Organising the Cool Supply Chain at Airports

Stricter requirements for the transportation of pharmaceutical products have an impact on how the cool supply chain at airports should be organised. Despite the complexity of the effort, developing and implementing a global industry certification standard is crucial.

Supply Chain Evolution
Shippers and forwarders stress the importance of time- and temperature-sensitive products in pharma as well as their trend to grow in the short term. Since more countries are enforcing GDP-type (good distribution practices) guidelines, this will likely lead to an increase of pharma shipped via air cargo, due to stricter requirements. The consensus and understanding in the logistics air cargo community are growing that shippers will increasingly look for reliable and transparent temperature-controlled solutions.

The global sourcing and distribution model of the pharma industry favours air cargo. The current major production locations in Europe and the US are expected to grow, with new production sites being developed in India and Latin America.

This explains the big differences in pharma volumes between regions. As an example, looking at the European average, pharma represents 3.3% of air cargo volumes. Looking at Belgium, being in the middle of one of the European pharma clusters, pharma represents 5.7% of total air cargo volumes in Belgium. As a result, the logistical service providers based at Brussels Airport are investing more than the European average on dedicated pharma infrastructure and specific pharma handling know-how.

Since the average market share of the pharma segment in the total air cargo volume is limited, specialisation is only possible in an exclusive number of international logistical platforms. A clear trend is emerging where airports close to pharma clusters are specialising in offering reliable and transparent temperature-controlled handling of pharmaceutical products.

We also see this evolution taking place at Brussels Airport, developing into a preferred pharma gateway in the region. Local logistical suppliers are taking steps to increase the quality of their services in the air freight supply chain for pharmaceutical products. It consists of a diverse range of commodities with different handling and storage requirements. This drives the diversification of specific handling services offered for pharma products.

Based on pharma volumes handled at our airport, estimates indicate that about 75% require passive cooling solutions and about 25% require active temperature control.

Due to the complex supply chain requirements, active temperature control solutions demand a premium handling. Passive solutions, on the other hand, are less costly to implement and drive the biggest part of the pharma volumes in air freight.

The global pharmaceutical industry will spend $8.36 billion on cold chain
logistics in 2014 and is expected to expand to more than $10 billion by 2018.

A recent IATA study has shown that the mode shift from air to ocean has occurred, also applying for pharmaceutical shipments. However if we take a closer look, differences exist based on the value density of the products. The more valuable the commodity, the more likely it is to fly by air. The air freight transport mode has seen higher growth rates for the segment with high-value density pharma products.

A good example of this trend is the biopharmaceutical products, which are often extremely highly valued. Protecting and certifying the integrity of these costly biopharmaceutical shipments requires a significant additional investment in cold chain capabilities. Close and careful temperature and humidity management during transport is essential, but has significant supply chain implications. Effective cold chain management with a risk-based approach has to be introduced by logistics managers, in order to handle these products within very specific parameters.

This carries significant specialist storage and transportation capabilities which are not limited to pharmaceuticals; some medical devices and diagnostics products are also condition-sensitive.

Work in Progress
The pharmaceutical industry relies on air transport for its speed, reliability and efficiency in delivering high-value, time-sensitive, temperature-controlled cargo.

Air carriers, freight forwarders, ground handlers and airports provide quality services, but many challenges remain. Regulations are increasing around the world, processes and specialised equipment are becoming more complex, specific training is required to ensure the staff handling the products have a good Pharma awareness, and multiple audits are imposed by pharmaceutical companies and regulators.

Historically, there have been an enormous number of different regionally-based regulations for the industry, like airlines, handlers and forwarders, to comply with. More recently, various countries and the European Union (EU) have introduced good distribution practice (GDP) guidelines to ensure the product integrity is maintained throughout the supply chain. However, until this year, there were no global certification standards that could be internationally recognised and implemented.

As a result, in many cases a mismatch remains between expectations and service offered. We see a lack of uniform implementation through the entire supply chain at the airports globally. Not all stakeholders in the cool chain at origin or at destination of the route are properly equipped to handle temperature-controlled products.

There is no common global certification for handling of pharmaceutical cargo in line with existing regulations and standards. And finally a common audit format is lacking, leading to a lower audit effectiveness; ground handlers and airlines are being subjected to multiple audits by various pharmaceutical companies and freight forwarders, with different sets of standards. This is not contributing to a smooth effective change in the cool supply chain, which is required by pharmaceutical shippers.

Optimising the Supply Chain
Logistical service providers must adopt a more aligned supply chain model. This means working collectively with all business partners and service providers to craft supply chains for optimal end-to-end visibility and reliability.

So what exactly constitutes an optimal cool supply chain?
Firstly, from an infrastructure perspective, any operator participating in the cool chain – be it a trucker, a forwarder, a handling agent or an airline – must have the right temperature control technology and process in place to keep the pharma products at the correct temperature.

This often requires investments in temperature-controlled warehouses with a variety of temperature zones. 15-25°C; 2-8°C; and cold storage at -20°C are the temperature zones that are commonly used as standards in Pharma air freight.

As an alternative to temperature-controlled warehouses, high-level passive solutions or specific active containers can be used to protect the temperature-sensitive cargo during transport on the ground and in the air.

Regardless of the type of packaging or cool room, the quality of the handling is primarily impacted by the expertise of staff. Specific and rigorous training has to be put in place in order to make the people handling the shipments understand the specific transport and storage requirements. Staff need to develop a Pharma-awareness.

Every operator should make a selection of its suppliers based on this Pharma awareness, ensuring correct handling in every step of the supply chain. Training of every person involved in the handling, supervision or processing of Pharma is key, in order to make them understand the impact on their job of good distribution practice guidelines.

Managing the Complexity
The biggest challenge, however, lies in the complexity and number of handovers from the moment the goods
are transported to the airport, to the point at which they are handed over to the customer at the destination. If not all the different steps in the logistical process are up to standard, the integrity of the product cannot be maintained.

Aligning and standardising the pharma handling processes between the supply chain partners, as well as to train all industry stakeholders through the entire supply chain on and around the airport is the only effective way to guarantee the correct handling of pharmaceutical cargo.

Instead of local regulations and standards, the focus should be on a global standard. This will lead to an end-to-end integrated cool chain.

Instead of individual local heroes upgrading their operations to a top level performance, the focus should be on a community approach where all the partners in the supply chain apply the same high standards for temperature control.

IATA is best placed to take the initiative to develop a global air cargo industry certification standard. Brussels Airport worked collaboratively with IATA, in order to develop and implement such a standard in the framework of the IATA Center of Excellence for Independent Validators in Pharmaceutical Handling programme, or CEIV Pharma. The CEIV Pharma certification programme provides participants in the air cargo value chain with the tools to ensure that they are operating to the highest standards for the transport of what in many cases are life-saving drugs and medicines. And it will give pharmaceutical companies confidence and assurance that their cold-chain logistics requirements are being met through an independent certification process.

IATA and Brussels Airport have successfully tested the pilot concept by developing the programme and certifying an entire airport community covering the entire cool chain through the airport. The Belgian regulator (FAGG) and Belgian Customs, as well as the pharma shipper community, are actively involved in the project. This highlights the intention to build a broad consensus on the subject by bringing together all stakeholders.

Brussels Airport is working with a group of twenty local stakeholders (ground handlers, freight forwarders, truckers and airlines) to undergo the CEIV Pharma training, bringing the cargo community together for the common goal of becoming certified. This will allow those Brussels-based stakeholders to offer pharmaceutical companies the competitive advantage of assuring cold-chain integrity to their clients for all pharmaceutical shipments handled at the airport. We see a positive impact on the risk profile of the cold chain through Brussels Airport, in the sense that all the steps and handover points are now aligned, trained and up to GDP standard.

We hope that our leadership in being recognised as a CEIV Pharma-certified community will persuade other airports to do the same. Step-by-step routes will be certified when airport communities at origin and destination are aligning to the clear set of guidelines created by IATA, ultimately assuring that cold-chain pharmaceutical products can be transported in a standardised, sanitary and secure way throughout the world.

IATA is now in the process of rolling out this certification programme for pharmaceutical handling on a global scale. Airlines, handling agents, forwards and truckers at various airports around the world are joining the programme, in order to align their training, processes and infrastructure to this new air cargo standard. As a result the transport of pharmaceutical shipments via air freight will be managed as a transparent and reliable cold chain, which will improve the risk profile of these certified lanes compared to uncontrolled routes.

References
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In his role of resident pharma and life science logistics expert, he is also in charge of the pharma and perishables projects at Brussels Airport. Nathan managed the CEIV pharma certification program at BRUcargo making Brussels Airport the first cargo community in the world to be CEIV pharma certified. Nathan is a member of the Cool Chain Association and the IATA Time and Temperature Taskforce.

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