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Medicine turns to cold chain warehouses for its storage needs

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A cold chain is a temperature-controlled supply chain which is required to preserve and maintain perishable products like food items, chemicals and now, pharmaceutical products. It involves constant refrigeration of the product from the time of its production, through its transportation, handling and storage, right up to delivery. Pharmaceutical cold chain management is an important aspect of the supply chain in the healthcare industry. The cold chain logistics services help the pharmaceutical and healthcare industries maintain a continual stockof drugs from suppliers and distributors across varied locations.

Historically the pharmaceutical industry was not a big consumer of cold chain logistics. This was becausea majority of its drugs did not have to be stored or transported in a temperature controlled environment. It is only in the recent past that there has been an eruption of cold chain activities due to the growing acceptance of a new class of drugs called biologics. Even though biologics have recently been introduced in the world of medicine, they have already taken the market by storm. Biologics excel not only in terms of their treatment capability, but also in terms of the demands they are placing on the pharmaceutical supply chain as most biologics require both temperature and time-controlled distribution.

The warehousing and logistics sector is greatly benefittingfrom the introduction of Goods and Services Tax (GST). As a result, logistics companies are now planning to build and own warehouses instead of just leasing them. The Indianpharmaceutical industry is even expected to see 100% growth in this sector by 2021. Warehousing will not only reduce the transportation cost but will also lead to efficient inventory management which drives economies-of-scale. Better warehousing will facilitate exponential growth by creating a lean distribution channel.

Cold storage for pharmaceuticals requires high-tech equipment to meet the needs of different drugs. Demand for large warehousing facilities is set to increase in the pharmaceutical industry. In 3-5 years, smaller developers are expected to concede their market share to bigger players thereby bringing about a structural shift. In the long run, warehousing will evolve into an organized segment, ready to compete in the same league as its global counterparts.

We also need to consider the fact that manufactured drugs have evolved to contain more high-value ingredients. They have a shorter shelf life and stricter temperature requirements for storage. Thus, the need for temperature control and monitoring through the entire supply chain has increased. Even drugs that are safe at room temperature may need protocols to avoid the risks associated with transportation at ambient temperatures. Logistics providers are beginning to receive more requests for Controlled Room Temperatures (CRT) which include the use of insulated containers, refrigerants, thermal blanketing and temperature-monitoring electronics.

For pharmaceutical shipments with temperature-controlled products that are handled multiple times from supplier to end user, quality assurance requires a combination of temperature controls, monitoring tools and coordinated actions throughout the supply chain. They face a number of challenges to achieve this. The biggest challenge within cold chain is to maintain the 2°C - 8°C range throughout the delivery cycle, which is the most common range for the pharmaceutical industry. As the pharmaceutical cold chain industry expands its reach, manufacturers, logistic providers and carriers will need to continue to coordinate actions to address the ongoing challenges of cold chain logistics.

A number of e-commerce players have also started entering the ‘Online pharma retail’ market in India. Ministry of Health and Family Welfare issued a draft policy for regulating this sector in June. It promises better clarity for the online medicine-delivery space. Hyper-local player are looking forward to enter this space, as it would help them do a better utilisation of their on-ground fleet.

The current pharmaceutical supply chain scenario in India is extremely complex. The presence of more than 55,000 retail pharmacies which are spread across India is one of the main reasons for this complex supply chain environment. Poor infrastructure and transport facility is a big obstacle for cold chain supply. About 1/3rd of the revenues generated by drug companies is spent on transportation.

The problem of poor supply chain management becomes even more severe when temperature sensitive drugs, such as, Polio vaccines,are required to be transported to remote areas. Hence, the presence of a proper supply chain management - which includes temperature controlled vehicles and warehouses - have become important for the pharmaceutical industry of India. Vaccines require the support of temperature controlled environments right from the point of their initial stage of production, up to their final distribution. This indicates the unexplored potential for both the domestic, as well as, international players who are present in the cold chain management system.

With an increase in awareness,companies as well as the government have started taking initiatives to storethe medicines in such a manner that the drug or vaccine reaches the target area without losing its efficiency. Industry estimates suggest that India’s pharma exports could reach heights of $20 billion by 2020. At the moment, the nation exports around $16 billion of pharmaceutical products to 200 countries. Upgrades to the country’s regulatory position have enabled this growth.

The logistics industry is one of the country's predominant trades which demands a spend of 13% of Good Distribution Practices (GDPs) towards its framework improvement. India's cold chain management in general, however, is in need of some organizing with lacking infrastructure and disjointed supply chains hindering the market's growth. It is noted that a logistics revolution could be on the horizon for India, where supply chain efficiency is going to be imperative to support this growth, and reduce the threat of bottlenecks.GDP will be beneficialwhen it comes toincreasing growth, as the country is taking efforts to reduce the gap between its volume and value levels.

Temperature management in cold chain is currently being done in various ways. The most basic process involves packing discreetdevices called temperature data loggers along with the shipment. They help to recordthe temperature of the product which can then be manually uploaded into a system. While some may have GPS capability, and the possibility of real-time tracking and reporting, a few can communicate via RFID to make it easy to gather information. Rapidly evolving software platforms are being developed for end-to-end tracking. Informatics will have a central role to play in efficient data generation and monitoring. Package-based temperature control solutions are also available. Some of them are passive and maintain pre-specified temperature conditions. While some are active and have the capability to heat or cool the product as is necessary. Thus, we can conclude that the pharmaceutical industry in India is in for some radical changes when it comes to cold chain management.

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