Public Sector Immunization Supply Chain in India
Why do we need the iSC in the public sector?

India has one of the largest Universal Immunization Programs (UIP) in the world with an annual birth cohort of more than 27 million infants along with 30 million pregnant women.
How is the iSC in the public sector organized?

- MoHFW Immunization Division
- Manufacturer
- GMSD
- State Vaccine Store – SVS
- Regional Vaccine Store
- District Vaccine Store
- CHC / PHC
- PHC / UHC / SC (Last Cold Chain Point)
- Session Sites (Outreach)

PRIMARY STORES
- Service Delivery Points
- SUB NATIONAL STORES
- LOWEST DISTRIBUTION STORES
What numbers are we talking about?

<table>
<thead>
<tr>
<th>Vaccine Store</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMSD</td>
<td>4</td>
</tr>
<tr>
<td>State Vaccine stores</td>
<td>53</td>
</tr>
<tr>
<td>Regional Vaccine stores</td>
<td>109</td>
</tr>
<tr>
<td>District Vaccine stores</td>
<td>666</td>
</tr>
<tr>
<td>CHC / PHC / UHC / Other Hospitals / Last Cold Chain Point</td>
<td>25556</td>
</tr>
<tr>
<td>Total</td>
<td>26384</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIC 32 m³</td>
<td>19</td>
</tr>
<tr>
<td>WIC 16.5 m³</td>
<td>207</td>
</tr>
<tr>
<td>WIF 32 m³</td>
<td>8</td>
</tr>
<tr>
<td>WIF 20 m³</td>
<td>4</td>
</tr>
<tr>
<td>WIF 16.5 m³</td>
<td>31</td>
</tr>
<tr>
<td>ILR Large</td>
<td>5342</td>
</tr>
<tr>
<td>ILR Small</td>
<td>31864</td>
</tr>
<tr>
<td>DF Large</td>
<td>6290</td>
</tr>
<tr>
<td>DF Small</td>
<td>28129</td>
</tr>
<tr>
<td>Cold box (20 Liters)</td>
<td>32628</td>
</tr>
<tr>
<td>Cold box (5 Liters)</td>
<td>26452</td>
</tr>
<tr>
<td>Vaccine carrier</td>
<td>1128413</td>
</tr>
</tbody>
</table>
How much vaccine do we store at each level?

<table>
<thead>
<tr>
<th>Name of vaccines</th>
<th>At State Level</th>
<th>At Regional Level</th>
<th>At District Level</th>
<th>At Sub-District Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>All vaccines under UIP except OPV and RVV</td>
<td>All vaccines</td>
<td>WIC</td>
<td>WIC</td>
<td>ILR (L)</td>
</tr>
<tr>
<td>Storage Equipment</td>
<td>WIC</td>
<td>WIC</td>
<td>ILR (L)</td>
<td>ILR (S)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>+ 2° to +8°C</td>
<td>+ 2° to +8°C</td>
<td>+ 2° to +8°C</td>
<td>+ 2° to +8°C</td>
</tr>
<tr>
<td>Maximum stock (months)</td>
<td>2.75</td>
<td>2.75</td>
<td>2.75</td>
<td>1.5</td>
</tr>
<tr>
<td>Minimum stock (months)</td>
<td>0.75</td>
<td>0.75</td>
<td>0.75</td>
<td>0.5</td>
</tr>
</tbody>
</table>
How do we manage stock levels?

**Buffer / Safety Stock = 1 week**

**Minimum Stock = 2 weeks**

**1 month working stock received**

- End of 1st week
- End of 2nd week
- End of 3rd week
- End of 4th week

- Lead time stock
- Order placed
- Order placed

**Conditions apply:** Supply cycle = 1 month, Lead time = 1 week, Sessions are held once weekly.
What are the key principles of distribution that we follow?

- Trained person on VCCH module should be responsible for receiving, storing, distributing vaccines and recording using the standardized vaccine registers.
- Records of receipts, distribution and balance should be updated regularly for each type of vaccine and logistics.
- Early Expiry First Out (EEFO) or First in First Out (FIFO) for vaccines with same expiry date.
- No vaccines / logistics should be utilized beyond expiry date / VVM discard point.
- While following the EEFO or FIFO, the VVM status of the vaccine should be given priority.
- Check the stock balance of the receiving store.
- Vaccines should be properly transported in cold boxes with conditioned ice packs.
What is the Alternate Vaccine Delivery System?

A mechanism to disassociate vaccine administration from vaccine transportation

Advantages of Alternative Vaccine Delivery System

• Helps vaccinators to timely initiate and get adequate time for conducting immunization sessions

• Ensure return from the session site to concerned cold chain point

• Maintain the Vaccine safety and quality

• Assists in reducing the AEFI s

• Improve immunization coverage and reduce vaccine wastage

• Improve community participation in the national program
How does the AVDS work?

- Only required quantities of vaccine and logistics must be supplied
- Vaccine carrier must have conditioned ice packs
- List of vaccines and logistics (including AD syringes, Hub cutter, Red and Black bags etc.) for each session site must accompany with the vaccines & logistics.
- At the time of supply VVM should not be beyond discard point
- Vaccine carrier should be tightly fit and should not be opened during transportation
- Vaccine vials must be returned to the PHC/concerned cold chain point the same day
What is the Open Vial Policy (MDVP)?

Open Vial Policy allows reuse of partially used vials in subsequent session (fixed & outreach) subject to meeting certain conditions. Any vaccine vial to which OVP is applicable can be used after it has been opened for a period of 4 weeks (28 days) from the date of opening of the vial.

Open Vial Policy is applicable to:

- DPT, TT, Hepatitis B,
- Oral Polio Vaccine (OPV),
- Haemophilus influenzae type B (Hib) containing Pentavalent vaccine and
- Inactivated Poliovirus Vaccine (IPV)
Which vaccine vial would you not use under the OVP?

- Expiry date has passed
- VVM reached/crossed discard point or vaccine vials without VVM or disfigured VVM
- No label/partially torn label and/or writing on label not legible
- Any vial thought to be exposed to non-sterile procedure for withdrawal
- Open vials that have been under water or vials removed from a vaccine carrier that has water
- If vaccine vial is frozen or contains floccules or any foreign body
- If there is breakage in the continuity of the vials (crack/ leaks)
- If there is any reported AEFI following use of any of the vaccine vial, do not use it, and retain it safely and inform Medical Officer and/or Supervisor
National Resource Centres for Cold Chain & Vaccine Management

- National Cold Chain & Vaccine Management Resource Centre (NCCVMRC) located at NIHFW, New Delhi
- National Cold Chain Resource Centre (NCCRC) located at State Health Transport Organization (SHTO), Pune
- Plan, implement, supervise, monitor, innovate, generate evidence through research, assessment, studies and provide platform for capacity building on Vaccine & Cold Chain System across the country

Thanks