

09.02.2021

# Navigating the complex value chain: COVID-19 vaccine distribution – part 2: cold chain and security



In the first part of this two-part blog series, we looked at the overall challenges the COVID-19 vaccine distribution poses due to its diverse requirements:



Transporting the vaccine as fast as possible at a constant extreme temperature across the globe to the most remote locations while keeping it safe and secure. More specifically, we investigated complexities of developing a supply chain solution for the distribution during the pandemic as well as the importance and necessity of traceability, especially in a pharma context.

In this part, we will look at the risks involved in keeping the vaccine effective as well as security considerations to prevent interference such as theft during the distribution.

## Temperature and risk

Safe and effective COVID-19 vaccines require cold storage. While maintaining the cold chain is already a challenge in itself, extremely low temperature requirements for some of the vaccines (-70°C) make maintaining a constant temperature throughout the supply chain even more difficult.

While pharmaceutical manufacturers have the storage capability required to maintain the necessary temperatures, it is likely that hospitals, pharmacies, and other health care providers, especially smaller, rural providers, do not. Even those that do may have limited

## Related solutions



## Software Solutions

Quality control and compliance measures within the warehouse also help to ensure safe and effective vaccines. Those measures include constant temperature monitors during storage, product labelling, data matching and ensuring proper paperwork accompanies the vaccine through every step of receiving, storing, picking, packing and shipping. This level of compliance management, with addition of cold chain requirements, adds a layer of complexity for all distributors - especially those that are not familiar with the pharmaceutical industry.

On a truck, more so than in a warehouse, faulty thermostats or compressors can introduce additional risk, and the trailer or truck itself can experience maintenance issues. Once the vaccine has been thawed, it cannot be re-frozen or stored under frozen conditions. The “shelf-life” clock for the vaccine begins to tick, decreasing the amount of time it will continue to be viable.. That’s why implementing a traceability solution is crucial. Taking into consideration remote locations of the US like Hawaii and Guam, distribution speed also plays an important role. For this reason, the military is heavily involved, as they have bases across the world and a strong track record for transporting people and equipment.

## Security

Pharmaceutical companies are accustomed to the responsibility that comes with manufacturing and distributing high value products. Unfortunately, there is also risk that deliveries can be diverted, especially when such a valuable load is on board. Due to the high value of the vaccines, they will be shipped in smaller quantities in more trailers which helps companies to obtain insurance.

Protection of the vaccine also comes in other forms and will follow the same protocols used currently for other high value products. Considerations include distribution in unmarked trucks as well as regularly changing routes to avoid security risks, the employment of additional security personnel to accompany shipments as well as GPS monitoring. Making use of a transport management system and a warehouse management system with traceability capabilities help achieve this.

## Bringing it all together

There are many aspects to the COVID-19 vaccine supply chain that make it a unique challenge such as volume, traceability, speed, temperature control, safety, and security, as well as the global nature of the effort and distribution. A typical supply chain solution would focus on any one of these facets, but the world needs us to tackle this solution all together and all at once.

From manufacturing to storage to distribution to final delivery: The supply chain can be vulnerable to human error and the unexpected. With a highly valuable pharmaceutical product such as the COVID-19 vaccine, it is even more crucial to engage industry experts and implement the right technology and best practices to reduce risk. This can include solutions to [automate processes](#) to streamline operations to rolling out track and trace/serialization solutions allowing better visibility, especially under these circumstances. Software such as [warehouse management systems](#) for example offer optimum visibility and flexibility within the warehouse, among many other functions. [Transportation management systems](#) on the other hand provide functionality for operations on the road, such as route planning with track and trace functionality. We at Körber are proud to be a partner with some of the pharmaceutical and logistic companies working together to safety and quickly bring the COVID-19 vaccine to people across the country and the world.

...tion organizations to maximize space, improve efficiencies and increase productivity across the business.

[Read more](#) →



Any questions?

**Let's connect!**



**Matt Deep**

Vice President of Professional Services

**Read more** →

Körber can help you achieve a breakthrough in your supply chain. Tell us about your projects and we will be in touch shortly.

**Get in touch with us!** →

