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Transporting Pharmaceuticals

Tony Seideman

"Handle With Care" takes on new meaning

They are some of the most precious, fragile and time-sensitive commodities the world has ever seen. They can cost thousands of dollars a gram and more--a price far greater than gold or quality diamonds. Yet their true worth is in what they accomplish.

Modern pharmaceuticals have transformed diseases that were once death sentences into treatable conditions. With them, people who were once crippled can lead productive lives, and they have created vast fortunes for manufacturers, distributors and the health care industry as a whole.

Pharmaceuticals also represent a tremendous challenge for the transportation industry. "Obviously, they have to be transported in a way that safeguards the integrity of the product," says Mark Grayson, a spokesman for PHRMA, the pharmaceutical industry trade group.

With pharmaceuticals, "safeguard" can have many different meanings. Some products are so fragile they have a lifetime of only days or weeks. Others can last far longer, but are so valuable that extraordinary security measures are absolutely essential. Either way, the products have a high price tag and the shippers virtually



demand special treatment.

"Health care products are one of the trickiest things we handle," says Tanya Osborne, tender management, Americas, for leading customs broker and freight forwarder, Panalpina. Often the most valuable products are the most difficult ones to deal with. For some anti-viral agents and drugs such as Interferon, near-absolute control of conditions is a must. "You have to have special handling and use either dry ice or be in a temperature controlled environment," Osborne says. Control includes tight monitoring and strict terms for handling. "It's all very time controlled, with checks along the way. The legal contracts that are drawn up have special terms," Osborne says.

In some cases, cargoes are so sensitive that they cannot be consolidated at all and must move as individual shipments, further increasing costs and difficulties. Some drug companies have ongoing relationships with integrated carriers to handle such products. "A lot of companies have arrangements with FedEx and others, so that if supplies run out, they can get goods out to people quickly," Grayson says.



Adding to the complexities of the situation is the fact that virtually all significant pharmaceuticals are surrounded by an incredibly complex web of national and international regulation that can leave all those in the manufacturing and supply chain vulnerable to tremendous fines in case of infraction.

Many pharmaceutical components and tools also use some of the most toxic compounds known to man. "We have to follow guidelines for chemical hazards," says one drug company executive. "If the material is not hazardous, we have to follow weight restrictions and restrictions on how the product needs to be stored."

Like any other business, pharmaceutical manufacturers calculate transportation modes they will use by a web of factors, including cost, speed, security and ability to maintain appropriate conditions. Drug companies will thus use whatever mode they can, depending on the products that are being shipped.

What seems to be really different with pharmaceuticals is the level of expertise that's needed. "Companies have to have experience with it and have to be approved to handle these commodities," says Panalpina staffer Tony Romano. Once drug companies find qualified service providers that understand their needs, almost anything goes.

"From a pharmaceutical company's perspective, there aren't any restrictions. Things can move in reefers, things can move in containers. They ship everything," says Erik Hoffer, CEO of Summerset, New Jersey-based CGM Security Solutions.

As in any other business, cost is a priority. That means that pharmaceutical companies try to ship by ocean, the most affordable alternative, wherever possible. And the possibility exists for many finished drugs and for the feedstock that is used to make many pharmaceuticals.

"The predominant amount of things we deal with are moved by sea," Hoffer says. "Some of it, not a big percentage, moves by air," he says. Goods that move by air usually have to do so. Speed is not just a matter of convenience in the drug

industry. If many goods aren't moved fast and at the right temperature, they can quickly lose their potency--and value.

At the same time, pharmaceutical companies are glad to use standard ocean freight shipping containers when they're moving their raw materials. They like to get a good deal as much as anyone else. Indeed, the price, volume weight, value equation involved in many pharmaceutical products present carriers and service providers with tremendous negotiating challenges.

Pharmaceuticals tend to fall into two basic categories. There are the "ethical" drugs, which are distributed by prescription, and then there are over the counter products. But one of the factors that most strongly shapes the shipment of pharmaceuticals by ocean is the fact that today's drug companies tend to be very diversified operations.

"Most of the pharmaceutical companies have lines of everything from baby powder to paper products. There are a lot of things that constitute pharmaceutical products, from baby powder to electronic devices," Hoffer says.

One of the ways drug companies protect their valuable wares is to mix them in with more conventional products. "Pharmaceutical companies will sometimes embed their pharmaceuticals in bulk shipments. You might have paper goods and prophylactics in there. Bristol-Meyers might load 50 products in a single container," says Hoffer.

Other pharmaceutical products that move by ocean would include the raw materials that go into making drugs. Moving components rather than finished products significantly eases both the regulatory and security burden on drug companies.

Aspirin, which can be both a raw material and a finished product, often moves in bulk, says John Hyatt, a vice president at The Irwin Brown Co., a New Orleans-based customs broker and freight forwarder. "Aspirin is transported in drums. We've handled them in bulk that way, along with other kinds of drugs that are ingredients that are going to have to be incorporated into other drugs," he says.

As the container industry's control over its refrigerated containers improves, the ocean industry may draw in more pharmaceuticals business. Any shift, however, will happen fairly slowly, Hoffer says. As a security expert whose monitors have tracked the failure of untold numbers of refrigerated containers, he firmly believes that remotely monitored containers are a thing of the future, not the present.

"The infrastructure doesn't exist yet," to provide drug companies with the kind of tracking information they need, Hoffer says.

Sidebar: Drug Industry Data Points

- According to IMS Health, a leading provider of health care data, drug expenditures increased 16.9 percent in 2001. Approximately 12 percentage points resulted from the increased use of existing medicines as well as the use of newer medicines, and only 4.9 percentage points of the remaining increase was a result of price increases.
- On average, replacing an older drug with a drug 15 years newer increases spending on drugs by \$18, but reduces overall health costs by \$111.



Source: "Increased Use of Medicines in Health Care," the Pharmaceutical Research and Manufacturers of America, www.phrma.org.

Chart: Biotechnology Industry Profile: U.S., Europe and Canada

Based on Private and Public Companies, 2001 Data (US\$ Billions)

Source: Burrill and Company

	U.S.	Europe	Canada
Sales/Revenue:	\$39.0	\$3.9	\$1.5
Annual R&D Spending:	\$12.3	\$2.5	\$0.68
Number of Companies:	2,000	1,570	339
Number of Employees:	157,000	61,104	7,000
Number of Public Companies:	356	105	83



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