

# Smart Vaccine Distribution Management solution

Manage vaccine delivery and integrity from production to inoculation



## Introduction



COVID-19 has dominated world-headlines for the majority of 2020 disrupting normal life. Global multilateral health agencies joining hands towards bringing a vaccine solution is finally bearing fruit with an approval round the corner. What lies ahead is a challenging scenario to transport the vaccine shipments from manufacturing to distributing it for last mile administration. Topping the logistical puzzle are the stringent temperature-controlled storage requirements for maintaining the efficacy of the vaccine during its storage life. The current global cold-chain infrastructure is inadequate considering the scale and magnitude of vaccine distribution. It needs a safe, reliable and predictable real-time vaccine consignment tracking and round-the-clock temperature monitoring until the dose is administered.

## Key Risk Factors to the Vaccine Cold Chain

- Poor Visibility & Traceability of Vaccine consignment from Point of dispatch to final point of receipt
- Prone to Counterfeiting or illegal diversion or theft
- Inadequate temperature monitoring during and after transit at the site of administration risking vaccine integrity
- Lack of holistic real-time information resulting in drastically reduced visibility & control over supply chain operations & planning
- Highly Manual chain of custody processes making compliance & audit trails cumbersome

The **Smart Vaccine Distribution Management (SVDM) solution by IoT WORKS™** is an integrated offering that helps enterprises ease the challenges arising out of complex global distribution programs. SVDM comprises IoT sensors to track the location & monitor the condition/integrity of vaccine packages or containers and an interactive management portal to maintain real-time visibility of the shipment. Further, by leveraging enterprise systems integrations and optional Blockchain synchronization, SVDM ensures truly intelligent vaccine distribution management by automating workflows that maximize efficiencies for every stakeholder in the value chain.

## Vaccine Cold Chain Trends & Challenges



Most vaccines need to be stored within 1°F of their ideal temperature



25% of vaccines reach their destination degraded because of incorrect shipping



The pharmaceutical industry loses roughly \$35 billion annually as a result of temperature excursions



21 of 22 biologic license approvals from FDA in 2019 required cold-chain and will demonstrate 48% growth between 2018 and 2024



Between 12 billion and 15 billion COVID-19 vaccines will be needed globally.

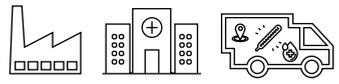


2020 Biopharma Cold Chain Sourcebook forecasts a \$17.2 billion logistics market





# Smart Vaccine Distribution Management (SVDM) Solution



**HCL's Smart Vaccine Distribution Management (SVDM)** solution is able to intelligently track the logistics along its journey path as well as post-delivery monitoring of the vaccine since the shelf-life of the vaccine is short.



## Enterprise TMS and WMS integration for real-time event traceability

Enterprise integration with transport and warehouse management systems enable seamless shipment traceability  
*Pallet & Product Traceability From One System*



## Continuous sensor data for event alerts

Synchronous Data feed from over a dozen device variables like location, motion, temperature, condition, etc.  
*Facilitates Root Cause Assessments & Improvements*



## Exception notifications

Real-Time monitoring & reporting along with exception-based workflow notifications  
*Respond Only When Needed, Proactively Correct Problems*

## Key Features of SVDM



Real-time location tracking & integrity management



Autonomous Supply Chain Management



Blockchain-integrated Custody Management



Data-driven Preemptive Decisioning

## Solution Benefits



Real-time vaccine consignment tracking with active chain of custody management



In-transit live temperature and condition monitoring



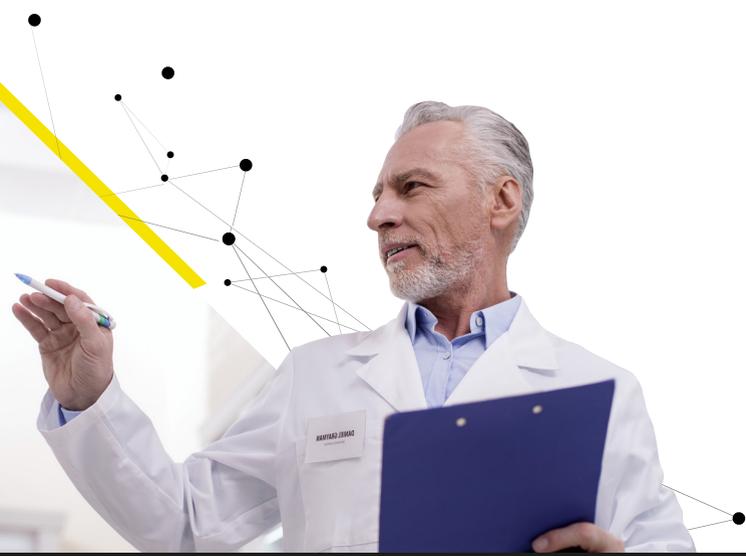
Just-in-Time logistics leading to active inventory control



Integration with Transport and Warehouse Management Systems for dynamic routing (prevention of wastage due to reshipping)



Autonomous and Predictable Cold Chain Operations



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