Delivering Medical Technologies and Vaccines to End Users

2021 Trade & Public Health Virtual Course Webinar

Dr. Ravi Prakash Mathur,
Vice President & Head – Global Logistics, Supply Chain Excellence
Global Supply Chain
Dr Reddy’s Laboratories Ltd., Hyderabad
"Certain information set forth in this presentation contains forward-looking information."
“Our mission is to improve life expectancy and the quality of life. This requires good science. For science to be good, it has to result in affordable medicine.”

Dr. K. Anji Reddy
Founder, Dr. Reddy’s
(1941-2013)
One Purpose
We accelerate access to affordable and innovative medicines because

Billion plus patients served
40+ countries
400+ products
Agenda

• Supply Chain Transformation during Pandemic
• Case study New Product Launch during lockdown
• Gearing up for COVID 19 Vaccine Distribution – Challenges in a large geography
Supply Chain Transformation during Pandemic

- **LDM** – A system that allows you to deliver customer value through proper support and leadership to those who are closest to the process (customers and process owners). Adopted lean methodology from manufacturing and brought it into supply chain for quick response during the pandemic situation
  - Reduce review mechanism to daily buckets
  - Plan, Execute, Monitor, Review – Repeat
  - Slice data in multiple ways for daily review
    - Origin – Destination. Plants, Markets, Business Units
    - Product categories
    - Mode of transportation – Air/Road/Sea
- **Market Connect** - Being agile to capture short window opportunities like flight charters, with our strong presence in the marketplace information related to charters was a key input to leverage emerging solutions for logistics.
- **Forging new partnerships quickly** - Fast tracking the on boarding process for new partners to avail new solutions.
- **Strong partner network** - Intelligence to get early alerts on issues, enabling you to take corrective actions. e.g. Early information from by shipping lines enabled us to shift to alternate carriers.
- **Cross industry collaboration groups** – ‘Support-groups’ of transporters, shippers, airlines etc. came together for information sharing and solutioning.
- **Breaking thought barriers** - Adopting new solutions.
The launch of “Cinacalcet” in Europe ran into the danger of being significantly delayed, but despite all odds, our team didn’t let this happen. Because of the **product patent** still being in force the **product could not land and get custom cleared** in Europe. Our import location in the **EU closed their airports** which was critical for this launch. We, worked closely with quality and supply chain team to find ways to address the situation. The final option was an alternative airport where the medicines were shipped and from there **moved via truck and ferry** transported to the **final destination under bond**. The Logistics team was able to connect to the **last Lufthansa freighter** out of Hyderabad to ensure this shipment reached destination. The QC team supported by **expediting the testing** timeline with the external testing lab – having them come to the lab **over the Easter break** to ensure we completed the testing in time. Finally, the team **arranged trucks waiting on each country’s respective border** and the warehouses ready to sample the goods as soon as they arrived – providing access to an affordable medicine on day one of the patent expiry.
Vaccine – in country Distribution

Indian Geography
- Total Area – 3,166,391 Sq. Km.
- Demography 34% Urban and 66% rural
- Overall Indian population 136Cr & People in 18yr to 60yr age group 60Cr
- India is a federal union comprising of 28 states and 8 union territories.

Current Cold Chain Infrastructure
<table>
<thead>
<tr>
<th>Cold Chain Infrastructure</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Chain Points</td>
<td>28932</td>
</tr>
<tr>
<td>Walk in Coolers</td>
<td>240</td>
</tr>
<tr>
<td>Walk in Freezers</td>
<td>70</td>
</tr>
<tr>
<td>Ice Lined Refrigerator</td>
<td>44226</td>
</tr>
<tr>
<td>Deep Freezers</td>
<td>40792</td>
</tr>
</tbody>
</table>

Challenge is how to upgrade existing infrastructure and how to create new infrastructure for these volumes.
Three Archetypes for End to End Logistics for Vaccine Distribution

1. Direct shipment to point of use
   Direct shipment of pallet shipper or cooling box from fill-finish to point of use

2. Local cross-docking
   Local cross-docking of cooling boxes on pallet to reduce cross-border costs

3. Local warehousing
   Use of local storage and fulfillment capacities to break-down pallet shipper into cooling boxes
Overall Scheme for Vaccine Distribution

- Plant
- Primary Distribution Center
  - Government Hospital/Corporate Hospital
  - Secondary Distribution Center
  - Private Hospital/Clinics
Creating a robust Vaccine Distribution Network

- Design a warehousing and distribution network with minimum touch points
- Temperature controlled warehouses for primary warehousing
- Insulated cold chain boxes validated for 72 to 96 hrs of transit
- Active transportation solutions such as Refrigerated Vans
- Temperature controlled solutions conducive for air freight
- Medical grade freezers for storage of vaccines at primary health centres & clinics
- Continuous temperature monitoring solutions for storage and transit
- Geofencing and in-transit tracking of shipment
- Standard Operating procedures and training of all personnel at all nodes
- Digital platform for end to end visibility
Thank you for your attention