



■ electronic Vaccine Intelligence Network (eVIN)

ITSU's Pilot Project in Bareilly & Shahjahanpur District, Uttar Pradesh

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Team Lead

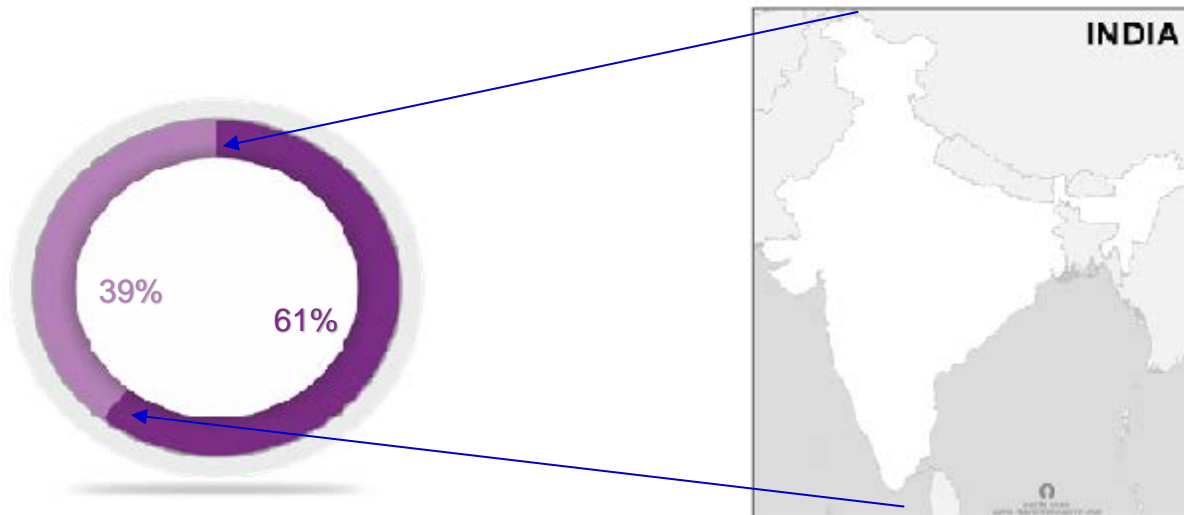
Vaccine Logistics & Cold Chain Management

Immunisation Technical Support Unit (ITSU)

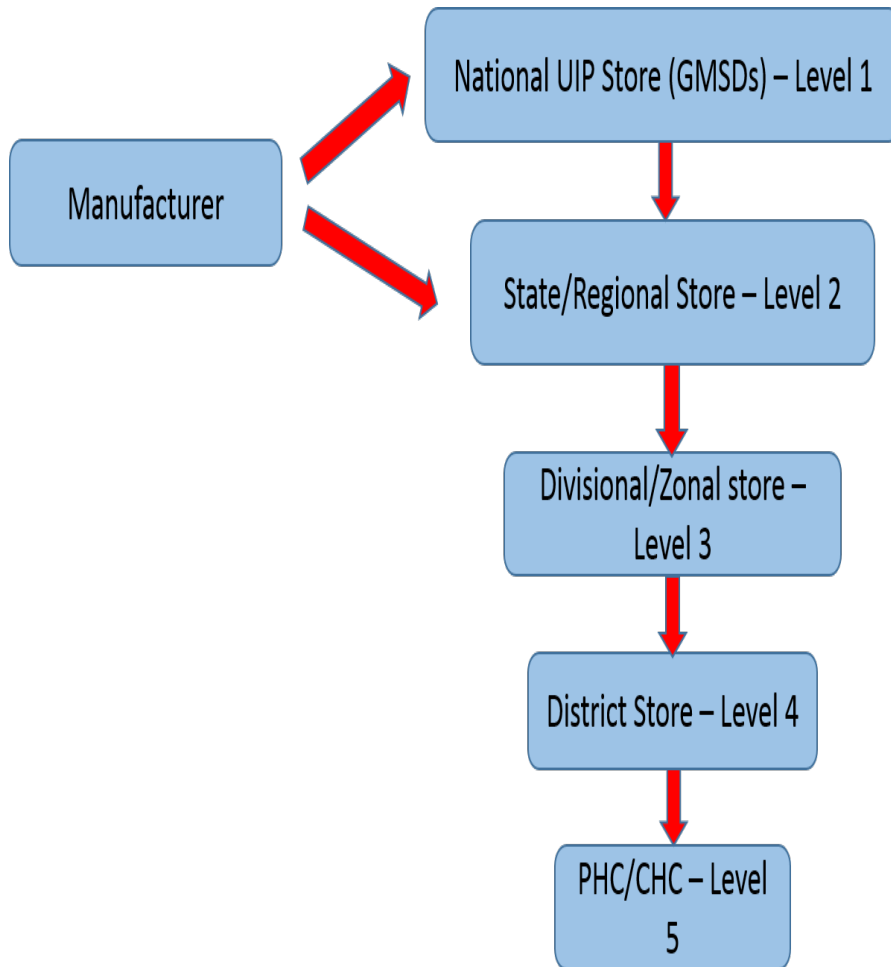
MoHFW, GoI & PHFI

BACKGROUND

- India conducts one of the largest Universal Immunization Programs (UIP) in the world
- Targets ~26 million newborns and ~30 million pregnant women each year translating into >300 million doses of vaccines each year
- There are ~27,000 cold chain points in the country; ~750 (3%) located at district and above while remaining 95% below the district level (PHC, CHC, Urban Health Facility, Sub-centers)



Current Vaccine Logistics System in the Country



Distribution of vaccines from upper nodes to the lower nodes are supplied based on any of the following:

- Monthly targets
- Stock outs
- Low stocks
- Large quantity of stocks received
- Proximity to State/District store
- Low supply from Manufacturer
- Stocks of other vaccines

Current scenario of vaccine logistic in the country

- The current vaccine logistic system in the country is highly variable from district to district
- One of the major reasons for adhoc management at various levels of supply chain is the limited visibility of stocks at each node – ‘A coal mine effect’
- ITSU conducted a ‘Deep Dive Study’ to understand the end-to-end issues with vaccines (with diluents and syringes) supply chain and root causes for the stock-outs



Deep Dive Assessment

Stock & Data Visibility

- Lack of real time stock visibility across all levels
- No record of returned vaccines
- Improper stock register maintenance

Erratic, Irrational Distribution Practices

- Stock Levels are not maintained at recommended levels
- Vaccines not passed down to subordinate stores on any clear basis
- Sub-optimal Vaccine requisition (bunching)
- Cross supply of vaccines without intimation to superior store
- PHC's retain vaccines on session days to maintain stocks when undersupplied

Identified major root cases:

- Lack of stock visibility
- Lack of Human Resource management
- Poor record keeping of stock and sharing across levels

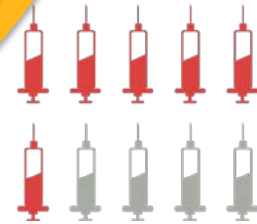
Q 1

Where are
my Vaccines?



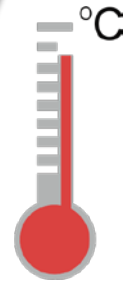
Q 2

Are they adequate
In quantities ?



Q 3

Are they stored under recommended temperatures ?



ITSU DESIGNED THE eVIN PROJECT TO ANSWER
THESE FUNDAMENTAL QUESTIONS



PEOPLE

+



PROCESSES

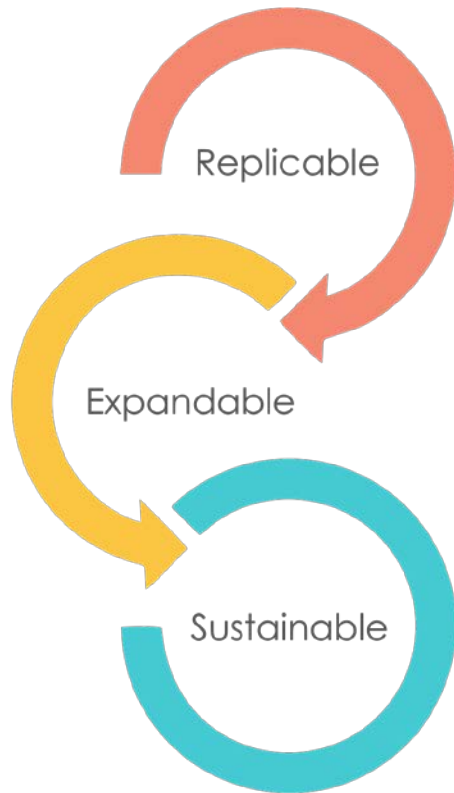
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PRODUCT

GUIDING PRINCIPLES OF THE PROJECT

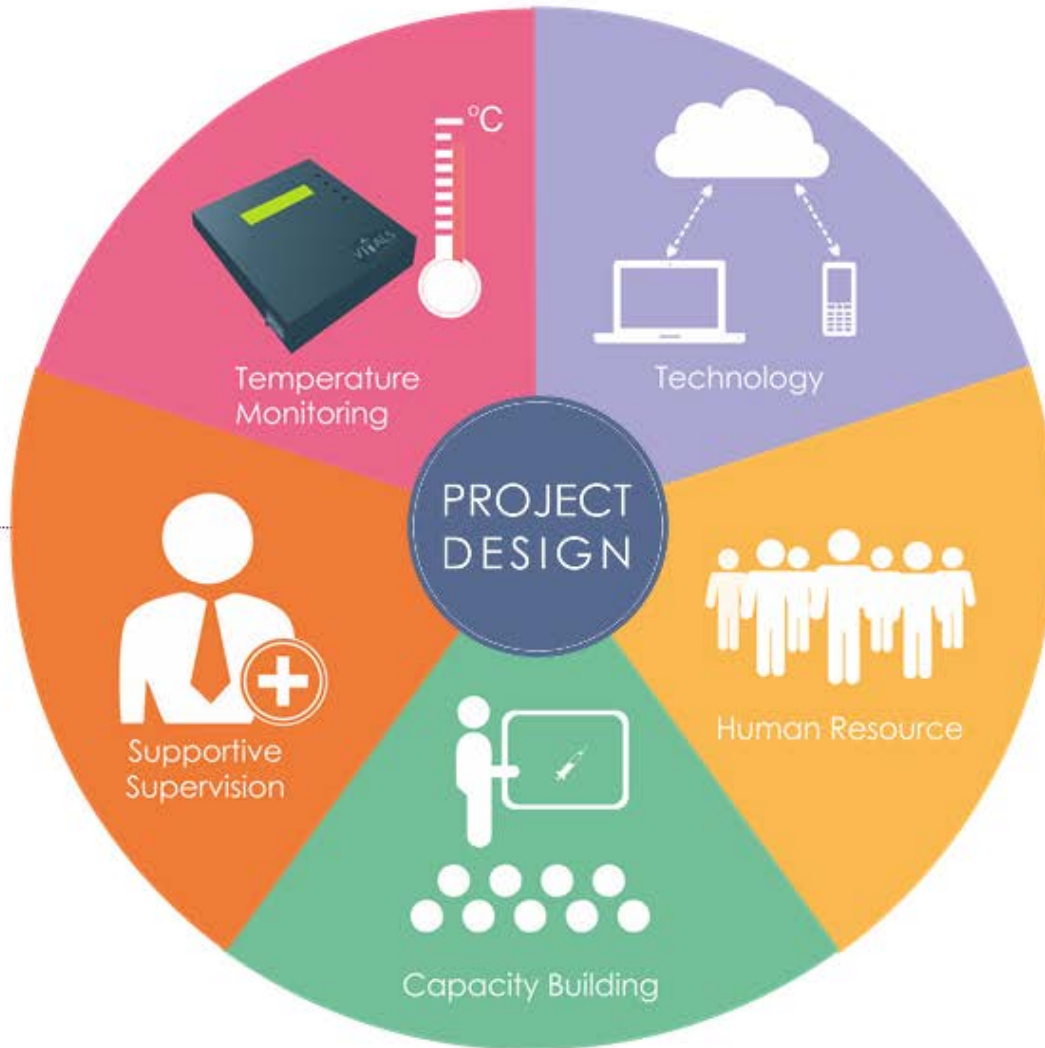
The model should be



The model will:

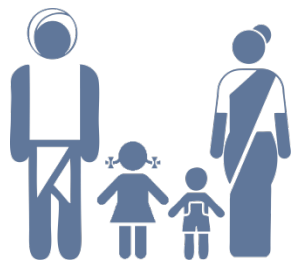
- Not disrupt the existing system of manual documentation but will support the system with better and uniform registers and format.
- Will support the system by capacity building rather than taking away the duties and responsibilities
- Will have highly simplified input methodology and output results
- Will develop the system to be used by personnel having 10+ education status and very little IT skills

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Based on Built-Operate-Transfer (BOT)



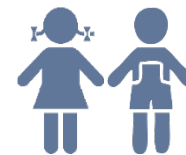
DISTRICTS PROFILE

Bareilly & Shahjahanpur



7.4 million

Total Population



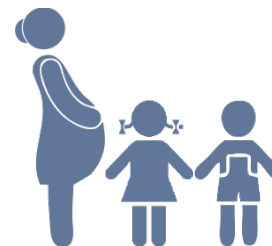
0.2 million

Estimated children
Below 1 year age



0.24 million

Estimated Pregnant
Mothers in 1 year



1.1 million

Total number of children &
Pregnant mothers targeted for
Immunization in 1 year

SITUATION ANALYSIS



01 HUMAN CHALLENGES

No system to appoint or designate the role of Cold Chain Handler (CCH). Purely ad-hoc (ward boy, x-ray technician)

Inadequate capacity of staff (52% 10+2 education, 67% > 46years old)

A majority of CCH were never trained in handling a cold chain

Lack of adequate supervisory capacity at district level



02 RECORDING & REPORTING

No standardized documentation procedure

Open vial implementation and documentation as per convenience

No review mechanism for vaccine/syringe consumption

Syringe pushed down without any rational or accountability



03 SUPPLY CHAIN CHALLENGES

Erratic supply of vaccines (or related materials such as syringes or droppers)

Ad hoc pick-ups (quantity or timing) by cold-chain handlers

Ad hoc returns of closed and open vials by ANMs to cold-chain points

Non-functional Vaccine Van



04 INFRASTRUCTURE CHALLENGES

Erratic power supply

Limited Internet bandwidth



Cold-chain
handlers are very
well intentioned and
keen to learn and
do better

	BCG	Pat.	DPT	Measles	Polio	TT	JE	Hep
B/F. Parage No 10	1570	760	300	2120				
21-8-12 2000	190	90	270	190				
21-8-12 2000	380	670	30	190				
21-8-12 2000	250	500						
From D.F.O. 21-8-12 Vouch No 390	500	1380	820	500	1940			
21-8-12 2000	210	180	90	170	170			
22-8-12 2000	290	1200	730	260	1770			
23-8-12 2000	200	170	100	160	1180			
23-8-12 2000	90	1030	630	200	1590			
From D.F.O. 24-8-12 Vouch. No 407	1000	2000	4000	1000	2000	500	1000	
25-8-12 2000	1000	2000	5000	1000	2200	500	2500	
27-8-12 2000	160	360	220	105	310	90	140	
27-8-12 2000	90	1700	480	1525	1850	420	2450	
27-8-12 2000	150	260	250	110	280	85	130	
28-8-12 2000	780	1400	4610	1415	1670	335	2320	
28-8-12 2000	140	280	250	95	220	90	140	
29-8-12 2000	640	1160	4400	320	1290	235	2180	
29-8-12 2000	150	900	240	110	310	80	150	
30-8-12 2000	480	860	4160	1210	980	55	2030	
30-8-12 2000	160	280	220	120	300	85	160	
31-8-12 2000	330	580	3440	1090	680	70	1870	
31-8-12 2000	150	300	230	105	290	50	180	
1-9-12 2000	180	280	370	985	390	20	170	
1-9-12 2000	150	280	210	140	290	20	130	
1-9-12 2000	30	350	875	100			600	
From D.F.O. 4-9-12 Vouch (428)	200	300		500	100			
5-9-12 2000	230	300	350	875	600	100	1600	
5-9-12 2000	70	150	350	100	180	60	100	
5-9-12 2000	110	150	340	875	420	40	1500	

	BCG	Pat.	DPT	Measles	Polio	TT	JE	Hep
15-9-12 2000	160	150	215	675	420	40	1500	
15-9-12 2000	70	150	330	100	190	40	100	
15-9-12 2000	90		282	675	230		1000	
15-9-12 2000	80		300	100	190		100	
15-9-12 2000	10		290	575	40		1300	
From D.F.O. 18-9-12 Vouch (433)	100				1000			
19-9-12 2000	110		250	575	1040		1300	
19-9-12 2000	60		280	110	200		200	
19-9-12 2000	50		240	465	840		1080	
19-9-12 2000	50		300	100	200		210	
19-9-12 2000			1940	365	640		870	
From D.F.O. 21-9-12 (RI Mark)	500	1500	1500	750	750	500	1000	
22-9-12 2000	500	1500	3440	1115	1390	500	1870	
22-9-12 2000	10	20	240	120	240		200	
22-9-12 2000	40	110	220	905	1150	500	1650	
24-9-12 2000	220	360	250	170	290	110	200	
24-9-12 2000	270	1120	250	885	920		1450	
25-9-12 2000	200	380	240	120	240	110	210	
25-9-12 2000	70	740	2710	785	680	680	1240	
From D.F.O. 25-9-12 Vouch (463)	250				500	250		
26-9-12 2000	220	740	2710	785	1180	530	140	
26-9-12 2000	200	360	160	100	280	100	180	
26-9-12 2000	120	380	250	685	900	430	160	
From D.F.O. 26-9-12 Vouch (460)	200				500		500	
27-9-12 2000	320	280	250	1400	430	1560		
27-9-12 2000	170	340	160	95	260	110	160	
27-9-12 2000	150	400	230	590	1140	320	1400	
From D.F.O. 27-9-12 Vouch (473)	250					150		
27-9-12 2000	400	40	230	685	1100	470	1000	

APPROPRIATE TECHNOLOGY SELECTION



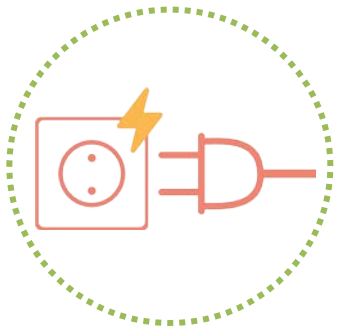
Availability of
'Functional'
Computer



Internet
Access



Availability of
Data Entry
Operator



Electricity
Supply



Interpersonal relations
between CCH & DEO



Reduce
dependency
point for
data entry

APPROPRIATE TECHNOLOGY SELECTION

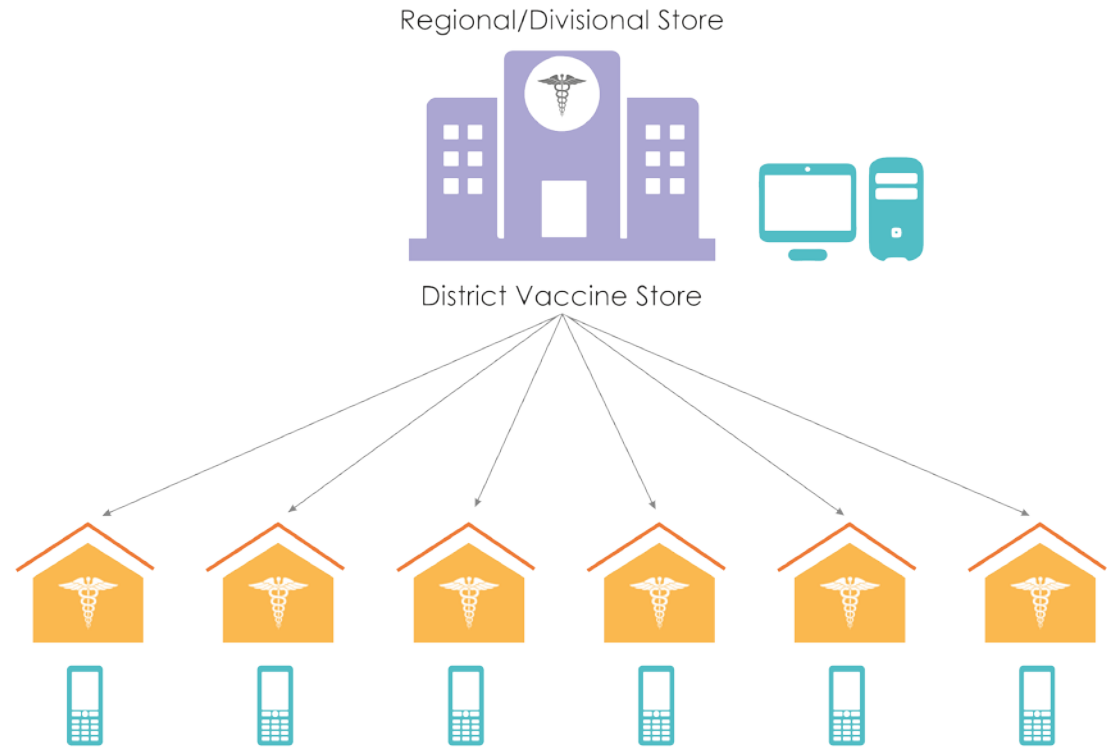




HOW DOES IT WORK?

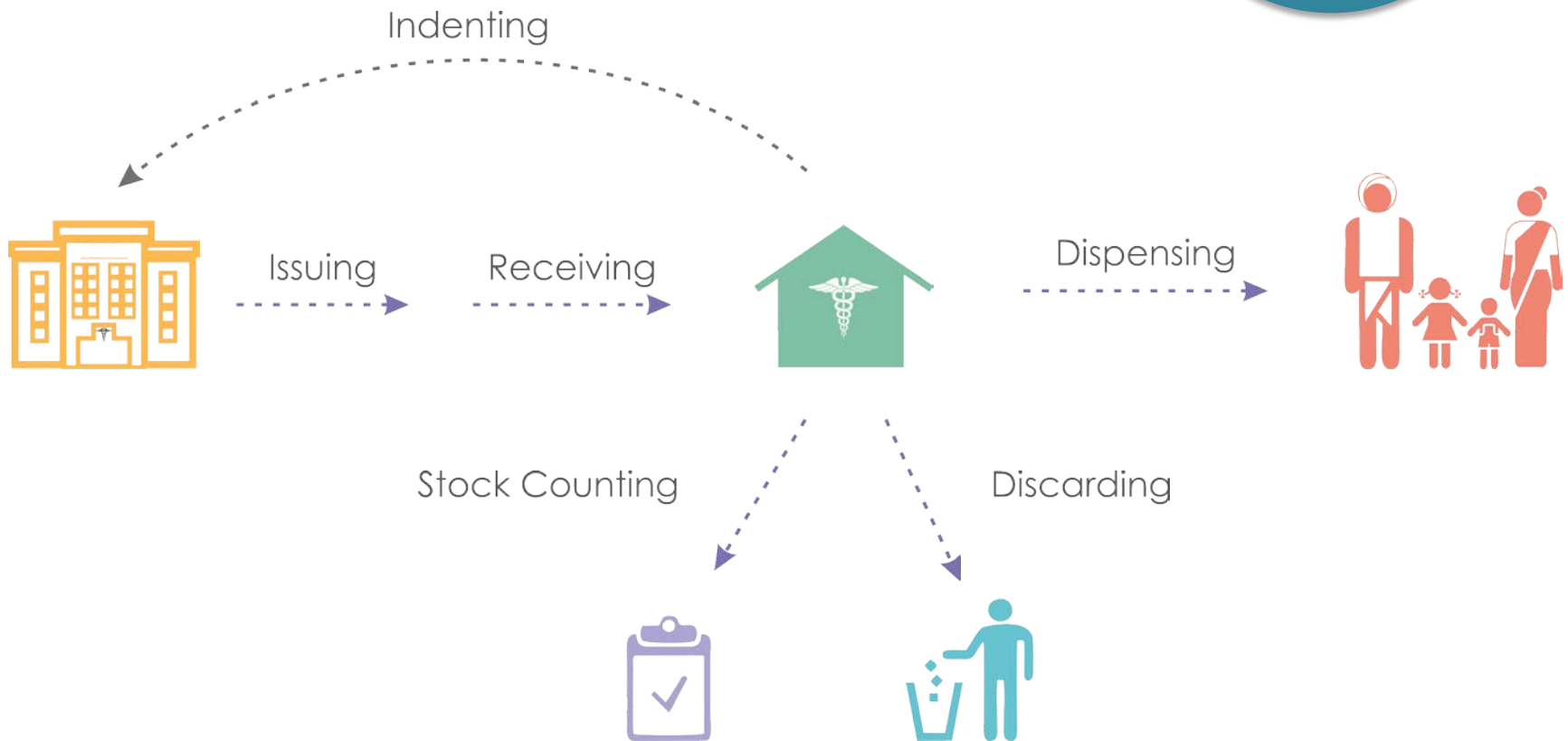
District Officials can:

- View real time stock & temp
- Vaccine requirement
- Emergency mangament
- Consumption patterns
- Route planning
- Stock reallocation



At the end of each session day, CCH enters total vaccine consumed in mobile application

HOW DOES IT WORK



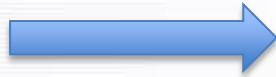


SIMPLIFIED &
CLEARLY
DEFINED
PROCESSES

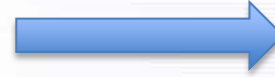
मोबाइल को अनलॉक कीजिय (अगर आपका मोबाइल लॉक है तो)



पहले मोबाइल का बीच वाला बटन दबाए



फिर स्टार(*) दबाए



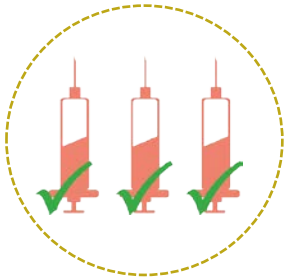
आपका फोन अनलॉक हो गया है

INTENSIVE TRAINING



EXPECTED OUTCOMES

IMPROVED STOCK AVAILABILITY



through better visibility and standardized procedures

REAL TIME DATA VISIBILITY



at all cold chain points along with real time temperature monitoring

TOOLS AND REPORTS



reports to facilitate decision making in vaccine logistics management

STRENGTHENED HEALTH SYSTEM



through Human Resource, Capacity Building and Leveraging technology

REPLICABLE MODEL

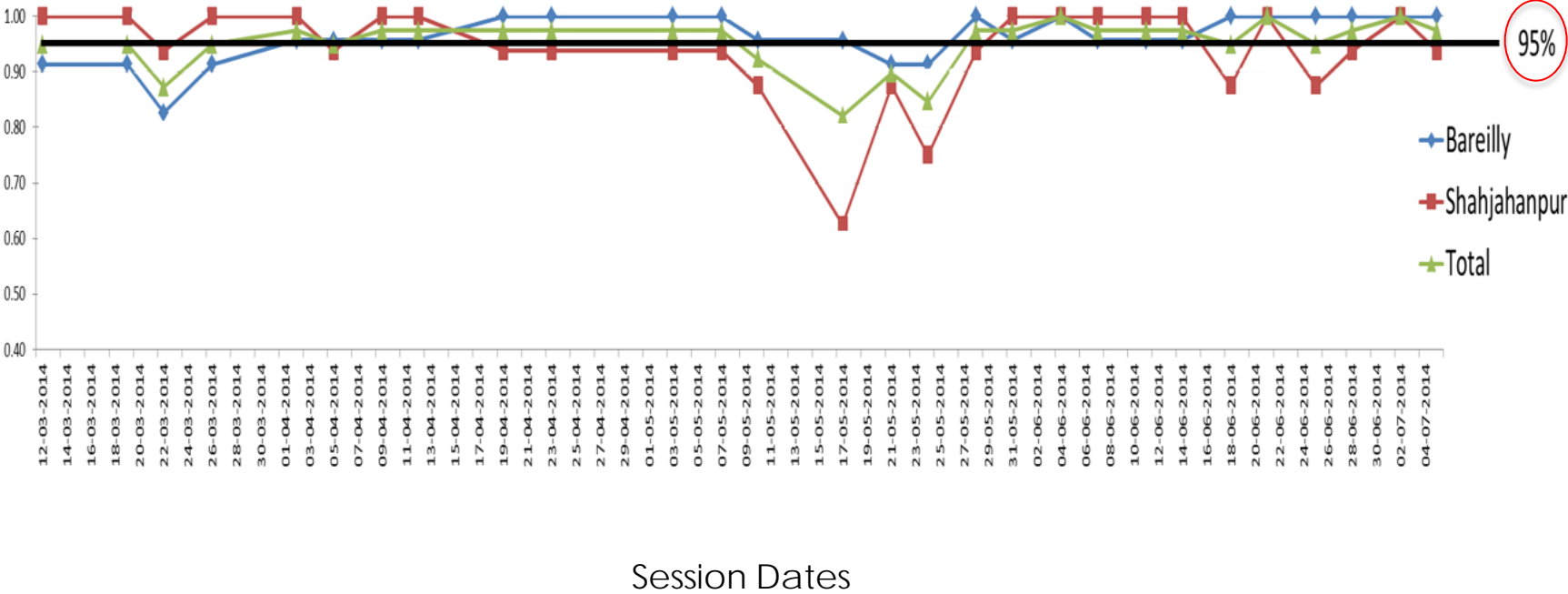


for state/Nation-wide scale up

REPORTING RATES

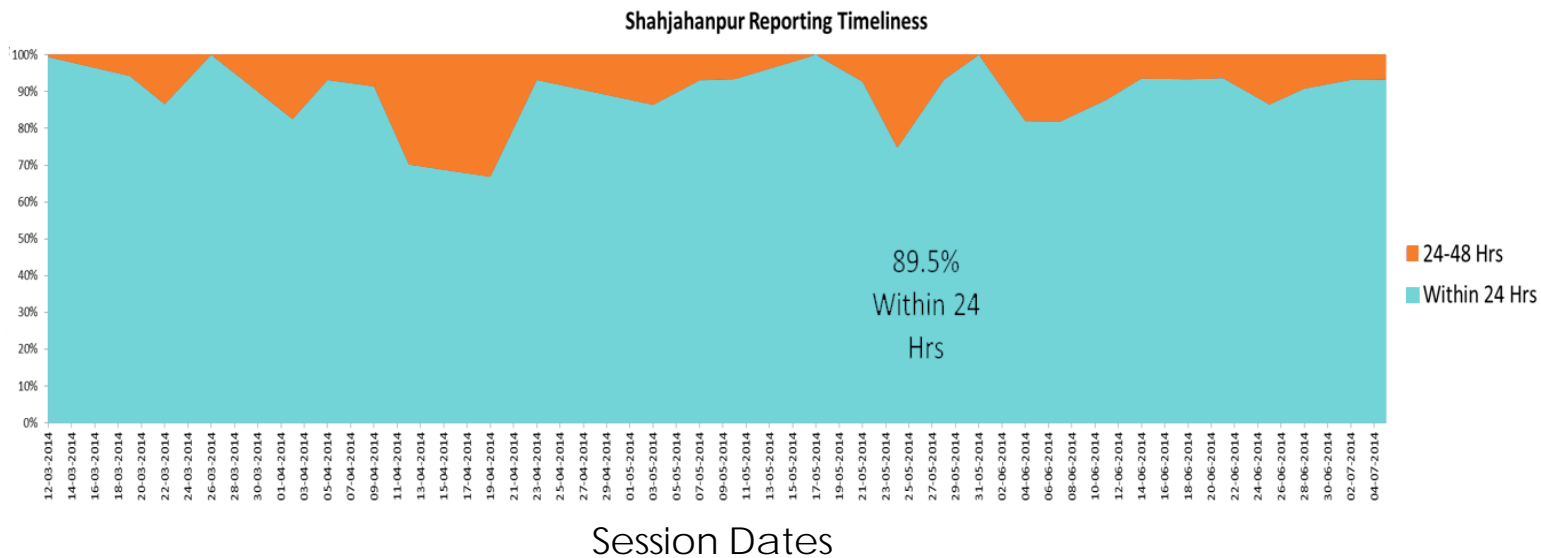
The reporting rates for both the districts – Bareilly and Shahjahanpur are seen **consistently between 80% - 90%**

LogiWeb Access Rate - Session Days



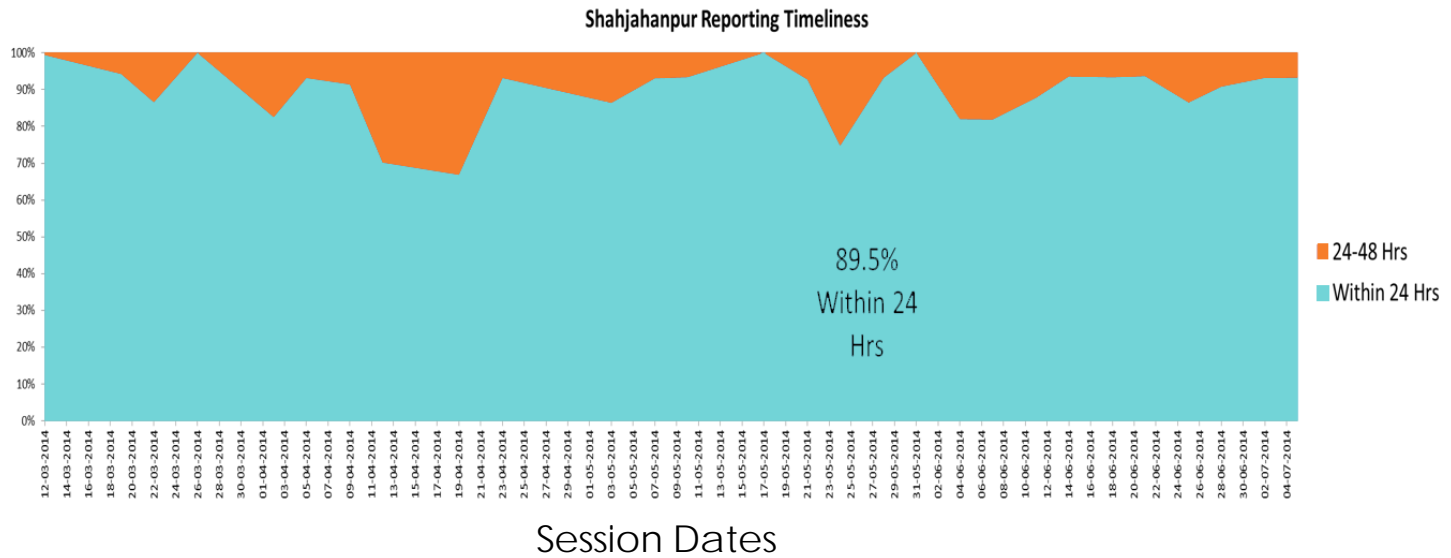
TIMELINESS RATE

Is the data reported **on time**?



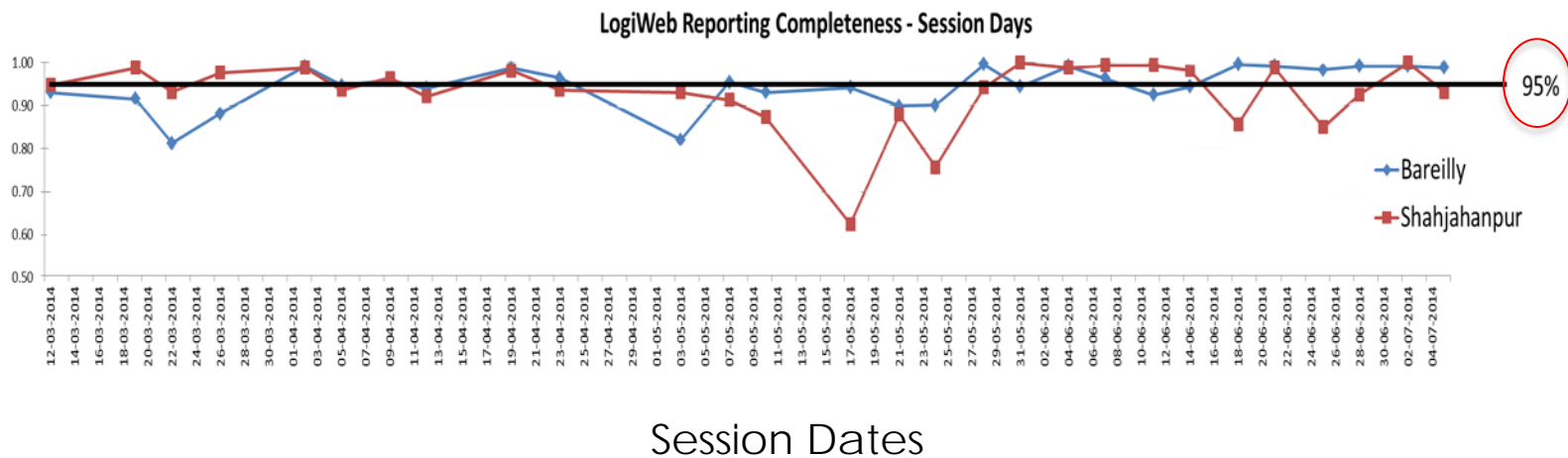
TIMELINESS RATE

Is the data reported **on time**?



COMPLETENESS RATE

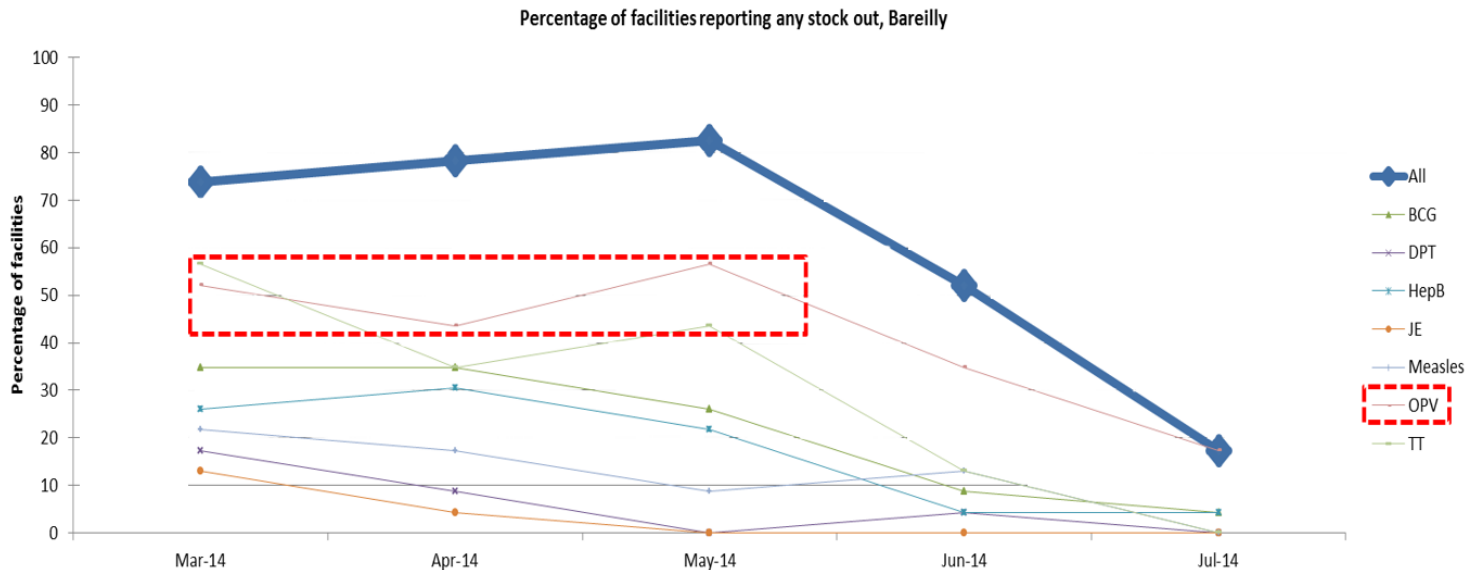
Is the data reported **complete**?



Both the districts have consistently reported **above 80%** of complete data in reporting the utilisation/ net consumption of all the vaccines, diluents and droppers

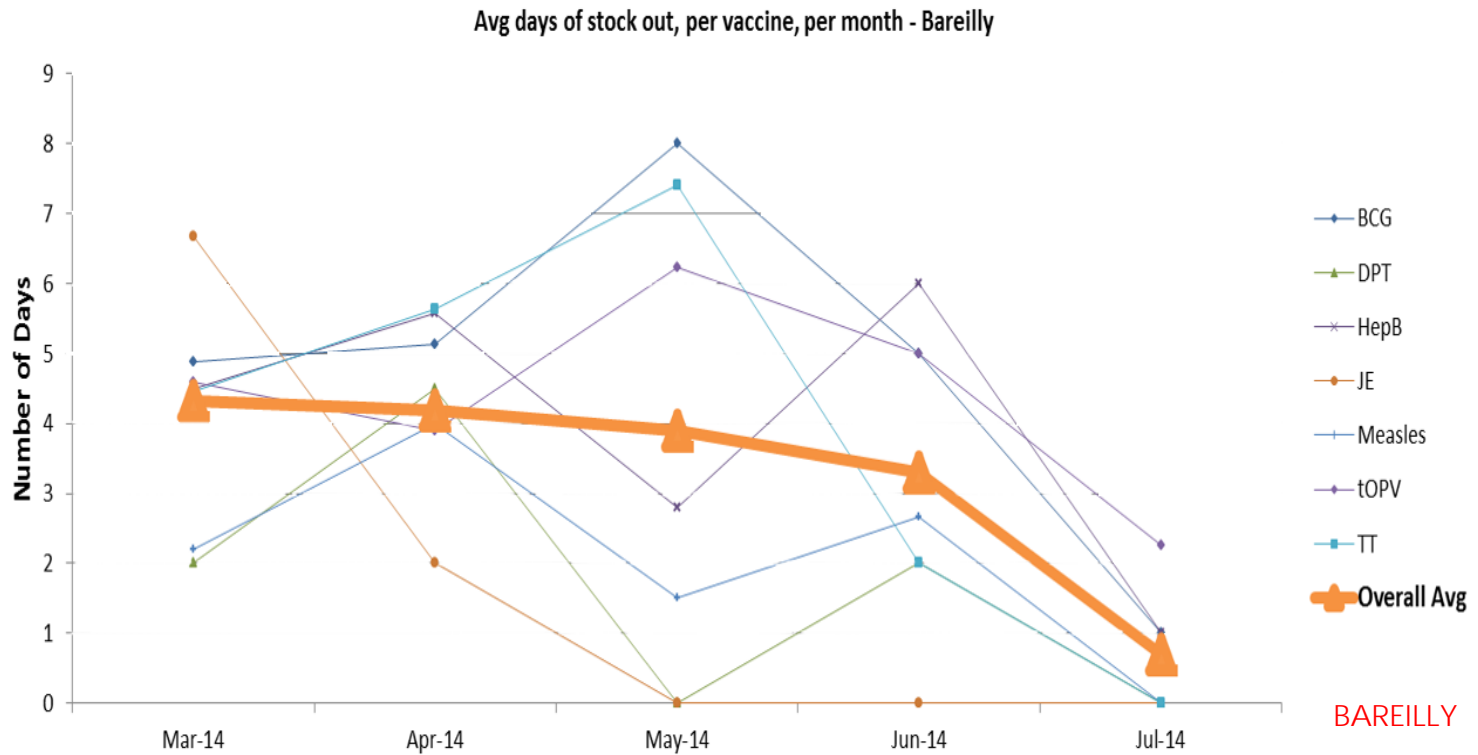
STOCK-OUT REPORTING RATES

BAREILLY: 70-80% of cold chain points reported stock out in initial months which has now dropped significantly.



NO. OF DAYS OF STOCK-OUTS

The average number of days reporting stock outs per month has steadily reduced from 4 days to 1 day since the launch of eVIN



Lessons Learnt

User-friendly technology, when married to human resources – with a defined supportive supervision plan and standardized procedures results in high adoption rates and high data quality, as evidenced by the eVIN pilot.

Next Steps

- The concept of eVIN model has been adopted by the Ministry of Health, Government of India for the UIP.
- eVIN model is being deployed in 3 major Indian states with a combined population of 345 million under Gavi-Health System Strengthening grant
- The eVIN pilot will continue to explore and add other dimensions of vaccine and cold chain management



Immunization Technical Support Unit
Ministry of Health and Family Welfare