

# Air Cargo & the Cold Chain

**Don't leave the logistics up in the air.**

BY KEVIN MCPHERSON

**T**here have been many ups and downs in the air cargo industry over the past two years, but there's one trend that appears to be here to stay: the continued growth of cold chain cargo. There are several types of products that require cold chain or temperature-sensitive shipping, including perishables such as flowers and food. The biggest cold chain growth, however, is coming from the healthcare industry.

Of the top-selling pharmaceutical products worldwide, seven of the top 10 are expected to require cold chain transportation in 2012, according to the Cold-Chain BioPharma Logistics Sourcebook. Most of these products will travel via air, and their safe arrival is critical to the patients that depend on them to improve their lives.

## Trends and challenges

Much of the healthcare industry cold chain growth is being driven by a surge in the number of biologics coming into the marketplace. Biologics are highly temperature-sensitive, and any deviations from their intended temperature range can mean product loss, revenue loss and patients who will not receive their drugs on time.

Due to their high value and sensitivity, biolog-

ics must move as quickly as possible through the supply chain, which is where air cargo comes into the equation. Meanwhile, maintaining temperatures in the air can be extremely challenging. Products must be packaged and stored to withstand the rigors of an air cargo journey, where external temperatures often fluctuate wildly and can quickly reach extremes.

Looking at the air cargo piece alone is not enough. It's critical to remember that the supply chain journey neither starts nor ends in the air. Products that withstand an air cargo journey only to undergo a temperature excursion on the ground will result in compromised products.

Adding to the complexity is the fact that much of the growth in demand for cold chain products is coming from emerging markets, where the logistics infrastructure is often very deficient. In addition to physical infrastructure issues, there is also a challenge of not having enough trained in-country representatives that can resolve customs clearance delays and manage risk when things go awry. All of these challenges underscore the need for advanced planning and a highly adaptable and coordinated supply chain.

## Taking the temperature of your supply chain

There are several things companies can do to ensure that their supply chain is set up to protect temperature-sensitive products, whether these are high-value biologics or other pharmaceutical products or any other perishable good. Some key advice to keep in mind:

**Make sure you have the full picture:** Take a holistic view of your supply chain to ensure that temperature-sensitive products are protected at all stages of their supply chain journey. This includes having facilities where temperature-sensitive products can be stored in refrigerated sections, or freezers according to the product needs; solutions that allow you to maintain temperatures during both air and ground journeys until products reach their end destinations; and a way to track products as they move from one destination to the next.

**Know the guidelines:** Currently, the Parenteral Drug Association (PDA), U.S. Pharmacopeia (USP), and the International Air Transportation Association (IATA) have guidelines that define best practices for transporting temperature-sensitive pharmaceuticals specifically. Com-



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Companies must ensure that their temperature-sensitive products are protected from the time they are stored in a warehouse or a distribution center, to the time they arrive in the end customer's hands.

panies can also work with third parties that can help them stay on top of changing regulations and maintain compliance.

**Reduce supply chain hand-offs and improve collaboration:** The more products have to change hands in the supply chain, the higher the chance for temperature excursions and compromised products. It's also important to collaborate closely with your third-party logistics providers to build a good plan for keeping products on course at every stage of their journey. Consider reducing the number of carriers or transportation providers you work with so that you can lessen hand-offs in the supply chain.

**Take advantage of technology:** Having access to tracking technologies that give you round-the-clock visibility into your temperature-sensitive shipments is a critical piece of the puzzle in ensuring that products are protected in the supply chain. With the right visibility solutions, you can know immediately when products are in danger of going outside their temperature range and implement contingency plans when needed.

**Ensure that you can intercede when needed:** Beyond visibility, ensure that you have the ability to take action and intercede when there are disruptions or delays in the

supply chain. This means having access to flexible networks and on-the-ground experts who can do things such as re-ice or re-route shipments that have been delayed.

**Plan for the unexpected:** The need for risk mitigation strategies and contingency planning is paramount when shipping temperature-sensitive products due to the impacts on product efficacy that can come from delays. Leverage historical information to determine potential scenarios that could recur and have multiple back-up plans.

**Find the right partner:** Your supply chain partners are essential in getting your temperature-sensitive products to customers at the right time and in the right condition. Having a partner with a strong global network is important to ensure you can cover all key lanes where products need to go. Choose partners based on their expertise and network, proven ability to execute and willingness to stand behind their service with actionable quality programs.

## What's new in the marketplace

In terms of specific solutions that companies should consider for temperature-sensitive shipments, there are more coming into the market as the growth of cold chain continues to soar. One is temperature pro-

filings, which allows companies to profile their supply chain network to "see" exactly how their temperature-sensitive products fare at every stage of their supply chain journey. Profiles provide data on product conditions that companies can then leverage to develop packaging solutions and processes for better protecting these products across the supply chain. What's critical in temperature profiling is ensuring that the profile is customized for a company's particular products because each product has its own unique requirements and could be impacted differently by external conditions. Companies also need to ensure that profiles are performed in both summer and winter to determine how products react to drastic changes in weather conditions.

Another critical solution area is advanced monitoring services that provide both around-the-clock visibility into the transportation milestones of temperature-sensitive products and the ability to intervene when needed. At UPS, we have a service called UPS Proactive Response<sup>SM</sup>, which includes 24/7 proactive monitoring and notification of in-transit milestones as well as dedicated agents on standby to initiate service recovery procedures based on a customer's unique requirements. UPS Temperature True<sup>SM</sup> couples the monitoring and notification service with direct routing of airfreight shipments, further mitigating the risk of damage and loss.

A third solution area that companies should consider is technology that gives them real-time information on product temperature itself. With this technology, a company will know immediately if their product has gone outside of its temperature range so that they can take corrective action when needed to protect products. Another key advantage is the ability to review and compare data over time to identify any problem areas in the supply chain where issues commonly occur so that companies can make informed decisions on how to correct or avoid these areas in the future.

What all of these solutions have in common is a focus on risk mitigation, which is essential in protecting temperature-sensitive products in the supply chain, and ultimately, protecting company's customer relationships and bottom lines. **wt**

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