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Bridging Supply Chain Gaps in Clinical Trial Logistics for mRNA Vaccines

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Since the beginning of the COVID-19 pandemic, pharmaceutical companies have been working to develop successful vaccines within expedited time periods.

The rapid spread of the original virus strain and its subsequent variants across the globe highlighted the importance of vaccine technologies which were capable of swift deployment for human trials with efficacy and safety remaining top priorities.

Challenges in the mRNA vaccine supply chain

As mRNA vaccines take centre stage, the challenges surrounding their formulation and stability are now readily apparent. One of the major challenges of mRNA vaccine technology is its dependency on cold chain shipping and storage. Vaccines need to be shipped and stored at very low temperatures. This requires freezers capable of handling temperatures of ?80°C which are not readily available at every clinical trial site. As vaccines are subject to strict regulatory controls to ensure their safety and efficacy the cold chain shipping infrastructure needs to be in place if mRNA vaccines are to realize their full potential.

Logistics providers connect the dots with hi-tech future-focused solutions

Logistics companies are playing an important role in building reliability in healthcare supply chains using end-to-end solutions for storage and transportation at specific temperatures from the point of manufacture to the healthcare facilities where they will be used. As a trusted partner in clinical trial and healthcare logistics, FedEx is **well-positioned to handle mRNA vaccine shipments around the world. So far it** has supported shipments of COVID-19 vaccines to more than 60 countries and territories around the world since 2020.

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FedEx handles these potentially life-changing complex shipments effectively through its cold chain capabilities and proprietary sensor-based tracking technology **backed by a dedicated healthcare team, a global network of aircraft and facilities to support the express transportation of vaccines.**

Our cold chain storage facilities are temperature-controlled with a monitoring system to protect the vaccine shipments before and after transit, including down to ?80°C. For shipment, high performance reusable thermal packaging supports the temperature requirements specified by the manufacturer and provides 96 hours of temperature stability to keep the contents healthy and viable in case of unexpected emergencies.

End-to-end tracking technologies help ensure regulatory compliance by generating comprehensive data and providing continuous visibility on the temperature of biopharmaceutical shipments to maintain necessary protocols for quality assurance.

Pharmaceutical companies around the world are continuing to advance COVID-19 vaccines to respond to new strains of the virus. The lessons learned in vaccine design and production in response to COVID-19 are also being reapplied to treat other viruses. Fortunately, logistics service providers like FedEx are transforming rapidly to keep pace with the scientific breakthroughs to ensure the safe delivery of promising new treatments that help save lives.

Author's Details-

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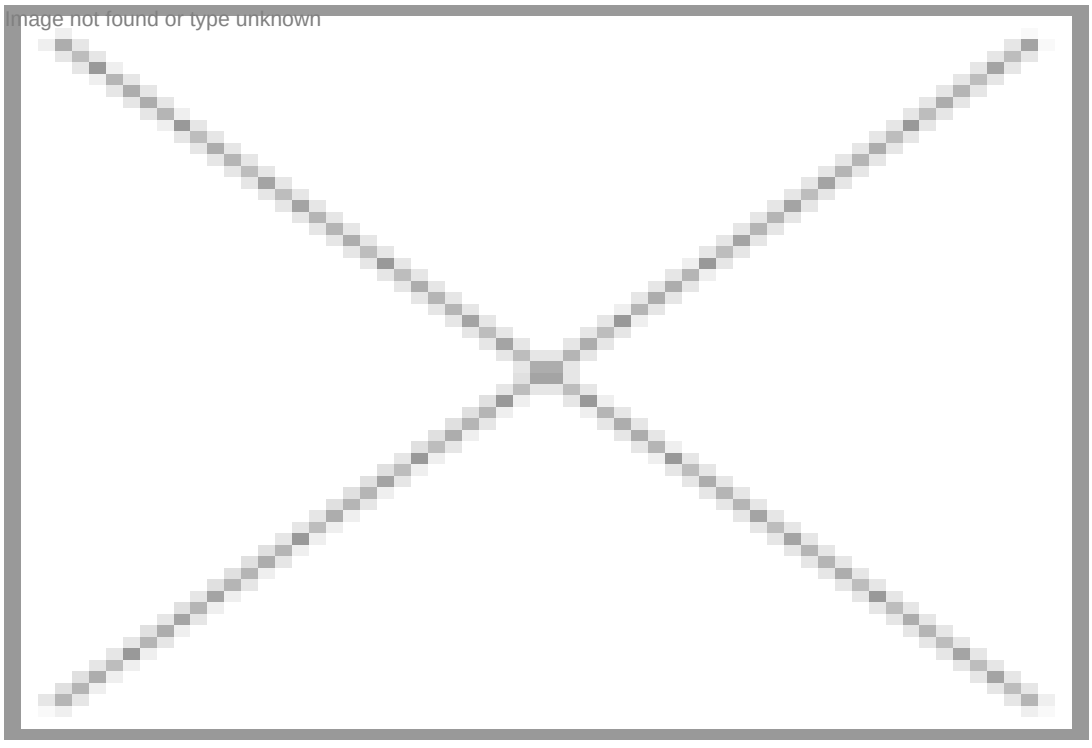

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