

## DHL identifies critical challenges in COVID-19 vaccine logistics

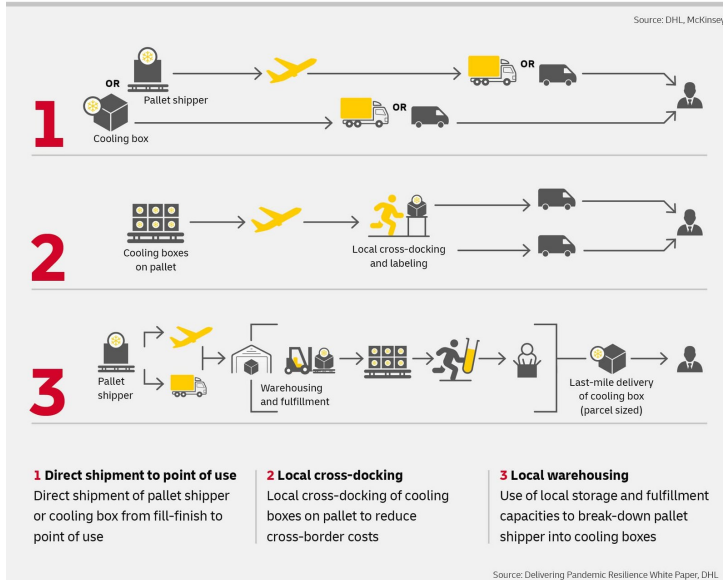
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### Global delivery of 10 billion doses of serum needs scaled-up medical supply chains

THREE ARCHETYPES OF END-TO-END LOGISTICS SOLUTIONS FOR COVID-19 VACCINE DISTRIBUTION

EXHIBIT 7

Source: DHL, McKinsey



With first emergency use authorizations for COVID-19 vaccines expected to be effective in the last quarter of 2020, logistics providers are challenged to rapidly establish medical supply chains to deliver serums of unparalleled amounts of more than ten billion doses worldwide.

DHL, working with McKinsey & Company as analytics partner, is therefore publishing a [white paper](#) on delivering stable logistics for vaccines and medical goods during COVID-19, and future health crises.

Currently, more than 250 vaccines across seven platforms are being developed and trialed. As COVID-19 vaccines have leapfrogged development phases, stringent temperature requirements (up to  $-80^{\circ}\text{C}$ ) are likely to be imposed for certain vaccines to ensure that their efficacy is maintained during transportation and warehousing. This poses novel logistics challenges to the existing medical supply chain that conventionally distributes vaccines at  $-2$ – $8^{\circ}\text{C}$ .

In the paper, DHL evaluates how the transport of vaccines as highly temperature-sensitive product can be managed effectively to combat the further spread of the virus. The scope of this task is immense: To provide global coverage of COVID-19 vaccines, up to  $\sim 200,000$  pallet shipments and  $\sim 15$  million deliveries in cooling boxes as well as  $\sim 15,000$  flights will be required across the various supply chain set-ups.

“The COVID-19 crisis emerged with an unprecedented breadth and impact. It required governments, businesses, and the logistics industry alike to adapt quickly to new challenges. As a world leader in logistics, we want to share our experience of operating during one of the biggest health crises in recent history, in order to develop strategies in an ever-more connected world”, explains Katja Busch, Chief Commercial Officer DHL. “To protect lives against the pandemic, governments have

moved towards a more active role in medical supply chains. Over the past few months, we have demonstrated that sufficient planning and appropriate partnerships within the supply chain can play a key role as governments work to secure critical medical supplies during health emergencies such as this.”

### **Future public health crisis management to include public-private partnerships**

Since the outbreak of the pandemic, demand for medical supplies has surged. For example, UNICEF sourced 100 times more face masks and 2,000 times more medical gloves than in 2019. Bringing medical supplies from their distant sources to use at the frontline has been one of the most crucial activities in pandemic response management in the first phase of the health emergency. For PPE specifically, inbound logistics were a major challenge due to geographically concentrated production, limited airfreight capacity and a lack of inbound quality checks.

To ensure stable medical supply in a future health crisis, a comprehensive setup of public health crisis strategies and structures needs to be established by governments with partnerships from both public and private sectors.

To kick start the dialogue among the different actors and improve pandemic resilience in medical supply logistics, DHL provides a framework for the cooperation of logistics companies with authorities, politicians, NGOs as well as the life sciences industry. The framework helps to establish measures to ensure the most stable and safe supply chains possible.

Besides an emergency response plan, this includes a partnership network, strong physical logistics infrastructure and IT-enabled supply chain transparency. Lastly, a response unit with a clear mandate should be put in place to implement all critical activities at short notice.