2.2 million pregnant women. In the latest national roadmap for achieving 90% FIC, majority of the districts of Madhya Pradesh are mandated to; prioritize and focus their immunization strategies on the districts with poorest performance, improve their routine immunization plans (focusing on comprehensive microplanning), conduct gap assessments in those districts, generate demand for immunization while reducing fear of AEFIs, taking a comprehensive health systems approach to strengthen immunization system.

UNICEF's support to Madhya Pradesh

UNICEF in its latest Health Systems Strengthening (HSS) Approach defines HSS as actions that establish sustained improvements in the provision, utilization, quality and efficiency of services delivered through the health system and encourage the adoption of healthy behaviors and practices. UNICEF's support to Madhya Pradesh's government is underpinned by this approach, strengthening the state's health systems and institutions for them to be able to implement new and improve the quality of existing key maternal, newborn and child health interventions as planned in the National Health Mission (NHM) and National Health Policy (NHP). In September 2014, with GAVI HSS catalytic funding, UNICEF extended this support aimed at strengthening the supply and demand side interventions in immunization through comprehensive supportive supervision for routine immunization.

This case study focusses on UNICEF's six High Priority Districts in Madhya Pradesh (Alirajpur, Jhabua, Shivpuri, Sheopur, Umaria and Mandla) exploring the results of Routine Immunization Supportive Supervision (RISS) initiative. It also demonstrates how the

initiative contributed to the health system and addressed the capacity gaps as per UNICEF's health system strengthening approach, primarily focusing on immunization.

RISS initiative and its successes

RISS initiative is a collaboration between UNICEF, Directorate of Health Services (MP), National Health Mission, Directorate of Medical Education and Indian Association of Preventive and Social Medicine (IAPSM) MP Chapter. The initiative enlisted the community medicine departments of medical colleges (14) in Madhya Pradesh, who nominated senior professors to be trained in routine immunization & cold chain and act as senior mentors for supportive supervision for routine immunization in the state. The initiative was initially launched in 18 high priority RMNCH+A districts from 2014 to 2017 and later refocused to 14 districts (8 aspirational and 6 high priority). The key successes of the RISS initiative is outlined in figure 1.

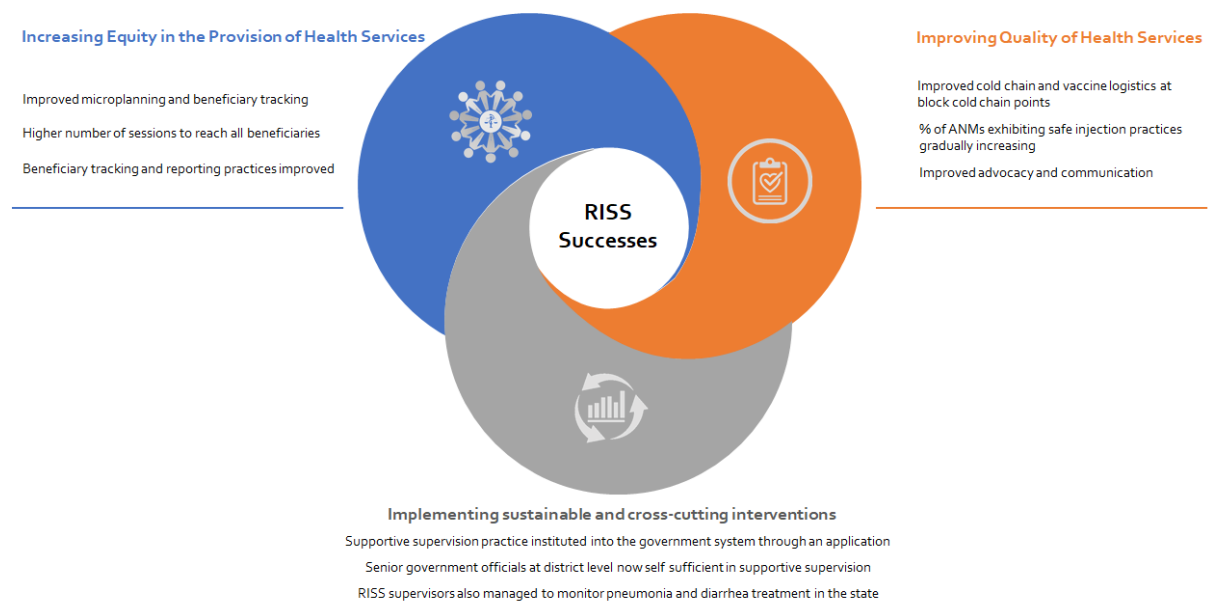


Figure 1: RISS Initiative Successes

Key Lessons Learnt

There are several learning points for authorities exploring sustenance of supportive supervision in immunization and other RMNCH+A areas.

Approach	<ul style="list-style-type: none"> - Supervision visits could be combined for critical areas under RMNCH+A continuum - Supervision shall be done in a supportive manner with an objective of knowledge exchange and capacity building than finding deficiencies
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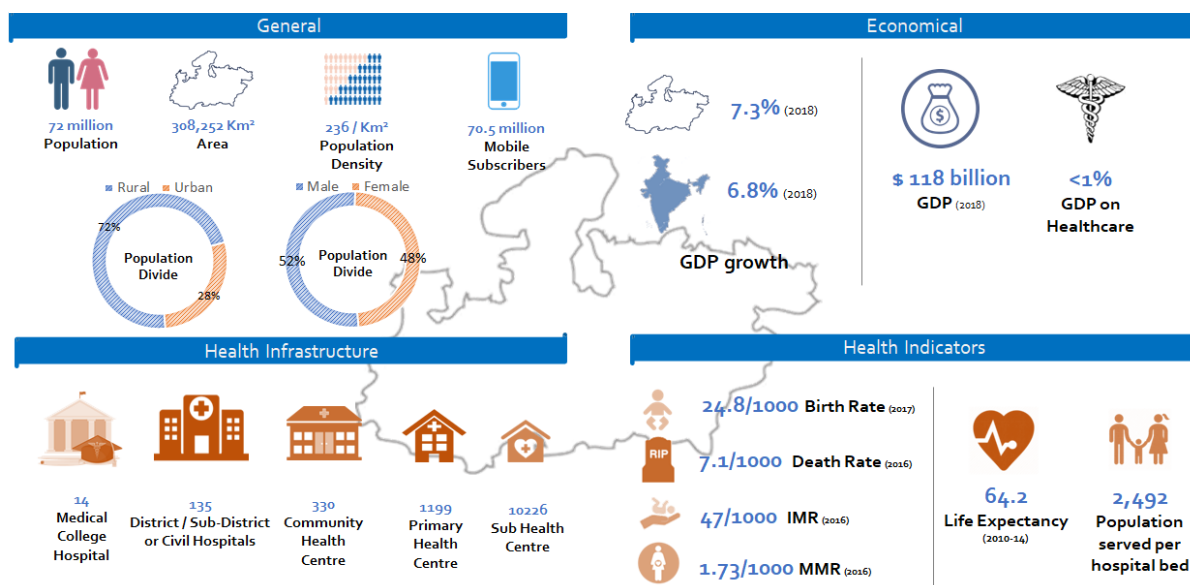
	<ul style="list-style-type: none"> - Critical success factor for a project like RISS is knowledge exchange between master supervisors and inhouse supervisory cadres - Continuous review of supervision findings at block and district level must be done
Human Resources	<ul style="list-style-type: none"> - Inhouse sector supervisors must be trained properly in health areas like routine immunization and supervisory skills - The supervisory cadre should be given targets with measurable indicators
Accountability	<ul style="list-style-type: none"> - Senior government officials at district and block levels must be made accountable for addressing issues identified during supervision visits - Dedicated staff at state level must analyze data and report actionable insights to decision makers
Enabling Environment	<ul style="list-style-type: none"> - Real time visibility on key indicators from supervision visit is required for continuous improvement - Financial systems for supervisors' expenses must be built into the initiative and disbursed smoothly

2. Background

2.1. Information on Madhya Pradesh (MP) in Indian context

Madhya Pradesh is the second largest state in India after Rajasthan with an area of 308,252 km², and a population of 72 million (census 2011). The state is divided into 10 divisions and 52 districts for administrative purposes, with Indore and Bhopal as the largest cities with roughly 21 million and 18 million population, respectively. The state is home to 46 tribal groups¹, the maximum in the country, residing in 89 (out of total 333) administrative blocks and constituting about 21% of total population of state. The state has diverse physiography with large plateaus, numerous mountain ranges, meandering rivers and miles of forests with rich biodiversity. The thick forest cover constitutes 30% of the geographical area of the state which is also 12.30% of the forest area of India². The official language of the state is Hindi with a substantial amount of people also speaking Marathi, and several tribal languages in different tribal regions of the state (e.g. Nimari, Bhili, Gondi etc.). Madhya Pradesh is

Figure 2: Madhya Pradesh Key Statistics (Source: Census 2011, Department of Telecom, CRISIL, IBEF, DoHFW, NFHS-4)



primarily an agrarian state, which is also rich in minerals and biodiversity. Between 2011-12 and 2019-20, the GDP of the state expanded at a CAGR of 12.72% to US\$ 118.20 billion³. However, in terms of GDP per capita, Madhya Pradesh has been continuously sliding in the last decade and currently stands at 27th position in the country with a GDP per capita (current prices) at INR 90,998⁴ (2018-19, approximately US\$ 1,447) which is less than country average of INR 1,26,406 (2018-19, approximately US\$ 2,010).

¹ Census India, 2001

² India State Forest Report, 2019

³ IBEF, March 2020

⁴ Reserve Bank of India, 2019

Madhya Pradesh is also a high focus state for the central government since 2001, when the government of India established a Empowered Action Group (EAG) under the Ministry of Health and Family Welfare, to provide special focus and monitoring of eight states which were demographically behind in India, and supporting them to achieve national health goals. These states were exhibiting high levels of Total Fertility, with high Infant and Maternal Mortality rates. Moreover, the group of eight states were also lagging in education and socioeconomic indicators. Since then, the state has shown improvement in its socioeconomic and health indices. However, in a latest health index report published by NITI Aayog in collaboration with The World Bank and The Ministry of Health and Family Welfare saw Madhya Pradesh slipping to 18th rank (out of 21) in the country with quite poor performance in health indices between 2015-16 and 2017-18. Moreover, in another study conducted by the NHM and NHSRC on result based financing for health systems strengthening (2018-19), to see how different states performed in utilizing the NHM budget, Madhya Pradesh was ranked 28 in the country with a net negative penalty of '-7'. As per this report, Madhya Pradesh and Bihar are the worst performing states amongst the EAG. Table 1 shows how Madhya Pradesh has fared in comparison to some of the other states in the EAG between 2001 and 2016.

Table 1: Comparison of health indicators among 5 EAG states

State/Indicator	TFR		IMR		MMR		U5MR		Literacy Rate	
	2001	2016	2001	2016	2004	2016	2011	2016	2001	2011
Madhya Pradesh	3.9	2.8	86	47	335	173	77	55	64%	71%
Uttar Pradesh	4.5	3.1	83	43	440	201	73	47	56%	70%
Bihar	4.4	3.3	62	38	312	165	59	43	47%	64%
Odisha	2.6	2.0	91	44	303	180	72	50	63%	73%
Rajasthan	4.0	2.7	90	41	388	199	64	45	60%	67%

Source: NFHS 4, NITI Aayog, SRS 2019

2.2. Context and Structure of Health in Madhya Pradesh

The health system of Madhya Pradesh is designed as per India's federal structure and federal-state division of responsibilities and financing, where Madhya Pradesh is responsible for organizing and delivering health services to its residents. Although, public health operations are decentralized and run by the state governments, the federal government has a large sphere of control over the health sector in the states, which it exerts through the national programmes managed directly by the federal government. The federal government also supports the state government in setting the health policies, regulatory frameworks and finance under the national health schemes. It also provides technical support for new technologies, fighting new diseases, and introducing new medicines or vaccines. Operationally, at the state level (in Madhya Pradesh), health is the responsibility of the state

minister of health who manages it with two key offices, Directorate of Health Services and National Health Mission, among others. The public health care system in the state is designed in a three-tier structure, promoting and emphasizing primary health care, and multifaceted since it converges with proven Indian traditional healthcare systems, recently termed collectively as AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy). However, allopathic system is the most dominant in the public sector, with most of the national programmes using allopathic medicines. Figure 3 showcases the three-tier structure of delivering healthcare services in the state.

Figure 3: Three Tier Health Care Structure in Madhya Pradesh

Three-Tier Health Care Structure in Madhya Pradesh



The key national health programmes like immunization, family planning, maternal – neonatal – child health are managed at the primary level under the guidance and supervision of the Medical Officer positioned at the PHCs and CHCs, mobilized by the network of ANMs and ASHA on ground, which makes these three cadres most important in the state’s health care system.

In terms of financing for health, there are three sources for health expenditure in the state⁵, where majority is Out of Pocket (~70%) going directly to the providers from households, second is government’s contribution (~28%) and finally about 2% is contributed by NGOs, organizations and social insurance schemes⁶. Although, public health expenditure by the state government is increasing y-o-y, it is still unable to considerably reduce the out of pocket expenditure in the state. The state government’s budget of USD 1.5 billion⁷ on health saw a 35% increase from 2018-19 to 2019-20, but it was still only 4.6% of total budget for the state,

⁵ National Health Accounts, 2015-16

⁶ This data may change in the recent years post introduction of PMJAY insurance scheme, and Out of Pocket expenditure should reduce in the recent years post 2018. However, data for this could not be found.

⁷ PRS legislative research, Madhya Pradesh Budget Analysis, 2019-20

and about 1% of the state's GDP. Due to this low spending on health by the government and inadequate coverage of social insurance schemes results in high share of private expenditure for health care in the state. However, in the coming years, this ratio will change since the rollout of PM-JAY insurance scheme has seen many families opting for this insurance (More than 100 million individuals from eligible families in MP have received the e-card in till date⁸). The state had been struggling a lot in recent years in fulfilling the required number of health workers for an optimal operation and is still facing shortages of Medical Officers, Pharmacists, Male Multipurpose Health Worker (MPW) and Staff Nurse. However, the state has been able to fulfill the required numbers of ANM in the state recently. Moreover, with the central government's funding for the new Health and Wellness Centres (HWC) in the state, there has been induction of nurses (termed as Community Health Officer) to be stationed at these HWCs which would be extensions of SHC and PHC. These HWCs will now also manage the Non-Communicable Diseases (e.g. diabetes, hypertension and cancer) with RMNCH+A and communicable diseases and promote health and wellness in the community (e.g. promoting Yoga). Currently in Madhya Pradesh, there are a total of 2,531 operational HWCs⁹ linked with SHC and PHC. Once fully operationalized by 2022, this tier will provide the integrated package of services to the community across promotive, preventive and curative dimensions of health care.

⁸ PM JAY, Ayushman Bharat, Madhya Pradesh statistics

⁹ AB-HWC Portal data; <https://ab-hwc.nhp.gov.in/>

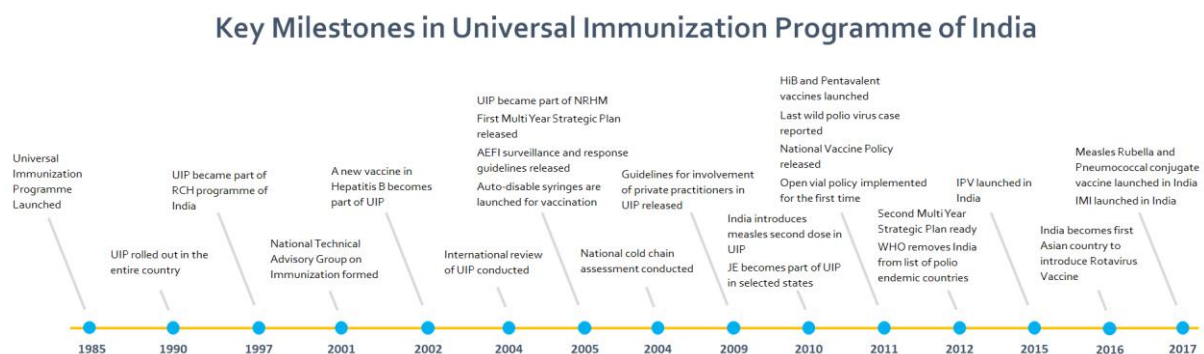
3. Introduction

3.1. India's immunization programme

The landscape of routine immunization in India has changed rapidly in the last two decades, with introduction of new vaccines, intensification of programme to reach remote / inaccessible rural and tribal areas and involvement of multiple stakeholders in a concerted effort to increase immunization coverage in the country. All this effort is towards reducing the Infant Mortality Rate (IMR) to 25 per 1000 live births by 2030 under the Sustainable Development Goal target, and to achieve this, the programme is reaching about 30 million pregnant women and a birth cohort of 26 million, through 9 million immunization sessions annually¹⁰.

The government of India launched the country's first immunization programme EPI in 1978 with four vaccines (BCG, OPV, DPT and Typhoid-paratyphoid) and a target coverage of 80% infants. The programme was renamed as UIP in 1985 with addition of two new vaccines and more emphasis on quality of care, reducing mortality and morbidity from six Vaccine Preventable Diseases (VPD) and strengthening cold chain, monitoring and evaluation and vaccine self-sufficiency through local production. A clear direction for systematically scaling up immunization coverage only came in 2011, with the National Vaccine Policy, which refocused Govt's strategies on increasing operational efficiency of the immunization programme in order to increase the coverage. Along with several key decisions on supply and demand side issues, the policy also set directives on human resources, such as to integrate immunization efforts under NRHM (now NHM), in order to increase competent workforce for immunization and develop a cadre for monitoring and supervision.

Figure 4: Key Milestones in Universal Immunization Programme of India



Since the break of 21st century, the UIP programme saw new strategies (formation of NTAGI, AEFI guidelines, Multi Year Strategic Plans, national vaccine policy, multi-dose vial policy etc.), new technologies (auto disable syringes, hub-cutters, vaccine vial monitors etc.) and new vaccines (Hepatitis B, Japanese encephalitis, Measles 2nd dose, Hemophilus influenzae

¹⁰ cMYP, 2018-2022, MohFW

type b, Pentavalent, Measles and Rubella (MR), Rotavirus and Pneumococcal Conjugate). One of the key successes of the programme was in 2012 when WHO removed India from the list of polio endemic countries. Moreover, since the launch of UIP, India has seen significant reduction in the burden of VPDs.

The central stakeholder for the immunization programme (UIP) is the government of India (from central to sub-district), who is coordinating the efforts across the country from policy to last mile vaccine delivery, with support of several multilateral donors and partner agencies. At the national level, The Ministry of Health and Family Welfare coordinates the UIP through its Immunization Division (ITSU) for all policy, technical and managerial issues, and the funds are channeled through National Health Mission based on Programme Implementation Plan (PIP) prepared by each state. The state Department of Health and Family Welfare (led by Director of Health Services) and Secretary of Health are responsible for the operations of the immunization programme and coordinate with the district health administration bodies. The state level bodies are responsible for implementing the immunization programme and managing infrastructure, staff and services related to immunization sessions. The responsibility of the programme cascades down to the Chief Medical and Health Officer and District Immunization Officer at a district level and Block Medical Officers at a block level. The Auxiliary Nurse and Midwife and other Community Health Workers delivers the immunization services at a community level.

In terms of infrastructure, there are 27,000 cold chain points¹¹ across the country, which can be categorized in National level GMSDs, a network of Primary Vaccine Stores and Regional Vaccine Stores, District Vaccine Stores, Block Vaccine Stores and Cold Chain Point at Primary Health Centre or Community Health Centre (last cold chain point). Every cold chain point has been mandated to be equipped with Cold Chain Equipment (based on its tier), for example Ice Lined Refrigerators, Deep Freezers, Walk-in Coolers and Walk-in Freezers. All the vaccines are mandated to be stored at a temperature of +2°C to +8 °C.

Presently, the UIP is in its third Multi Year Strategic Plan (2018-22); where the key objective is to achieve and sustain the target of 90% full immunization coverage along with strengthening the program management, vaccine logistics and cold chain, introduce new vaccines while bringing greater efficiency and accountability in service delivery. To achieve these targets, the government of India has also drafted a roadmap document for states to focus on areas which are lagging and strengthen the programme through Mission Indradhanush (MI) (launched in December 2014) and Intensified Mission Indradhanush (IMI) (launched in October 2017). Together, MI and IMI resulted in vaccination of 31 million children in 537 districts across the country, where 8 million children achieved the full immunization

¹¹ Techno Economic Assessment of eVIN, MoHFW, 2018

status. In addition, 8 million pregnant women received tetanus toxoid vaccine through this effort¹².

The latest slogan of, "5 Saal 7 Baar Choote Na Teeka Ek Bhi Baar"¹³ and the National Immunization Schedule could be seen at every health centre or session site in Madhya Pradesh, relaying the policy direction set by the government of India.

Table 2: National Vaccination Schedule Implemented in Madhya Pradesh

National Vaccination Schedule for Infants and Children (2019-20)			
Due / Maximum Age	Vaccine	Amount	Administration
At birth / within 24 hours	Hepatitis B	0.5 ml	Intramuscular / Outer side of left thigh
At birth / within 15 days	OPV	2 drops	Oral
At birth / within 1 year	BCG	0.05 ml	Intradermal / Upper left arm
At 6 weeks	OPV 1 st dose RVV 1 st dose fIPV 1 st dose PCV 1 st dose Pentavalent 1 st dose	2 drops 5 drops 0.1 ml 0.5 ml 0.5 ml	Oral Oral Intradermal / Upper right arm Intramuscular / Outer side of right thigh Intramuscular / Outer side of left thigh
At 10 weeks (or 4 weeks after 1 st dose)	OPV 2 nd dose RVV 2 nd dose Pentavalent 2 nd dose	2 drops 5 drops 0.5 ml	Oral Oral Intramuscular / Outer side of left thigh
At 14 weeks (or 4 weeks after 2 nd dose)	OPV 3 rd dose RVV 3 rd dose fIPV 2 nd dose PCV 2 nd dose Pentavalent 3 rd dose	2 drops 5 drops 0.1 ml 0.5 ml 0.5 ml	Oral Oral Intradermal / Upper right arm Intramuscular / Outer side of right thigh Intramuscular / Outer side of left thigh
At Nine months	Vitamin A 1 st dose MR 1 st dose PCV booster	1 ml 0.5 ml 0.5 ml	Oral Subcutaneous / Upper right arm Intramuscular / Outer side of right thigh
Between 16 to 24 months	Vitamin A 2 nd dose OPV booster MR 2 nd dose DPT 1 st booster	2 ml 2 drops 0.5 ml 0.5 ml	Oral Oral Subcutaneous / Upper right arm Intramuscular / Outer side of left thigh
Between 5-6 years	DPT 2 nd booster	0.5 ml	Intramuscular / Outer side of left thigh
At 10 years	Td 1 st dose	0.5 ml	Intramuscular / right arm
At 16 years	Td 2 nd dose	0.5 ml	Intramuscular / right arm

3.2. Immunization in Madhya Pradesh

In the last two decades of implementation of UIP in India, several surveys and evaluation have found Madhya Pradesh to be one of the weakest states in the country to reach the immunization coverage targets. Low immunization coverage has been deemed as one of the primary reasons for high IMR and U5MR in the state in the last two decades. The immunization programme is critical for the state to bring these indices down, and it has an

¹² Roadmap for achieving 90% immunization in India, MoHFW, 2019

¹³ Let's not miss any vaccine, visit seven sessions in five years

ambitious annual target of immunizing 1.9 million children and 2.2 million pregnant women. Although, the trend of the burden of VPDs (Diphtheria, Pertussis, Measles, Neonatal Tetanus) in the state is decreasing y-o-y, but there is still a reasonable scope of improvement. The state has faced several issues in improving its immunization coverage because of its large size, presence of scattered tribal population and migration for labor and hard to reach areas in dense forest or river basin. Since, literacy rate has been comparatively low in the state, pertinent issue of lack of awareness of vaccination was one of the biggest challenges the state had to work on in the last decade. Weak health system; inadequate sub-health centres, lack of manpower, broken logistics and cold chain, home deliveries, challenges in last mile delivery and weak intersectoral coordination; and planning; inadequate number of sessions, unidentified high-risk areas and beneficiaries; have been some of key challenges for the state of Madhya Pradesh in the last decade to improve the immunization coverage and quality of service. However, a tremendous improvement has been seen since NHFS-4 in 2015-16, when not only the state indicators are improving, but the large inter-district variation is also minimizing steadily. Figure 5 compares Madhya Pradesh's performance in achieving full immunization against some of the other EAG states. In the latest national roadmap for achieving 90% FIC, majority of the districts of Madhya Pradesh are mandated to; prioritize and focus their immunization strategies on the districts with poorest performance, improve their routine immunization plans (focusing on comprehensive microplanning), conduct gap assessments in those districts, generate demand for immunization while reducing fear of AEFIs, taking a comprehensive health systems approach to strengthen immunization system, which includes health workforce, infrastructure, managing supply chain, managing data and information, generating demand, financing, leadership and governance and supportive supervision, as well as, regular monitoring of immunization at a district level.

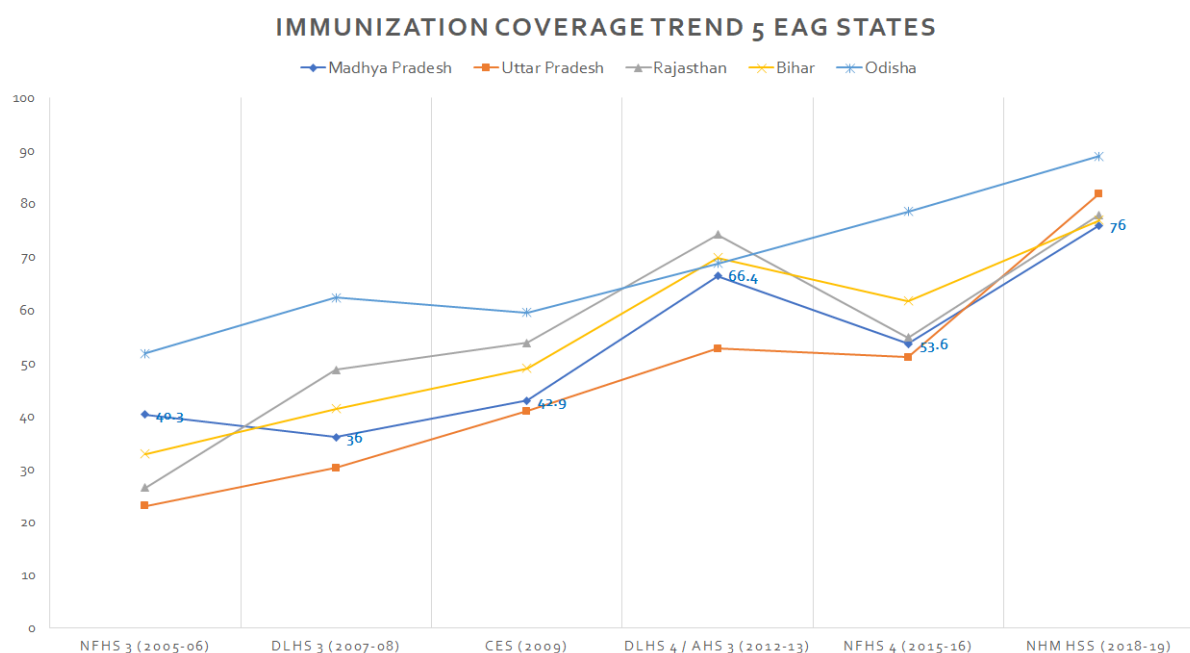


Figure 5: Immunization Coverage Trends Among 5 EAG States

"The government of Madhya Pradesh has taken various steps in the last 4-5 years to significantly improve immunization service quality and coverage, through systematic interventions at all tiers of health system. Equally, we have been supported by various partners like UNICEF, UNDP, WHO, JSI & others on areas like vaccine logistics, cold chain management, VPD surveillance, supportive supervision and capacity building. However, I would like to give the credit for this improvement, which we will see in the upcoming surveys, to the thousands of health workers who have worked tirelessly through various sessions and campaigns to ensure a prosperous future for the children of Madhya Pradesh."----- Dr. Santosh Shukla, State EPI Officer, Madhya Pradesh



Exhibit 1: Dr. Santosh Shukla, SEPIO, Madhya Pradesh showcasing the program immunization in MP

3.3. UNICEF's Health System Focus in Madhya Pradesh

UNICEF's envisions that, a health system that closes the gaps in access to quality services and in child health and nutrition outcomes contribute to Universal Health Coverage and the Sustainable Development Goals and is resilient. UNICEF in its latest Health Systems Strengthening (HSS) Approach defines HSS as actions that establish sustained improvements in the provision, utilization, quality and efficiency of services delivered through the health system and encourage the adoption of healthy behaviors and practices. UNICEF's HSS approach involves activities at all levels, acknowledging the importance of community engagement and sub-national management capacity to the overall performance of the health system, with a focus on the most disadvantaged.

UNICEF's support to Madhya Pradesh's government is underpinned by this strategy, strengthening the state's health systems and institutions for them to be able to implement new and improve the quality of existing key maternal, newborn and child health interventions as planned in the National Health Mission (NHM) and National Health Policy (NHP). Focusing on the RMNCH+A continuum of care, UNICEF's support in immunization and child health, as part of the overall health system has led to several improvements, e.g. initiation of Alternate Vaccine Delivery System (AVDS)¹⁴ by UNICEF in the state has significantly improved the last mile delivery issues faced by the immunization programme. Following the integration of UIP within the RMNCH+A continuum, the second Multi Year Strategic Plan for UIP 2013-17 (underpinned by National Vaccine Policy 2011, and National

¹⁴ A system of delivering vaccines from cold chain point to immunization sessions through a contracted person, who carry the vaccine carriers on scooters, autorickshaw or motorcycle.

RMNCH+A Strategy 2013), was launched. It put a lot of focus on developing a separate supportive supervision cadre to supervise the existing staff in cold chain management, vaccine logistics, effective vaccine management, routine immunization planning and advocacy & communication. The onus was put on the state governments to work with NHM and develop state specific operational plans for supportive supervision based on the broad framework provided in the Multi-Year Strategic Plan. Since, the supervisory cadre is not a sanctioned post from Government of India, Madhya Pradesh has allocated this role to several MPWs, Lady Health Visitor (LHV) or ANMs. The role of these supervisors is to monitor critical program areas under NHM and provide support to the frontline health workers. Along with other program areas, these supervisors in Madhya Pradesh are also supposed to monitor routine immunization sessions and provide supervision to ANM and ASHA on critical practices. However, the performance of this supervisory cadre has been far from satisfactory in the state because of lack of training and support structure around supportive supervision in health programs.

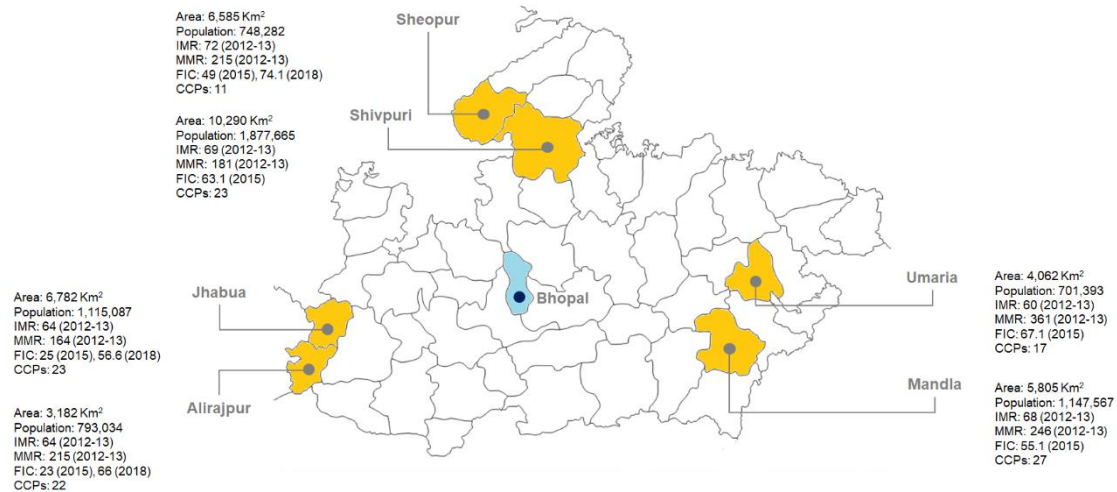
With the high-level goal for the state to achieve 90% immunization coverage, UNICEF has been providing technical support to the Government of Madhya Pradesh, in strengthening routine immunization on areas related to demand generation, supply of vaccines and logistics, and quality of services. In September 2014, with GAVI HSS catalytic funding, UNICEF extended this support aimed at strengthening the supply and demand side interventions in immunization (e.g. weak vaccine logistics, weak data management, lack of uniform microplanning, knowledge and skills gaps among frontline workers, absence of structured review process for decision making etc.), through comprehensive supportive supervision (Routine Immunization Supportive Supervision). It was decided to extend this support initially to 17 RMNCH+A High Priority districts, which was later modified to 6 high priority districts and 8 aspirational districts which have been continuously lagging in health and socioeconomic indicators¹⁵.

3.4. Objectives of the Case Study

The case study on Routine Immunization Supportive Supervision (RISS), focusses on UNICEF's six High Priority Districts (Alirajpur, Jhabua, Shivpuri, Sheopur, Umaria and Mandla), and how the initiative contributed to the health system and addressed the capacity gaps as per UNICEF's health system strengthening approach, primarily focusing on immunization. It is an attempt to document the results and lessons learnt from the supportive supervision mechanisms in routine immunization, focusing on rural, tribal and hard to reach blocks. The case demonstrates how this initiative leads to sustainability of supply and demand side interventions in immunization and connects with other health system areas for reducing childhood illnesses and mortality in those districts.

¹⁵ As per NITI Aayog

Figure 6: Geographical Focus of the Case Study



3.5. Data Collection Methodology and Study Sample Size

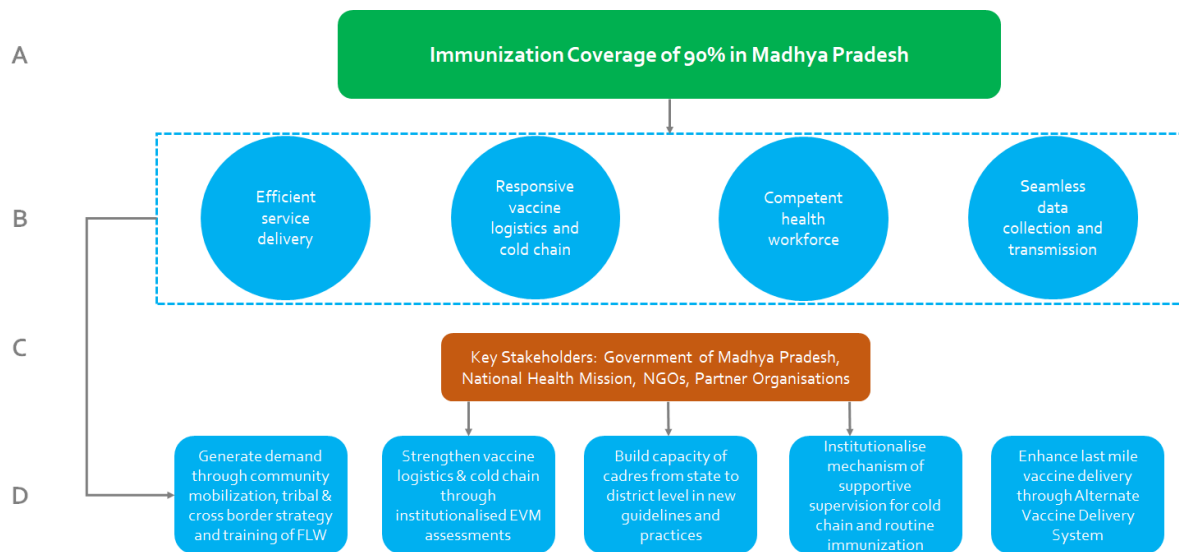
A mix of primary and secondary data was collected from six districts and state capital (Bhopal). The sites for data collection were chosen based on a purposive sampling methodology, trying to understand the outcomes and impact of the RISS project from various perspectives. The sites for data collection were similar to the intervention sites of the project, from District level going down to the RI session sites. In total, 28 sites were visited in the abovementioned districts to meet go officials from UNICEF, Ministry of Health and IAPSM. Following methods were used to collect data for this case study:

- a) Key Informant Interview (KII): These were qualitative in-depth interviews with officials who were aware of the RISS project or who have been involved in the same. The objective was to gather their first-hand knowledge of how the RISS project has positively affected the immunization programme in those districts. A total of 42 KII were conducted during the data collection phase of the project.
- b) Focus Group Discussions (FGD): FGDs were specifically undertaken at the session sites with ANMs, ASHAs, MPWs, LHV etc., to gather their experience of being supervised along with administration and delivery of immunization services post RISS interventions. Focus was on collecting their perceptions, opinions and gathering anecdotal evidence to support the hypothesis of the study. Four (4) FGDs were conducted with a total of 35 staff members.
- c) Field Observation: This included shadowing of a RISS mentor in district Shivpuri and observing how practices have changed based on RISS interventions.

4. Intervention

UNICEF's support in Madhya Pradesh has been focused on reducing the infant and under 5 children mortality rate, and hence, technical assistance in immunization has been prioritized over the last decade. As per its global strategy, UNICEF's assistance in immunization in the state follows the health system approach where the interventions are aimed at building the system which can function by itself once the support finishes. Figure 7 presents a Theory of Change framework for UNICEF's support in realizing the 90% immunization coverage target (A) for the state.

Figure 7: Theory of Change for UNICEF's Support for Immunization in Madhya Pradesh



Majority of UNICEF's interventions (D), are focused on strengthening the health system in the state for immunization (B). These interventions are carried out in collaboration with various partners (C) in the state to ensure accountability and sustainability. In addition to this, most of UNICEF's work is also focused on those geographies where access to services has been found to be inequitable, e.g. vulnerable population, tribal areas and underserved groups in the state.

Cognizant to this approach with focus on districts with underserved population with lower immunization coverage, UNICEF in 2014, launched the Routine Immunization Supportive Supervision (RISS) initiative in collaboration with Directorate of Health Services, National Health Mission, Directorate of Medical Education and Indian Association of Preventive and Social Medicine (IAPSM) MP Chapter. The initiative enlisted the community medicine departments of medical colleges (14) in Madhya Pradesh, who nominated senior professors to be trained in routine immunization & cold chain and act as senior mentors for supportive supervision for routine immunization in the state. The initiative was initially launched in 18 high priority RMNCH+A districts from 2014 to 2017 and later refocused to 14 districts (8

aspirational and 6 high priority). The intended outcome from this initiative was improved immunization coverage and quality of service in the districts through the following objectives:

- Capacity building of medical college supervisors on the principles and methods of immunization supportive supervision, to develop the resource pool of master trainers/supervisors
- Enhance the number and quality of supervisory visits by in service supervisors at district and block level, through the transfer of knowledge, skills and practices during joint supervisory visits with medical college mentors, in selected districts
- Create a resource pool of external and internal supervisors for routine immunization at state, region, district and block level
- Initiate real time corrective actions and hands on supportive supervision of community and facility staff at select supervisory sites
- Formally share the key supervision findings at block, district, regional and state levels periodically for follow up on key recommendations

The process of supportive supervision was managed using a Government of India standard immunization checklist, which were uploaded on a mobile app for easier and faster administration, and data consistency. These checklists covered both demand and supply elements of immunization, e.g. vaccine availability, cold chain functioning, injection practices, microplanning, AVDS, AEFI management, interpersonal communication with beneficiaries through four-key messages, usage of due lists, and beneficiary feedback. One of the key differences between supervision visits by in-service supervisors and RISS supervisors was the element of on the spot hands-on supervision to the frontline health workers, based on deficiencies noted during the data collection.

Initially, the mobile app was developed on an ODK platform which served as the phase 1 of the project. After the success of phase 1 of the project, the app-based checklists were integrated with NCCMIS platform of Government of India for better data visibility and control. Currently, through the NCCMIS Supportive Supervision app, mentors can supervise a cold chain point and session site, while taking beneficiary feedback and identify left out children using the house to house monitoring checklist. The data from the supervision visits were reviewed on a quarterly basis and joint review meetings were organized with the state RI cell for feedback, action and direction for the next period. Moreover, later in the project, a WhatsApp group was formed with all the key stakeholders where critical data from the supervision visits were posted by the supervisors.

4.1. Key Statistics from RISS Initiative

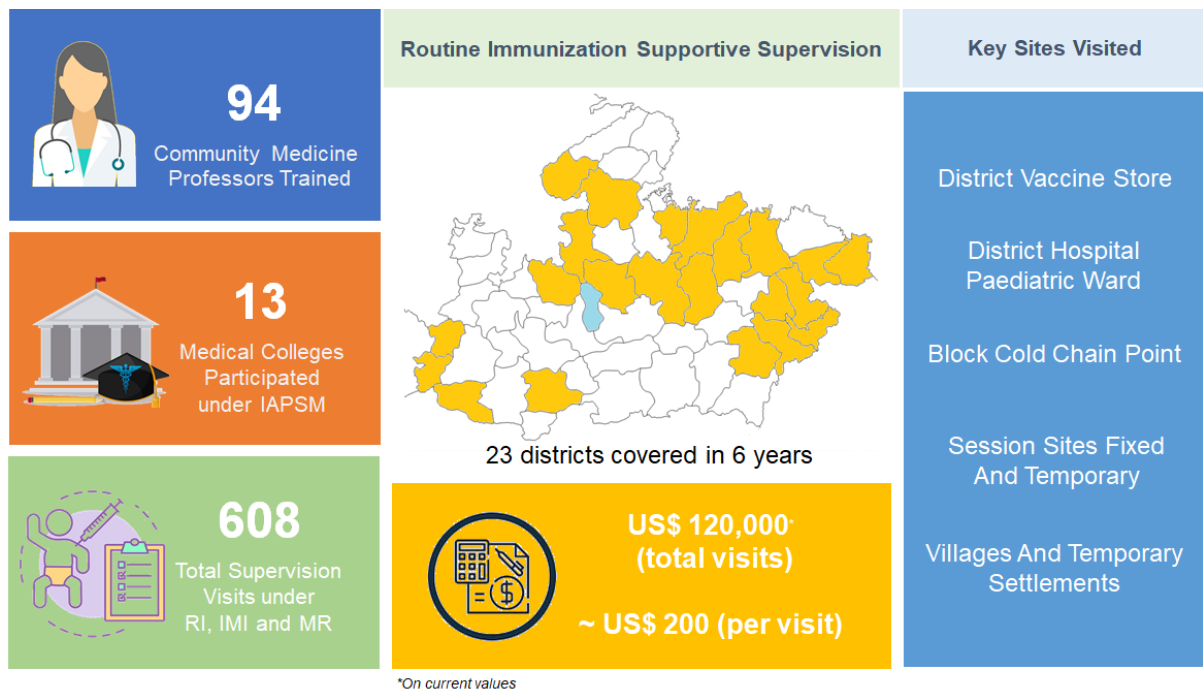


Figure 8: Key Statistics from RISS Initiative in Madhya Pradesh

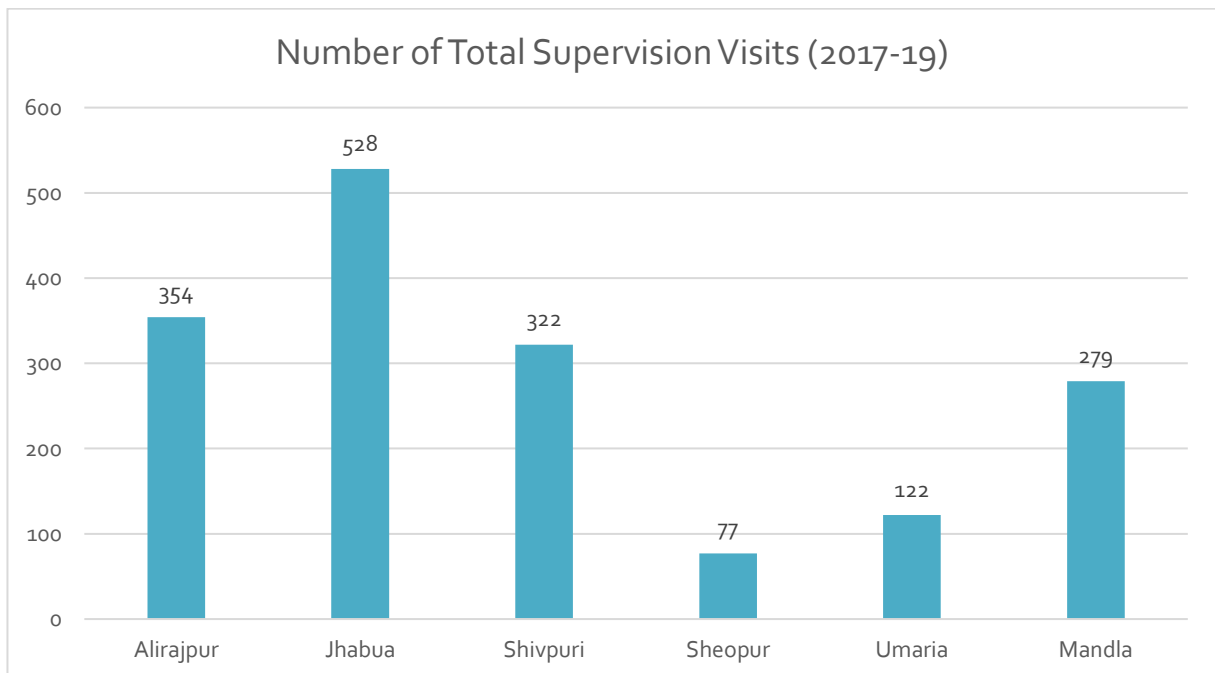


Figure 9: Total number of Supervision Visits between 2017 and 2019 (Source: NCCMIS SS Portal)

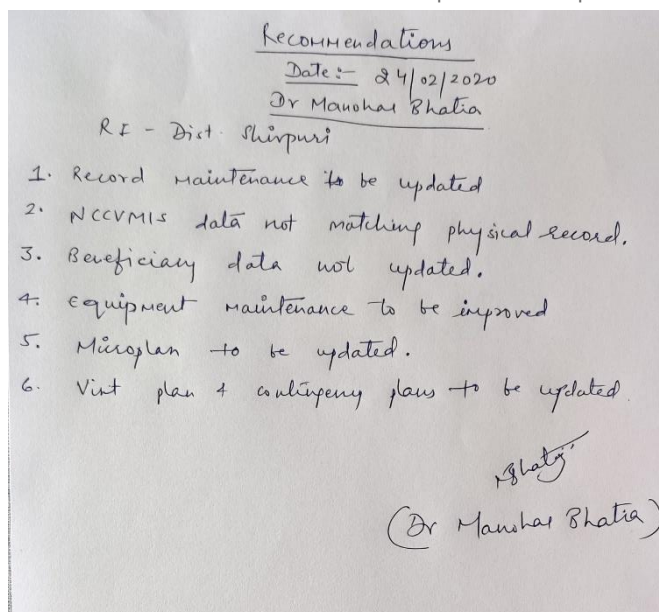
Once the RISS initiative helped develop the mobile app for assisting in regular routine immunization monitoring and supportive supervision, the number of supervision visits by government officers in the districts also increased. Figure 9 presents the snapshot in the six

districts where a total of 1,682 supervision visits were conducted and reported through the application between 2017 and 2019.

4.2. Process of On-site monitoring and supervision

A visit by RISS supervisor would consist of 2 days where the supervisors would travel early morning on first day to reach the designated district. The first day of the visit would be reserved for the district vaccine store and district hospital. In the first visit to a district vaccine store of a cycle, the supervisor would use the dedicated checklist to monitor 8 components ranging from human resources / training, infrastructure, cold chain equipment, preventive maintenance, temperature monitoring to vaccine stock and data management, distribution and monitoring. The information from the interview of the vaccine store in-charge and actual observation is recorded on the mobile app-based checklist. Following this, based on deficiencies noted, the supervisor demonstrates some of the best practices to the store in-charge and other staff of the store, e.g. proper storage of vaccine in ILR, conditioning of ice packs, record keeping or analysis of temperature records. For deficiencies beyond supervision, the supervisor writes a note handed over to the District Immunization Officer or sometimes the Chief Medical & Health Officer of the district.

Exhibit 2: Recommendations for a cold chain point after a supervisor



After completing the monitoring at vaccine store, the first day finishes at district hospital by visiting the pediatric ward and monitoring pneumonia and diarrhea management. The supervisor takes interviews of the chief staff nurse of the ward and the medical officer on duty to understand if zinc/ORS corners are operational and how are the children treated for pneumonia and diarrhea. A few samples of patient sheets are checked for diagnosis and treatment protocol followed, with availability of medicines accordingly. The supervisor also observes patient counselling by the staff nurse and interviews a few mothers to see awareness regarding these two diseases and prevention practices.

The second day begins early at a block level cold chain point to observe the vaccine & supply dispatch process, followed up by visit to the session site under the cold chain point, community monitoring in the house to house visits, finally return at end of the day to cold chain point, to observe the return process of vaccines and supplies. During the field visit the

front-line workers as well as the supervisory cadre, are mentored to close onsite gaps and implement local corrective actions. The visit is concluded with a debriefing meeting with the block medical officer (BMO) and District Immunization Officer (DIO), to highlight strengths, gaps and follow up actions. The supervisor also writes a recommendation note which is handed over to the BMO and DIO for actions which are monitored in the follow up visit.

Exhibit 3: Recommendations for routine immunization for block pohari after supervision

After completing the visit, the supervisor completes the visit report which is submitted to the project coordinator to be compiled and presented during the review meeting.

Recommendations
for Block - Pohari (CCP Bairaal)
Date: 25/02/2020
Dr Manohar Bhatia

1. All beneficiary data (Total Population, Target Infant) are available at Block only and CCPs at PHC level don't have any data. This should be corrected.
2. Availability of Vaccine (RVV, MR) to be assessed immediately
3. Training of incharge CCH to be conducted for (Cold chain manual) as soon as possible.
4. Dry store maintenance poor. Racks and other furniture required for dry store
5. Vaccination levels in ~~some~~ urban areas which are nearby PHC are having poor performance. Many children are left out/drop out.
6. Registers (stock, vaccine distribution) etc. are not updated at CCP Bairaal
7. Increased frequency of visits see to CCP Bairaal required from higher authorities

Bhatia
(Dr MANOHAR BHATIA)

5. Results from RISS Initiative

5.1. Increasing equity in the provision of health services

In 2013, immunization was made part of RMNCH+A continuum of care across various life stages, primarily including adolescence and pre-pregnancy, pregnancy, birth, postnatal and childhood. With addition of new vaccines in the UIP, immunization now occurs in four out of five stages of this continuum, for pregnant mothers and children. An integrated package of services across this continuum is provided at various levels of health system. However, for more than half of the country situated in a rural setting, majority of these services are provided at the primary healthcare level. In addition to this, with the initiation of Village Health and Nutrition Day (VHND), services related to water, sanitation, hygiene, nutrition and education are also integrated with health. However, among all these integrated programmes, universal immunization programme is the largest and carries a large degree of weight in gaining community's trust in accessing other services from the public system. This becomes even more important when the private sector's share in immunization is less than 10%, contrary to general health expenditure and share. Government of India provides the complete immunization package (up to 16 years of age) for free, which may cost somewhere between USD 500-1,000 in Indian private sector¹⁶ including fee for the service. Hence, it is imperative that the public sector health system ensures coverage of 90% or more to ensure 26 million (annual average cohort size) children are fully immunized.

However, in 2015, it was noted that Madhya Pradesh was lagging in immunization coverage. Amongst the 52 districts; Alirajpur (AJ), Jhabua (JB) and Sheopur (SP) were exhibiting below 50% of coverage¹⁷, and Mandla (MD), Umaria (UM) and Shivpuri (SV) barely showing an average performance. One of the key challenges in five of these districts (AJ, JB, MD, SP and UM) was the large inhabitation of tribal population who migrate to other states for labour during non-agricultural season. Hence, it used to be difficult for the health workers to locate the children for immunization. Moreover, due to long periods of migration and temporary settlements, these families would either access the health system in neighboring states or use alternative systems. In addition to this, UM and MD have tribal population living in dense forest, with limited access to health centres. Due to inaccessibility, occurrence of home-based deliveries amongst these population used to be higher, leading to newborns not receiving intended vaccines.

Between 2015 and 2018, this situation has considerably improved through various interventions in the UIP, a greater focus on tribal population, better identification and registration of pregnant women, improved planning for immunization sessions and consistent monitoring of sessions and supervision of immunization staff. In the districts with

¹⁶ Estimated price based on several sources and primary data collection

¹⁷ NFHS 4, 2015-16

predominant inhabitation of tribal population (AJ, JB, MD and UM), emphasis was given on frequent household surveys in villages / communities and creating a detailed list of beneficiaries, even with migratory households. This led to development of better immunization microplans at block and district levels, resulting in more sessions being held (e.g. in Jhabua number of sessions (monthly) held in 2019 were close 2,000 in comparison to 750 in 2012) to cover population living in hard to reach areas or dense forests. Moreover, consistent monitoring and supervision visits post RISS initiative ensured that ASHA and ANM were frequently tracking the migratory population and managing their sessions as per the microplans.

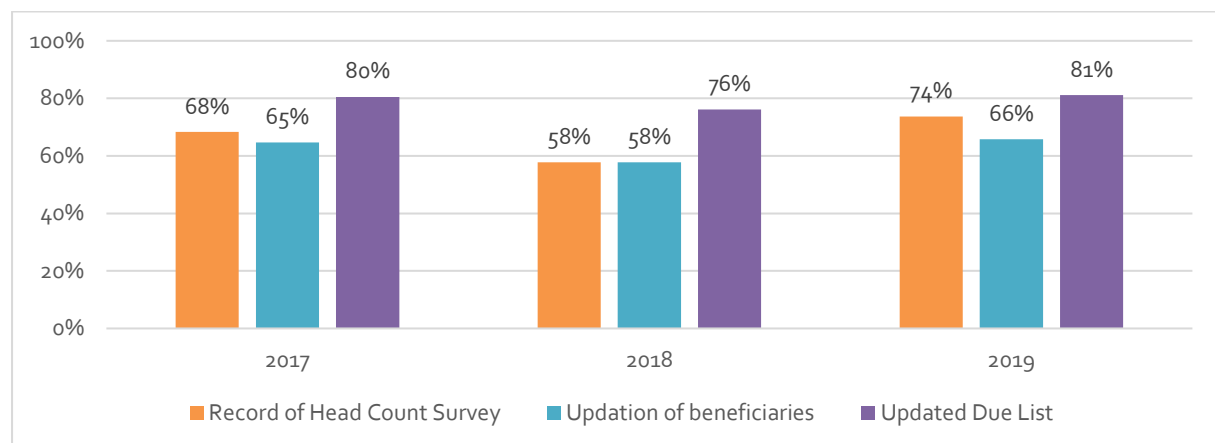


Figure 10: Data from supervision visits in six districts on session planning (n=1,682) (Source: NCCMIS SS Portal)

Figure 10 presents data from the session monitoring visits in the six districts (n=1,682), depicting how sessions are now being planned based on head count surveys and due lists with ANMs updating the beneficiary data on a regular basis, than before 2015. These activities have helped the health workers track and provide services to the beneficiaries, thereby improving the immunization coverage in these districts. These practices combined with regular campaigns of Mission Indradhanush are resulting in better tracking of migratory population and ensuring children are immunized as per schedule.

"In the last couple of years, we have started to organize special campaigns around the two major festivals in our districts, one in March (Bhagoria and Holi) and other in October/November (Diwali), when the tribal population return to their native land. During these campaigns, we locate the existing children from our lists, and identify new ones who are born during migration. This has massively helped improve the immunization coverage in our district." ----- Dr. Rahul Ganava, DIO, Jhabua

One of the key outcomes of better planning and ramping up immunization sessions in these districts was that the frontline health workers (ASHA, AWW, ANM) can now demonstrate to the community how immunization has led to reduced incidence of VPDs and lower U5MR. This has boosted the status of health workers with sustained trust from the community.

Now, there are many girls, pregnant women and families arrive at immunization sessions and VHNDs voluntarily and access the variety of services being offered by the system.

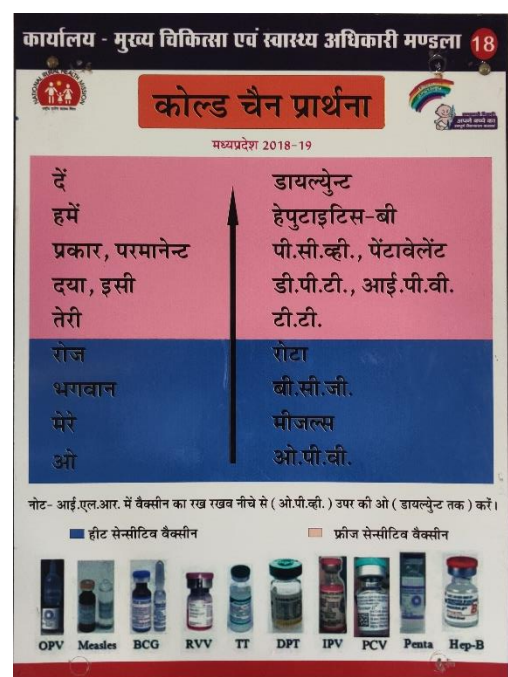
5.2. Improving quality of health services

World Health Organization states that health services are of high quality when they are effective, safe, centered on patient's needs and given in a timely fashion. Translating these to immunization would mean; availability of applicable vaccines (following the stability criteria), safe injection practices, following the immunization schedule and providing key information to the mothers.

The state of Madhya Pradesh has significantly improved the cold chain and stock management of vaccines in the last 5 years through various initiatives. The state has conducted two EVM assessments in the last decade and worked on improving its cold chain infrastructure and practices. In the six districts visited (AL, JB, SV, SP, UM, MD), a designated district vaccine store was functional with dedicated staff and functioning cold chain equipment. Standard practices of vaccine storage, stock management, transportation, cold chain equipment maintenance was followed. All the stores were equipped with functional Ice-Lined Refrigerators (ILR) and Deep Freezers (DF), with fully maintained record keeping books for temperature and stock.

Similarly, all the block level cold chain points across these districts (total 8) visited has functional ILRs and DFs with Cold Chain Handlers (CCH) following standardized practices for vaccine storage and stock management. A key innovation in the state for vaccine storage has been instituted by the State Immunization Officer, in the form of, 'Cold Chain Prarthna' (Cold Chain Prayer). The prayer helps the CCH understand and memorize the right scheme for storing vaccine in the ILR (see exhibit 3). Moreover, each district has a sanctioned post of Cold Chain Technician who is responsible for the maintenance and repair of the cold chain equipment. Finally, there are abundant vaccine cold boxes and vaccine carriers for transportation of the vaccine. The last mile transportation of the vaccine (from cold chain point to the session) is managed through an Alternate Vaccine Delivery System. These practices ensure that cold chain is not broken at any point of vaccine distribution and vaccines are administered in their right quality.

Exhibit 4: Cold Chain Prayer in Madhya Pradesh for Vaccine



In terms of vaccine logistics, an electronic vaccine logistics management information system named eVIN has been rolled out by UNDP throughout all the cold chain points, which is managed either using a computer or an android mobile phone. The application manages and provides real time visibility on temperature of ILRs throughout the state and the availability of vaccines at each cold chain point. This has created a seamless system of stock management and transportation throughout the state, which is monitored at the state level by the State Immunization and Cold Chain Officer.

Exhibit 5: Mr. Vipin Srivastava, State Cold Chain Officer reviewing vaccine stock in state through eVIN



In several interviews conducted at the district vaccine stores and block level cold chain points in the six districts covered, all the CCH reported that the monitoring and supervision visits by several supervisors and monitors (UNICEF, UNDP and WHO) have helped them push their boundaries and understand the cold chain and vaccine management practices minutely. Although, several cold chain and vaccine management training are organized for the cold chain handlers, but personalized supervision seems to have provided much higher impact on the performance of the cold chain handlers. In Jhabua, the district vaccine store in-charge and the DIO have instituted a mechanism to monitor the cold chain equipment, with a comprehensive logbook which includes temperature monitoring, equipment maintenance and monitoring & supervision.

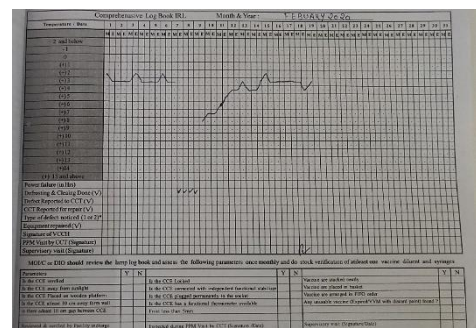


Exhibit 6: Comprehensive Cold Chain Logbook for ILR

"One look at the logbook, and you will know the full status of the equipment. It also helps me remember when to defrost and monitor temperature fluctuations in the ILR as well." ----- District Vaccine Store In-Charge, Jhabua

Between 2017 and 2019, a total 182 visits were made by several supervisors to various cold chain points in the six districts. During those supervision visits, data on vaccine storage, stock management, cold chain equipment and distribution were recorded. The data shows a steady improvement in data recording, vaccine storage and distribution. Figure 11 presents four key elements from those supervision visits on condition of the ILR, up-to-date stock registers, correct vaccine storage and documented AVD plan in the cold chain points.

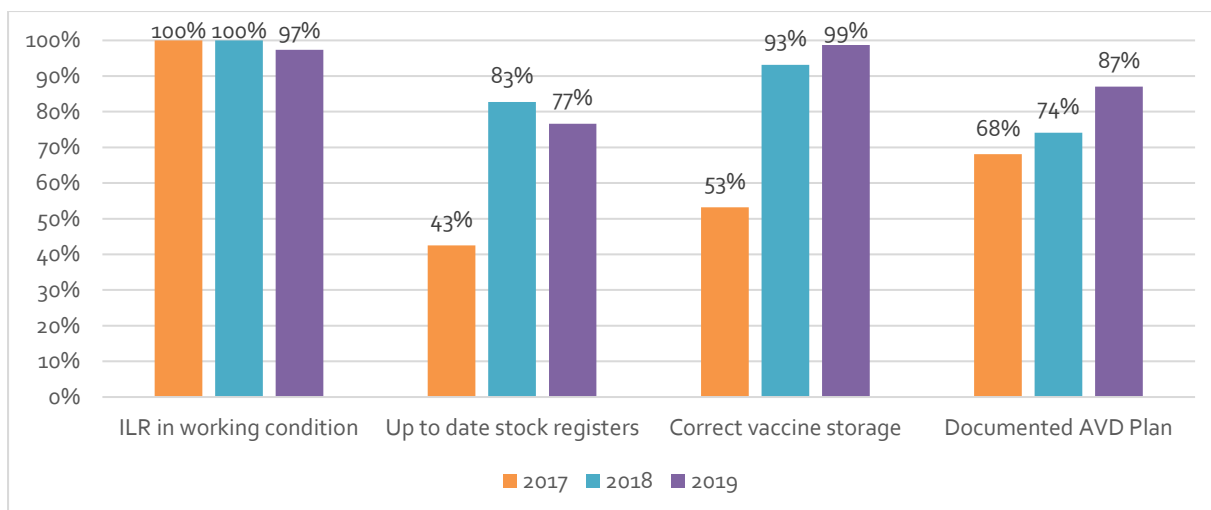


Figure 11: Data from supervision visit in cold chain points of six districts (n=182) (Source: NCCMIS Cold Chain Portal)

In the context of quality during administration of vaccines in a session site, the ANMs of the state have been trained on routine immunization and administration of the vaccines during several RI training modules and the recently concluded CBI-RI (Capacity Building Initiative for Routine Immunization) training supported by UNICEF. The supervision visits to the immunization sessions focusses on quality of care, by monitoring safe injection practices, availability of MCP card and counterfoil and communication practices of the ANM with the mothers/family members of the child. All the interviewed ANMs reported that the supervision visits (especially by the external supervisors) have helped them improve these practices and gain knowledge of new guidelines over time as classroom training courses are not always helpful. During supervision visit, the supervisor after noting any deficiency in these areas, provide hands on instruction to the ANM to improve the practice. Figure 12 shows consistency in these as reported during the supervision visits between 2017 and 2019 in the six districts covered (n=1,682). Majority of the ANM's are reported to be exhibiting safe injection practices, with very few sessions being reported where hub cutters were not available. Availability of MCP card counterfoil and communication practice by ANM seems to be consistent over the years with majority of the sessions carrying important IEC material on immunization schedule, routine immunization, mission Indradhanush etc.

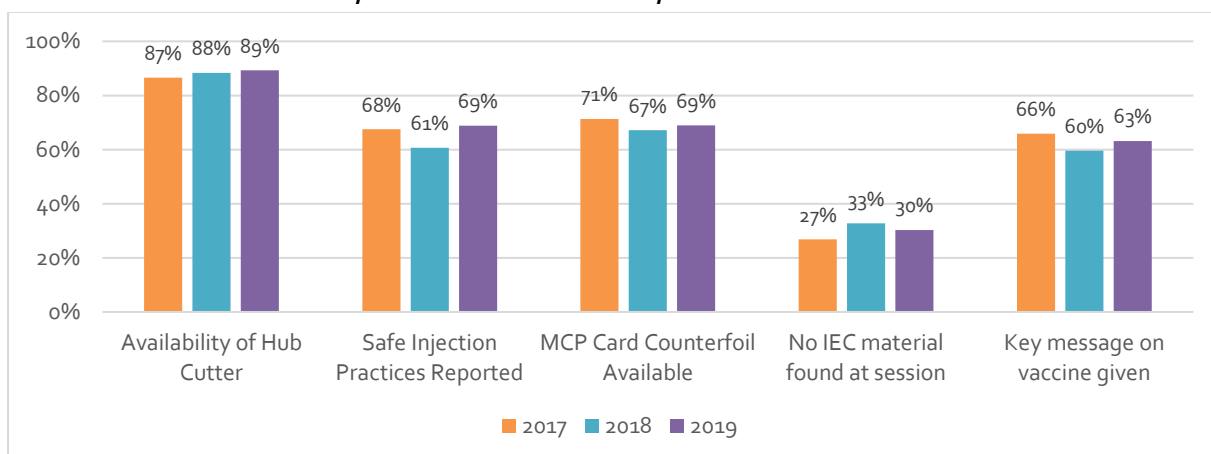


Figure 12: Data from supervision visits at session site in six districts (n=1,682) (Source: NCCMIS SS Portal)

"After rigorous training on routine immunization and numerous occasions of reviewing ANM's performance during the review meeting, with focus on safe injection practices, majority of the ANMs are now confident on vaccine administration through any route. However, there are always some staff members who struggle on these practices and it is being monitored closely."

----- Dr. Sanjay Rishishwar, DIO Shivpuri

With training and continuous supervision, vaccine administration practices have considerably improved during the sessions organized in the six districts, which has in-turn also increased the confidence of the health workers to manage other health programs within the community.

5.3. Implementing cross-cutting and sustainable interventions

5.3.1. Cross-cutting nature of RISS project

The RISS project was designed in a way to develop a resource pool of highly trained professionals who can be deployed in different scenarios and activities across the gamut of Government of Madhya Pradesh's health services provision. Throughout the initiative, more than 80 senior faculty of different medical colleges were trained on routine immunization practices and pneumonia/diarrhea management. An additional component in the RISS initiative was monitoring and supervision of district hospitals and CHCs on pneumonia and diarrhea management. The RISS supervisors during their visits for RI, added one more stop to their itinerary in visiting the pediatric ward of district hospital or the community health centre. Like RI supervision visit, a checklist was developed to be administered for this purpose. The key objective for adding this component was to monitor the treatment of pneumonia and diarrhea, medicine availability at the site, and counselling & patient support. There is not enough data (from the limited number of visits, 140 in Madhya Pradesh) to draw any possible conclusions of the results of these visits to the six districts (less than 20) covered during the data collection. However, anecdotal evidence to show critical findings and results, like absence of ORS/Zinc corners in facilities, prescription of antibiotics by medical officers treating diarrhea and weak counselling and patient support. However, some facilities



Exhibit 7: A comparison of ORS/Zinc Corner between CHC Petlawad (Left) and CHC Kathiwada (Right)

improved their practices after the feedback received from the supervisor. Community Healthcare Centre in Kathiwada (Alirajpur) is among one of them, where the officials used the funds from MP government's Kayakalp initiative to design functional and sustaining ORS/Zinc corners with potable water filled daily from the RO system. However, there is still a considerable improvement needed in the management of these diseases in Madhya Pradesh, with monitoring & supervision at district hospitals and CHCs made regular to unify the treatment and counselling protocols.

The resource pool created by RISS has been used in several other initiatives related to immunization in the state, like the EVM assessment in 2016 and AVDS assessment in 2018. The same resource pool was also used for concurrent monitoring during IMI and Measles Rubella introduction campaign in the state. The initiative has been extremely helpful for the professors of the medical colleges in understanding the ground realities of health system, which they could in-turn share with the postgraduate students of community medicine in their respective institutions. Since, the element of field visit is not very prominent in the

country's community medicine postgraduate curriculum, students find it difficult to absorb ground realities. However, for some students of Gandhi Medical College in Bhopal and other medical colleges, RISS provided an excellent opportunity of field experience and hands on health systems on ground, when they accompanied their professors to the field to observe routine immunization sessions and cold chain operations which they had so far only read in books and seen in videos.

In 2018, Government of Madhya Pradesh with support from UNICEF also rolled out CBI-RI in selected districts where RISS was rolled out. This initiative included training of ANMs and supervisory cadres on key RI elements (e.g. microplanning, sub-centre mapping, AEFI management etc.). These training modules were imparted during monthly meetings by the master trainers of the state, trained by UNICEF, including many of the RISS supervisors, to ensure complementarity and leverage this resource pool for district level training. Now, in several districts of MP, RISS supervisors and senior government officials at the district are leading the capacity building initiative during supervision visits or review meetings as per the training model.

5.3.2. Sustainability of Interventions

The national vaccine policy in 2001 gave the first directive of conducting supportive supervision in the UIP with a dedicated cadre. Since then, government of India launched checklists to be used for these visits and asked the state government to allocate the responsibility of supervision within the existing health system workforce. This cadre is known as sector supervisors in Madhya Pradesh. However, this supervisory cadre were not exclusive to UIP as they monitor and supervise frontline health workers in other programs. In Madhya Pradesh, a few officials started to use the government's checklist for supervision visits in early years of 2010 to monitor routine immunization, but because of the paper-based nature of system, it was not put into practice. Moreover, the supervisory cadre were not trained properly on routine immunization and supervisory skills to be able to effectively manage the supervision visits.

RISS initiative was launched in later months of 2014, when initially a basic ODK app was developed by UNICEF for an easy monitoring and supervision. Later, this app was revamped and made part of the NCCMIS portal, making it possible for anyone working in UIP to use it. By then, the Government of Madhya Pradesh had found this method of supportive supervision useful and had instructed all its senior officers and supervisory cadres to start using it. The state in 2018 also launched a dedicated cadre of State RI monitor, who were only responsible for monitoring and supervision of RI sessions. Once trained on using the application and the practice of supervision, a combined effort by the senior district & block officials and state RI monitors, resulted in a tremendous increase in monitoring and supportive supervision visits in the state from 2015 onwards. Between 2017 and 2019,

Madhya Pradesh saw a total of 17,744 supervision visits carried out by internal and external supervisors. In the meantime, other states in collaboration with UNICEF and WHO also started to use the application for supportive supervision in their own context. Figure 13 provides a snapshot of how the application developed by UNICEF and government of India has been used amongst the 5 EAG states in capturing data of supervision visits carried out in Routine Immunization. It is to be noted that the number of supervision visits in each state has been conducted as per their own context.

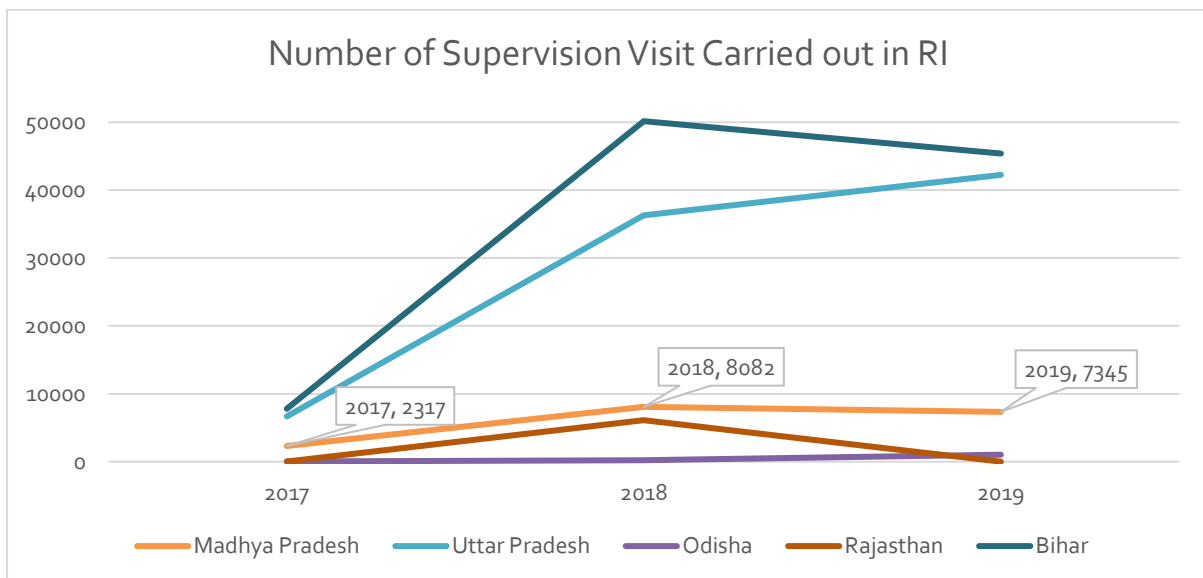


Figure 13: Comparative Analysis between five EAG States on Supervision Statistics through NCCMIS SS Application

In addition to this, the RISS initiative in Madhya Pradesh have also made the senior immunization and block level health officials competent on supervision practice. These officials have learnt the supervision practice by accompanying the RISS supervisors in the field and using the mobile application.

"I have been going on supervisory visits since 2013, but initially I had no idea what to do in those visits. We just used to check a few things in a session without any systematic supervision. However, since the launch of RISS initiative in Alirajpur, I have accompanied several supervisors to the field and observed the supportive element of supervision. This has personally helped me in understanding the key points of an immunization session and how

Exhibit 8: Dr. Narendra Bhaydia, DIO Alirajpur during supervision visit of a session in Sorwa



has personally helped me in understanding the key points of an immunization session and how

to monitor it and then supervise the ANM. The data collected through these supervision visits acts as a mirror for our staff which are discussed in our monthly meetings where ANMs are appreciated for the work and any deficiencies are noted and acted upon.” ----- Dr. Narendra Bhaydia, DIO Alirajpur

The findings from the monitoring & supervision visit by RISS supervisors also created an awareness amongst the district and state officials that there is a discrepancy between the reports and the actual scenarios on ground. Several interviewees conveyed a similar message that feedback from senior medical college professors are quite valuable for the senior district and state officials to understand the ground reality and act upon them. Anecdotal evidence also suggests that officials have become more responsive in addressing areas of improvement as notified by the supervisors.

"In the last 5-6 years of running the RISS project, our supervisors found a lot of deficiencies in the routine immunization processes, for example cold chain not functioning, lack of monitoring of temperature, non-availability of vaccines or weak interpersonal communication between ANM and mothers. These deficiencies were communicated to the respective officials of the block or the district for correction actions. Sometimes, there were cases which could not be addressed at a district level, resulting in involvement of state level officials. Later, a WhatsApp group was developed to highlight critical issues found during supervision through pictures, and we have observed that quick actions were taken by state and district level officials upon noticing the issue. Overall, I think the practices on routine immunization have improved in those blocks and districts where supervision visits have been conducted.” ----- Dr. D.K. Pal, Prof. and H.O.D Community Medicine, Gandhi Medical College, (also nodal personal IAPSM MP)

The financial sustainability of this multi-partner initiative is still a question for the authorities since it involves the medical college professors to leave their primary work (routine teaching and practice) to travel in the field. This results in a smaller number of supervision visits as compared to an inhouse supervisory cadre. Moreover, since the professors come from outside of the district, it also incurs a significant expense in travel and lodging. The average cost of 1 supervision visit under RISS is estimated to be USD 200 which includes honorarium for the professors and travel expenses. With this expense, this initiative becomes difficult for the state government to sustain it and increase the number of visits. Operationally, the medical colleges in the state find it difficult to send their professors for the visit because of the moratorium imposed by Medical Council of India (MCI) for the annual inspections which are conducted in a random manner. Hence, every year many of the planned supervision visits are missed by these supervisors. These challenges make this initiative difficult to be taken up by the government and sustain for longer periods.

6. Scalability of RISS approach

The RISS initiative managed through GAVI HSS catalytic fund has now completed 5 years and has provided the state of Madhya Pradesh, and especially, tribal and hard to reach districts, the know-how and technology to expand the supervision practice in routine immunization. However, in its current form, the initiative will be difficult to hand over to the government of Madhya Pradesh to manage regular operations and scale up. The key challenges in this respect are:

- Inability of the medical college supervisors to cover more sessions due to MCI moratorium
- Financial constraints, i.e. high remuneration and expenses
- Absence of effective data analytics to present actionable insights to district and state level officials

Hence, to expand the current operations of the initiative, a new project design must be instituted aimed at expanding the coverage of supervision and lowering the financial burden on Govt. of Madhya Pradesh. Moreover, the upgraded project design may also include other programme areas like maternal and child health, apart from focusing on immunization. Similar to the current RISS initiative, it can be a multi-stakeholder initiative with clear responsibilities for each stakeholder. To ensure sustainability of the initiative, the project design should be centered around the state government, to ensure responsibility and accountability.

Table 3: Overall Project Approach

Stakeholders	Key Areas Covered
DHS / NHM, UNICEF, IAPSM (Medical Colleges)	<ul style="list-style-type: none"> - Immunization - Pre Natal-Care / Post Natal Check-up - Pneumonia & Diarrhea management
Key Sites of Monitoring & Supervision	Key Human Resources
<ul style="list-style-type: none"> - Immunization Session - SHC / PHC / CHC including cold chain points - District Hospital - Community Monitoring 	<ul style="list-style-type: none"> - Sector Supervisors positioned at PHC/CHC - A state monitoring & supervision cadre (at block level) to be recruited by the government through a third-party agency - A pool of medical college professors as Master Mentors for monitoring of supervisors - A project management team with project manager, data analytics & visibility officer and project coordinator at state level

The responsibility of each partner is depicted below:

Table 4: Responsibilities of Stakeholders

DHS/NHM	UNICEF	IAPSM	3 rd Party Agency
<ul style="list-style-type: none"> - Identify priority districts and blocks based on indicators - Make supervision practice mandatory for the key areas identified - Create a project management team - Write official letters for issuing respective orders - Chair review meetings and take critical action - Allocate funds for supervisory cadre in PIP and disburse them accordingly 	<ul style="list-style-type: none"> - Technical support on key supervision areas - Support the government through technical advisory and financial support (if applicable) to upgrade the application - Support the programme by training supervisory cadre, partners on supervision mechanisms and data analysis for decision making 	<ul style="list-style-type: none"> - Identify and allocate responsibility to key professors for mentorship - Ensuring commitment and participation from selected mentors 	<ul style="list-style-type: none"> - Recruitment and management of cadre - Liaising with Govt. of MP for financial transactions related to supervision practice

Once the priority districts and blocks are selected, supervisory cadre recruited by 3rd party agency can be given responsibility of managing 1-2 blocks, depending on geography, where the cadre will work under the BPM, to monitor and provide supervision on key areas to the sector supervisors. The supervisory cadre shall be trained and master mentor (medical college professors) to be assigned for a group of supervisors. The master mentor shall visit the respective area based on dedicated plan to provide guidance to the supervisory cadre and conduct supportive supervision in the key areas identified by the supervisory cadre. Data from each visit shall be collected using the application developed by UNICEF, to be collated at state level by the project management team and presented at state review meetings. The monitoring and supervision shall also be presented at monthly district task force meeting by the block level supervisory cadre. Hence, majority of monitoring & supervision visits will be conducted by trained sector supervisors who in turn will be monitored by block level supervisory cadres who will conduct second level monitoring supervision. These supervision visits will highlight the need of training and support at various levels / sites, which can be dealt for by the senior government officials at each block / district or the master mentors during their visits.

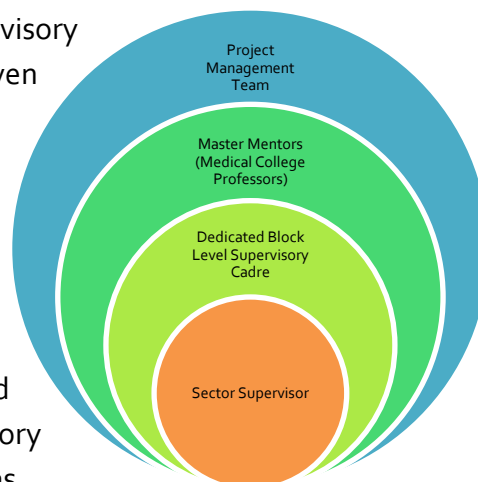


Figure 14: Hierarchy for managing supervision practice

Moreover, critical datasets collected from these visits can be compiled at the state level for real-time (or near real-time) visibility.

Table 5: Key indicators for actionable insights

Immunization	Pneumonia / Diarrhea	ANC/PNC
<ul style="list-style-type: none"> - Vaccines not available at session site - Performance of AVD - Session held / not held - Availability of microplan / updated due list - Availability of IEC material - Availability of MCP counterfoil - Interpersonal communication (4-key messages) - Number of children found to be unvaccinated during community monitoring 	<ul style="list-style-type: none"> - Number of children in IPD for diarrhea - Number of children in IPD for pneumonia - Number of children given antibiotic for diarrhea - Availability of ORS/Zinc corner - Availability of medicines in IPD related to pneumonia / diarrhea management 	<ul style="list-style-type: none"> - Number of women registered - Number of institutional deliveries - Women with full ANC check up

7. Challenges and Lessons Learned

7.1. Challenges in the Process

While the RISS initiative was a novel idea for Madhya Pradesh to monitor routine immunization through a multi-stakeholder collaboration. However, in close to six years of operations, the project faced several challenges resulting in slow progress than what was initially envisaged.

- a. **Insufficient human resources for the management of the project:** Throughout the project duration, RISS initiative lacked two key officials; one for data compilation and analysis with regular reporting for visibility, and other as a liaison officer with Government of Madhya Pradesh (State RI Cell, NHM and DHS). Hence, these roles were being managed by nodal officer of the project and UNICEF staff and consultants. This resulted in delays in data analysis and presentation to the state officials and with task shifting of the nodal officer, management of regular operations of the project sometimes took a backseat.
- b. **Data analysis and visibility:** Once the mobile application for data collection was developed, tons of data started to be generated from monitoring and supervision of routine immunization sessions. However, visibility of regular (or near real time) actionable data was not available for senior state and district level government officials. Moreover, data entered by any supervisor for a session was not visible to the supervisor if needed for a follow up visit to the same session. This was highlighted as one of the major concerns by all supervisors using the application.
- c. **Presentation of findings:** As per Government of India's directive, regular review meetings for routine immunization are organized at block, district and state level, where key findings and observations in RI are discussed and appropriate actions are taken. As per the initial RISS project design, actionable data was supposed to be shared during district and state level task force meetings, for district and state officials to understand the findings of the supervision visits. However, there were a very few occurrences of participation of RISS officials and presentation of supervision data in those meetings. Moreover, quarterly joint review meetings, which were also part of project design, could not always be organized because of unavailability of all stakeholders and other operational issues. Although, findings from the visits were shared with District Immunization Officer, Block Medical Officer and sometimes the Chief Medical & Health Officer, but these officials were not always available during the visit by the supervisor. This resulted in some findings not reaching the task force meetings and going unnoticed and appropriate actions not being taken to address the deficiencies.

- d. **Lesser number of supervision visits than planned:** The actual number of supervision visits conducted by RISS supervisors were always lesser than what would have been planned at the beginning of the cycle. The prime reason for this was the MCI moratorium imposed on the medical colleges during annual inspection, during which no professor could leave the premise for any other work. This moratorium sometimes would last for more than 3 months at once resulting in no supervision visits by RISS supervisors. This resulted in consistent change of plans and lower coverage of blocks than planned.

7.2. Challenges for the Future

- a. **Impact of COVID-19:** The data collection for the case study was conducted in February and March 2020, just before the world was hit by the COVID-19 crisis. At the time of writing of the case, India and the state of Madhya Pradesh are seeing complete lockdown and self-isolation. This will impact the regular operations of routine immunization and the RISS initiative, whereby supervisors would not be able to visit their respective districts to monitor and supervise frontline health workers. Once the lockdown on services are lifted, there will be a possible impact on RISS initiative, and the project team may have to plug in some training for the supervisors on following social distancing while on supervision visits. However, the project team will have to wait and watch until there is more clarity on the status of the pandemic in the state and the country and guidelines are issued by relevant authorities on ways of working either using digital means or safe physical practices.
- b. **Designing an integrated approach to the initiative:** The primary focus of RISS initiative was immunization where the key counterpart was the state EPI officer from MP state government. The additional component in pneumonia and diarrhea management supervision was not very successful because of weak collaboration with the child health department in the government. Going forward, it will still pose a challenge for the project team to coordinate with different offices at the state level since policy level decisions are taken at the state level.
- c. **Getting the supportive part right during supervision:** Although all the ANM and ASHA interviewed supported the supervision practice during routine immunization, they were also wary of the fact that many times a monitoring & supervision visit is far from supportive. It will be a challenge for the project team to train sector and block level supervisors to be supportive during their monitoring and supervision visits and will require strict guidelines and effective training.

7.3. Lessons Learned

The key learning points from Madhya Pradesh's experience in supportive supervision in routine immunization are categorized in four categories program approach, human resources, accountability and enabling environment.

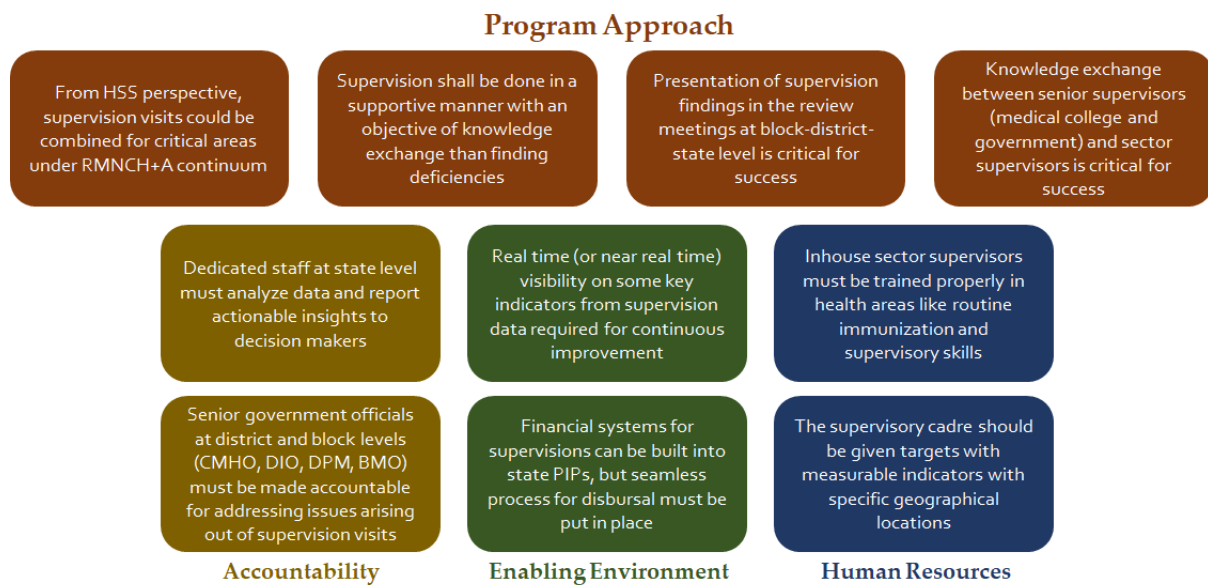


Figure 15: Lessons Learned from Madhya Pradesh RISS Initiative

8. Recommendations

Supportive supervision has become a key activity in routine immunization which has been rated highly by all officials across the state. However, a systematic supervision approach has not been instituted by the state which can effectively support the immunization programme through continuous guidance provided to frontline health workers and gather actionable data to strengthen the health systems at large. Moreover, an integrated approach can be taken whereby supervision can impact other health programmes including immunization. The following recommendations have been drafted to improve the function of supportive supervision in the state of Madhya Pradesh.

Table 6: Key recommendations for systematic supportive supervision

Approach	Accountability	Resources	Sustainability
The goal of supportive supervision project should be linked with health programme outcomes (using a theory of change approach)	Make senior district level officials like CMHO, DPM and DIO accountable for action based on findings from the monitoring & supervision visits	A dedicated block level cadre for supervision shall be recruited either directly by the government or through a third-party agency	The state government should effectively use trained local resources present with medical colleges
Implement relevant supportive supervision strategies with an appropriate supervisor-supervisee relationship allowing meaningful and regular support structure and mentoring	A clear responsibility matrix should be provided to the sector supervisors	Training of sector supervisors on effective supervision, mentoring, observation of service delivery and feedback, should be made mandatory for improving quality of supervision	Partnerships are crucial for advisory and knowledge exchange
Health system strengthening complementarities should be identified in other health programmes while focusing on immunization	All internal supervisors and senior government officials should be mandated to use the pertinent applications to record and report data from supervision visits	A dedicated project management team shall be constituted to manage the operations and reporting of information at relevant levels	Use data from supervision visits to plan performance improvement training for health workers for sustained results
A continuous project review mechanism should be instituted to determine results and review direction	A report card should be issued to ANMs, CCHs and other cadres based on the results of supervision visits to enhance motivation and accountability	The current application for supervision should be enhanced to include data analytics capability	Financial systems shall be built within state PIPs and effective mode of disbursement shall be identified

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