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# India's experience with Immunization Supply Chain Strengthening

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# India's Immunization Program (Scope and scale)



- ❑ One of the largest public health programs in the world
- ❑ Targets 30 million pregnant women; 26.7 million newborns annually with 9 million sessions planned
- ❑ >27000 cold chain points for storing and distributing vaccines
- ❑ 12 Antigens (8 National and 4 Sub-National) BCG, DPT, OPV, IPV, Measles, Hepatitis B, Tetanus, Hib containing Pentavalent vaccine (DPT+HepB+Hib) provided nationwide; Measles-Rubella vaccine, Pneumococcal Conjugate Vaccine, Rotavirus vaccine & JE vaccine in select states/ districts
- ❑ India is the largest manufacturer of vaccines with a functional National Regulatory Authority.





# Major Programme Milestones

**Challenges of Supply Chain:**

- 1) Introduction of New Vaccines --**  
Increase in consumer inventory & require more cold chain space..
- 2) Switching from one vaccine to another --**  
Phase in: Phase out challenges
- 3) Global Shortage - -**  
Needs effective management for optimum utilization eg. Global shortage of IPV



2011

Last wild polio virus reported from India;  
Penta introduced

2013

Open vial policy;  
JE 2<sup>nd</sup> dose intro

2014

India certified polio-free

2015

- MNTe validated
- IPV intro
- Mission Indradhanush

2016

RVV introduction

2017

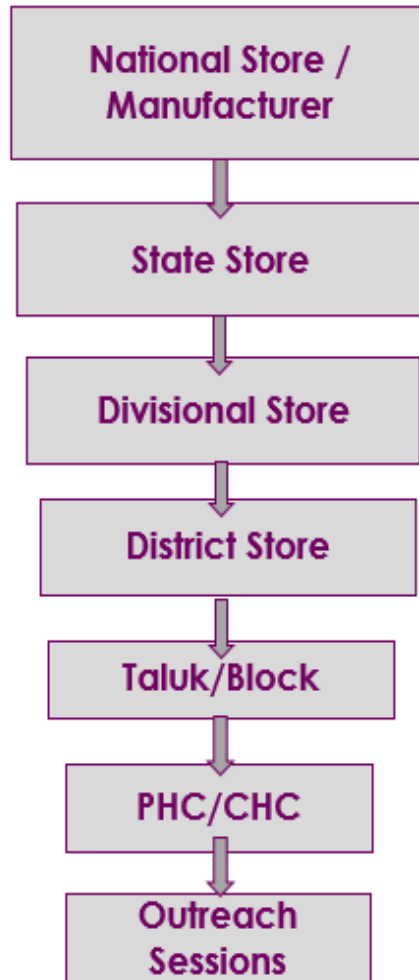
MR campaign

# Seven-level Vaccine Supply Chain



27,000 CCPs

80,000 CCEs



Every week around 0.2 million immunization sessions are held which translates to more than 10 million immunization sessions annually.

# Universal Immunization Programme (Quantum of Vaccines)



INDIA IS A SELF PROCUREMENT COUNTRY FOR VACCINE LOGISTICS, COLD CHAIN EQUIPMENT etc.

S.No	Routine Immunization Vaccine	Quantity (in million doses)	S.no.	Routine Immunization Vaccine	Quantity (in million doses)
1	Hep-B	16	7	DPT	22
2	TT	72	8	BCG	25
3	b-OPV*	165	9	Measles	25
4	IPV	55	10	MR^	85
5	RVV	22	11	JE^	35
6	Pentavalent	65	12	PCV	09

*In addition 650 million doses are procured for Polio NID*

# Universal Immunization Programme

## Ensuring regular supplies



- Large Cohort – Large Requirement
- Projections are done for 2 years of cycle
- Lead time of 1 years is taken into account while planning vaccine supplies.

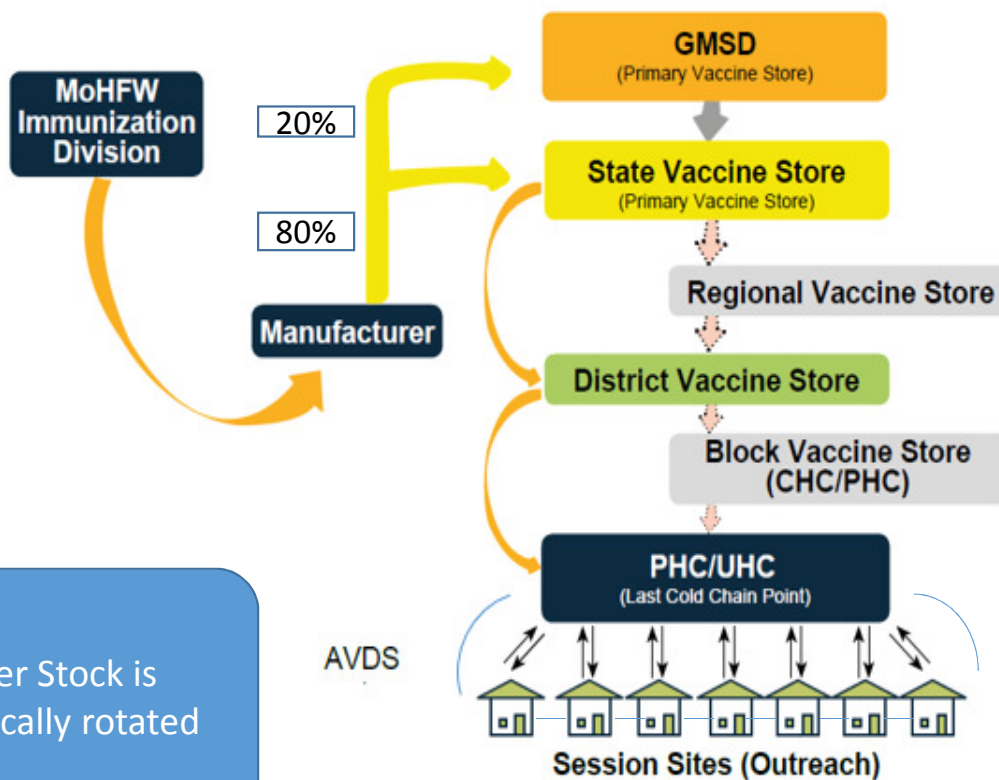
Procurement orders are placed accordingly

Adequate Buffer is kept at the National level





# Immunization Supply Chain in India



Buffer Stock is periodically rotated

- ← Buffer Stockist, Supply directly to states with Accessibility issues. Act as **Shock Absorber**
- ← Supply Vaccines to respective lower echelons
- ← Last point of storage, supply vaccines for last mile consumption.
- ← No Storage, vaccines to be returned to PHC/UHC after session

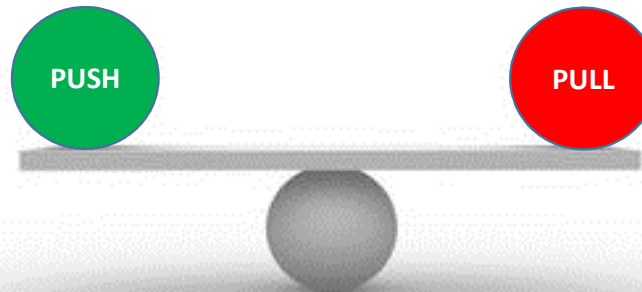
# Vaccine supply mechanism in India



Stock Driven supply

Vaccine push  
bimonthly to State  
stores by  
manufacturers and  
GMSDs

Supply timeline  
shared in advance



Vaccine pulled by  
receptient stores  
as additional  
demands and  
supplied from  
national buffer at  
GMSD

Supply chain equilibrium maintained through push pull  
Stock oscillates between 1-3 month



# Challenges in Immunisation Supply Chain Management



- Uninterrupted Supply of Vaccines & Logistics
- Events to Absorb Shock when there is low yield and Batch Failure
- Short Shelf life of vaccines compared to other drugs
- Requires Cold Chain throughout the Supply Chain & Storage.
- Equitable distribution based on Consumption

Hence, **Real time visibility at all levels in efficient manner is important.**

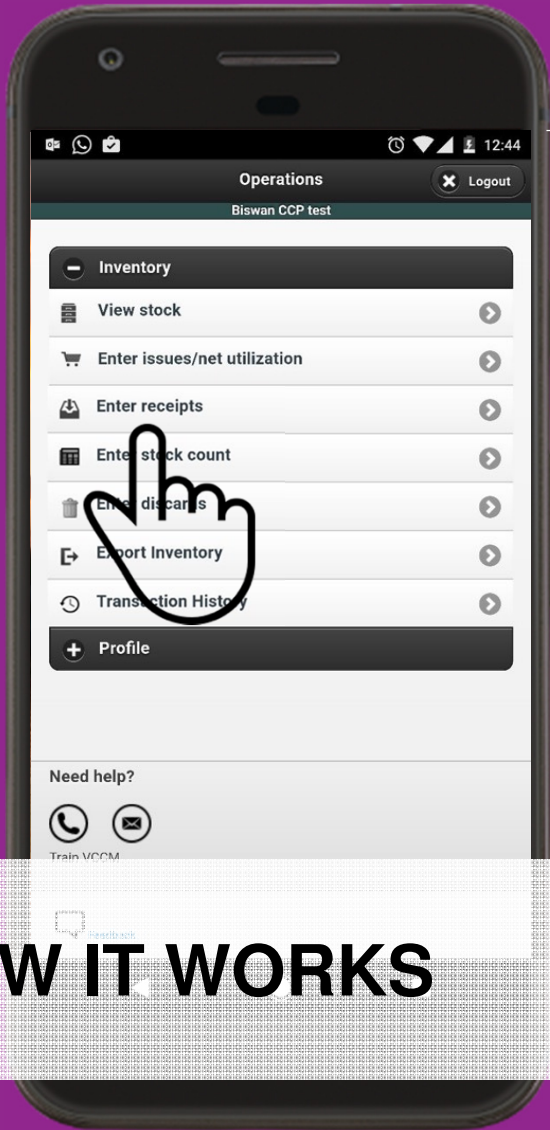


# eVIN (Electronic Vaccine Intelligence Network)

In 2014, Pilot took place in Bareilly and Shajahanpur to digitalize vaccine and logistics stock.

As of now, **12 states, 371 districts** and around **11,000 Cold-Chain points** along with **14,000 Temperature Loggers** installed in India. With a plan of Nation-wide scale up.

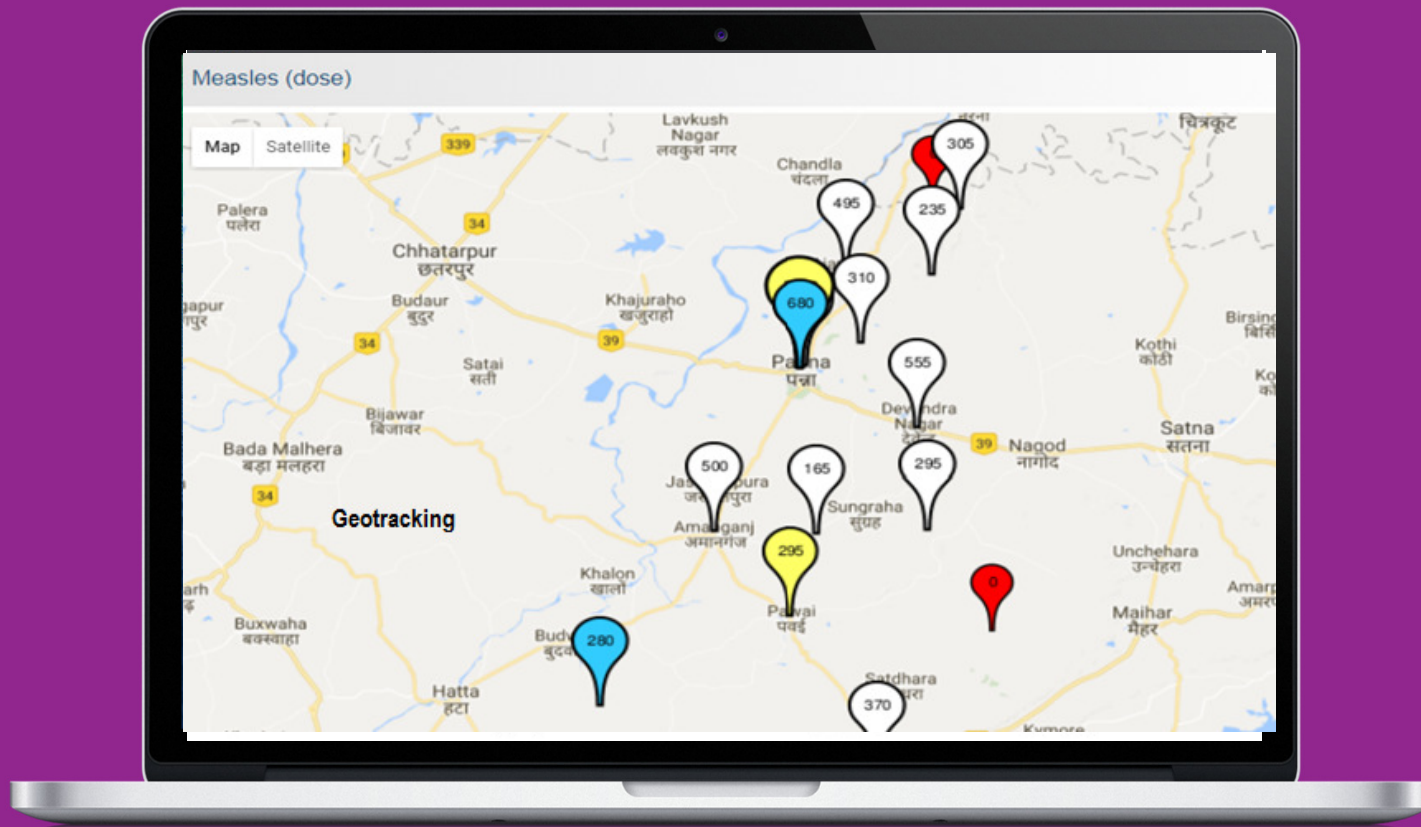




# HOW IT WORKS



# Real-time Visibility of Vaccine Data



# USAGE & TRANSFORMATION

People, Information & Procedures



Transformation





# Weekly timely Reporting Rate (of Cold Chain Point) > 95%

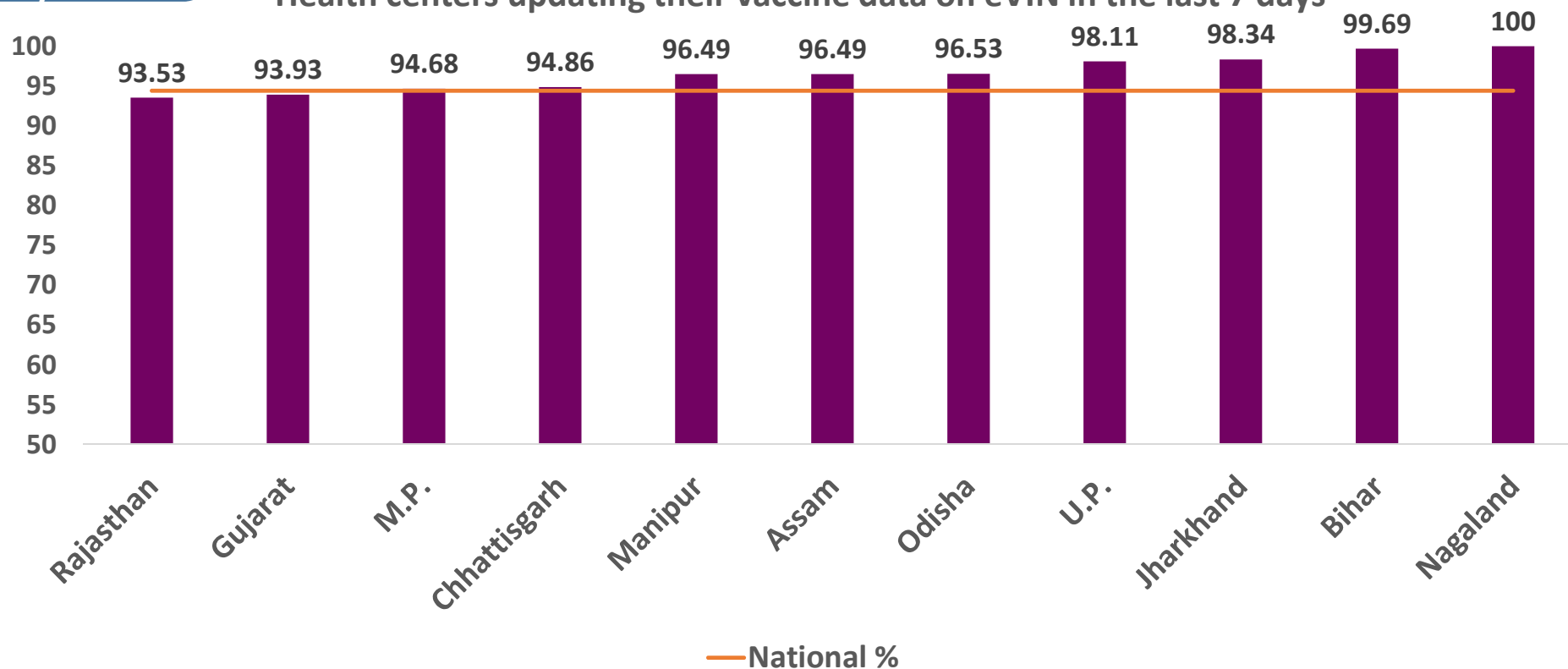


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Empowerment Runs.  
Resilient Nations.

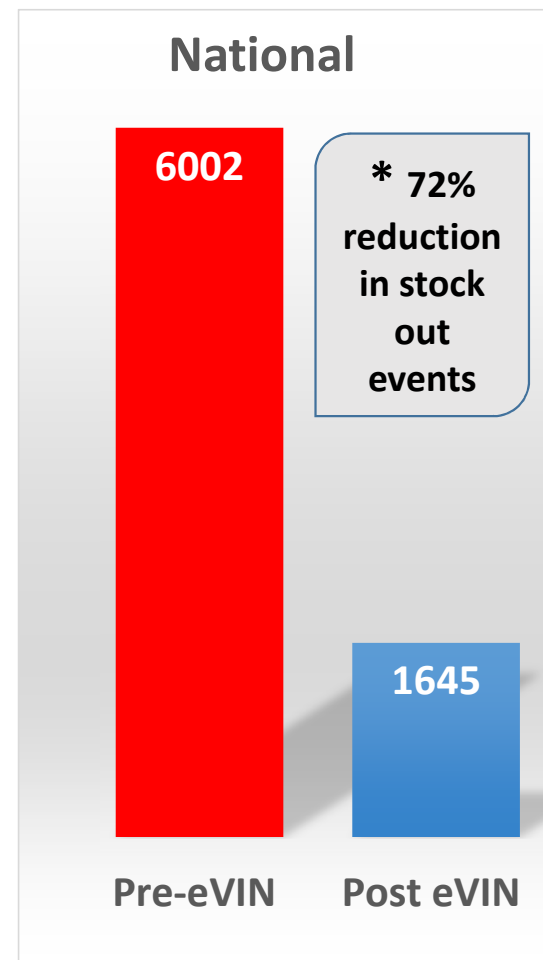
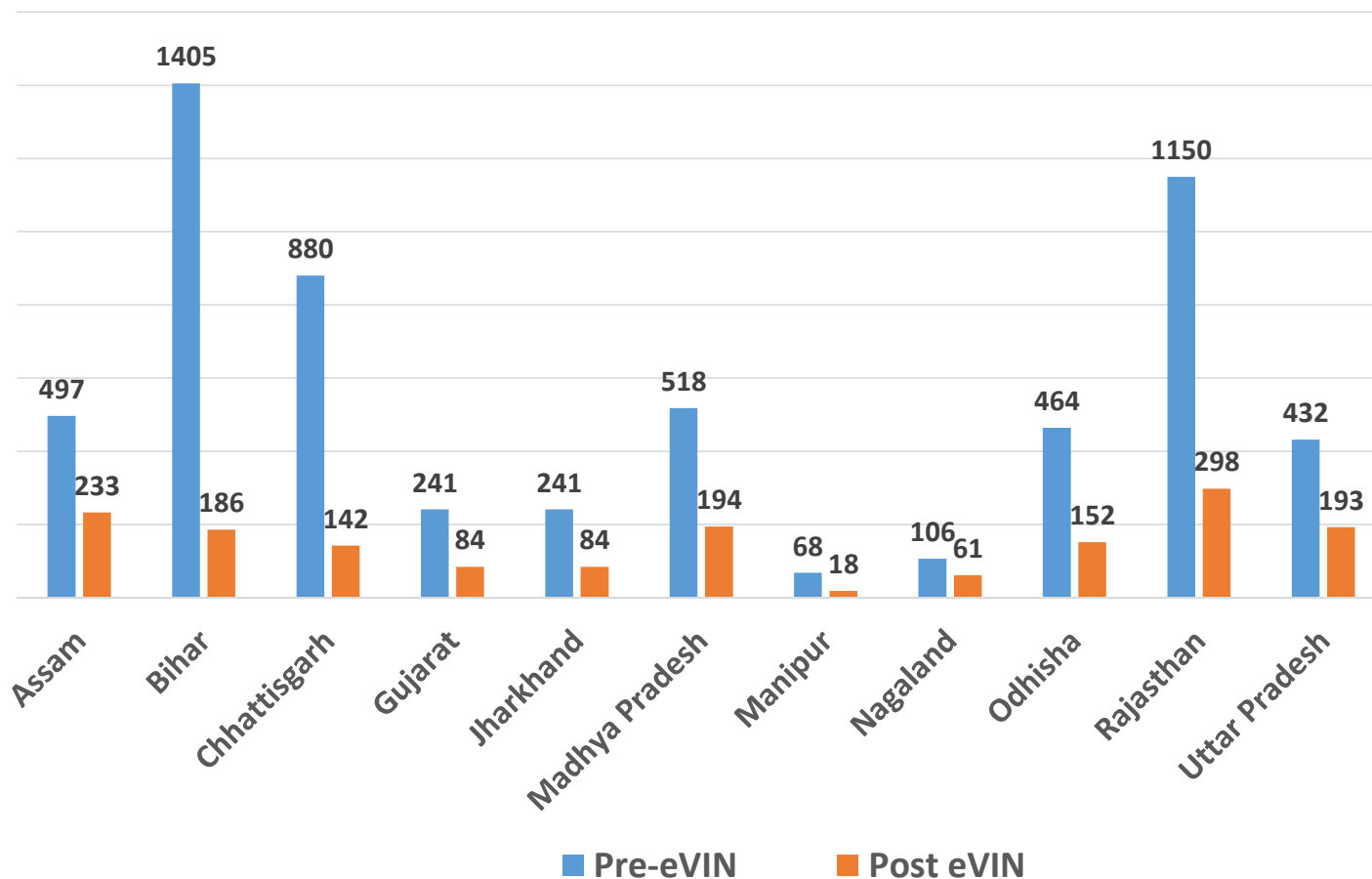
2 Million  
Transactions  
every month

Health centers updating their vaccine data on eVIN in the last 7 days



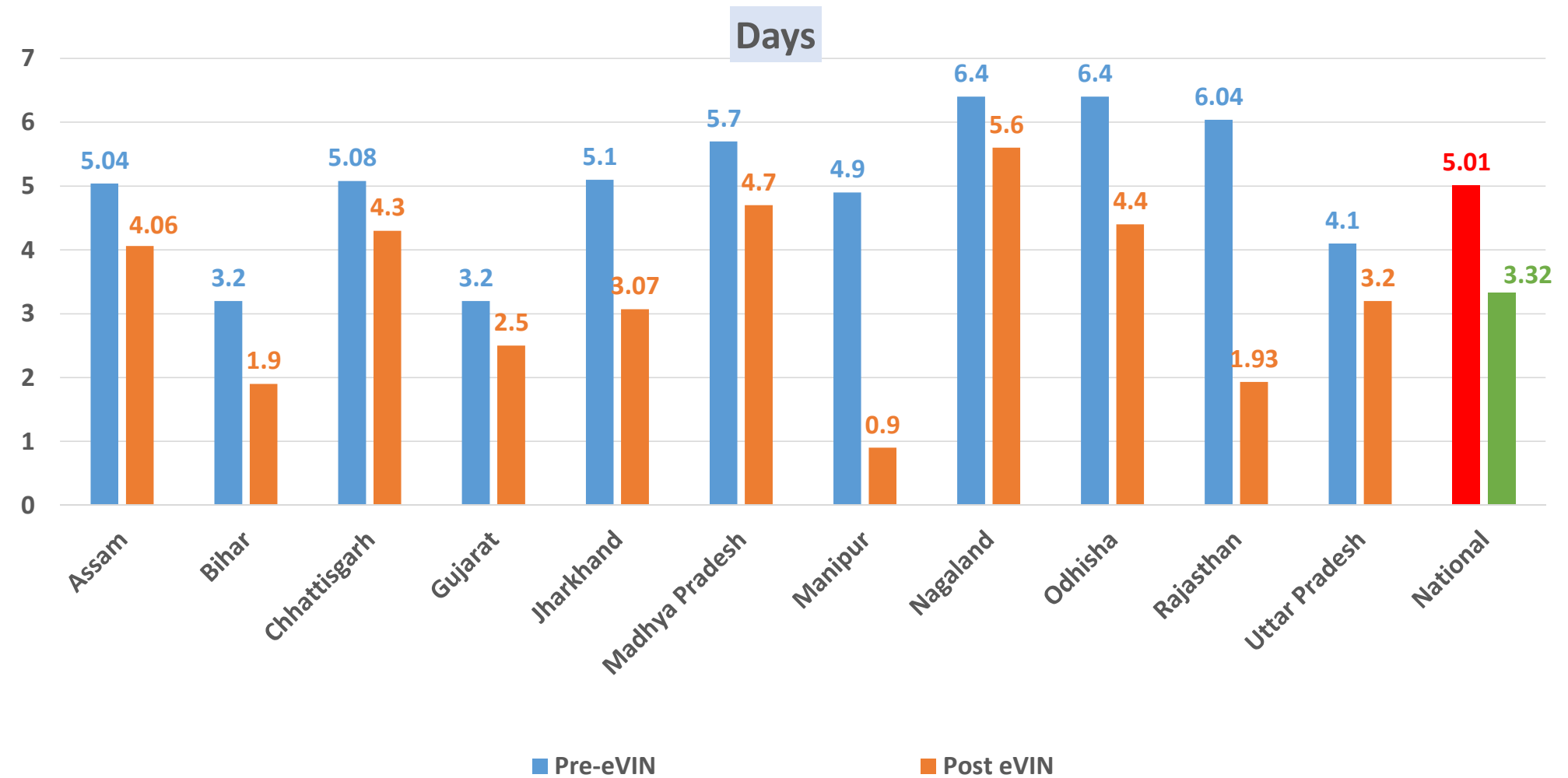
# Reduction in Stock Out Events

Stock Out Events





# Stock Out Duration Reduced – Post eVIN





# eVIN Transformation into Government System

## eVIN Costing Elements

	One Time Cost by GAVI HSS support	Annual Recurring Cost (Taken by entirely by Government)
<b>Infrastructure</b>	Software – development, license etc	Hosting, Software testing and maintenance
<b>Mobile Phones</b>	Handset and SIM card procurement	Data cost (SIM)
<b>Temperature Loggers</b>	Logger device, SIM card for loggers, Installation costs	SIM data, Logger maintenance
<b>IT Infrastructure</b>	Laptops, internet dongles	AMC, internet charges
<b>Capacity Building</b>	Training needs assessment, material development etc	Refresher trainings, upgrading of eVIN modules/material
<b>Human Resources</b>	Staff recruitment cost – includes costs outsourced HR agency	Salary for - State and Regional officers, District manager; travel and DSA

# Vaccine Logistics Management with eVIN



## eVIN States

1. Stock management is digitalized.
2. Visibility across all Vaccine Stores.
3. Remote Temperature Monitoring ensuring potency of vaccines across all levels.
4. Auto Indentation based on Consumption.
5. Timely expiry alerts based on consumption.
6. Better optimization of pipelines
7. Consumption based equitable distribution

## Non-eVIN States

1. Stock Management is Manual.
2. Visibility till National and State stores.
3. No Remote Temperature Monitoring.
4. Manual process of Indentation not necessarily based on consumption.
5. No expiry date alerts.
6. Improper optimization.
7. Uneven distribution



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**evin** 

# Improved & Efficient Health System

**Thank You**

