

1 Market Perspective

In the last decade, the complexity of clinical supply chain logistics has increased dramatically due to the growing number of multinational clinical trials as well as the requirements to handle temperature-sensitive therapeutics. In order to manage this complexity and related challenges, pharmaceutical companies frequently turn to outsourcing to improve their supply chain's efficiency, reduce costs and access new technologies to reach new market more effectively.

Clinical supply chain logistics form a crucial component of clinical trial infrastructure. The proof of the effectiveness and efficiency of a company's clinical supply chain is directly related to the outcome of clinical trials. Cold chain needs and globalization are driving the clinical supply chain logistics sector as the pharmaceutical industry increasingly looks toward biologics to deliver the next blockbuster.

According to research firm Quintiles IMS, the global pharma industry is expected to grow at a 4% to 7% compound annual growth rate, expanding to approximately \$1.5 trillion by 2021.¹ Within that figure, according to Pharmaceutical Commerce, are products that require refrigerated cold chain transport, which is valued at about \$283 billion, rising about 70% over the same time frame, relative to non-refrigerated products, which are projected to rise by about 32%.²

The 2017 edition of *Pharmaceutical Commerce's Biopharma Cold Chain Sourcebook* estimates that managing the transportation of temperature-controlled products (refrigerated and frozen) will total \$13.4 billion in at the end of the year, growing at a 5% to 6% rate, representing a slight moderation of the 8% to 9% annual growth rate projected over the past several years. According to this research, the value of temperature-controlled pharmaceuticals being shipped is projected to grow 10.7% in 2017, "suggesting that the industry is learning how to manage cold chain costs more efficiently."

With data revealing that the growth of temperature-controlled products will likely continue at more than double the rate of non-temperature-controlled products, it is a good indicator that the cold chain business in biopharma will continue to grow steadily as well. Pharmaceutical Commerce, estimates 2017 non-cold chain pharma logistics costs at \$66.5 billion rising at a 4% to 5% growth rate, anticipating that by 2021, pharma cold chain logistics will be worth \$16.6 billion.

Trial initiations and the scale of trials will generate a logistics volume of around \$3.2 billion in 2017. Based on estimates of future trial volume, location and industry R&D spending, the sourcebook forecasts logistics spending growth at about 2% per year, to about \$3.4 billion in 2021.

2 Demographics

A total of 320 pharmaceutical and biotechnology professionals participated in the survey.³ Two demographic characteristics of respondents stand out. Asia accounts for the largest regional group (37%), followed by Europe (33%) and North America (30%). This all reflects the current trend of growing involvement of emerging pharma markets in global drug development – the Asia-Pacific region led by China and India, Latin America led by Brazil and Eastern Europe led by Russia.

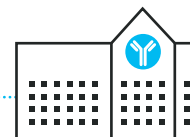
CLINICAL SUPPLY CHAIN LOGISTICS SURVEY RESPONDENTS PROFILE BY REGION



37% Asia

North America	30%
Europe	33%

CLINICAL SUPPLY CHAIN LOGISTICS SURVEY RESPONDENTS PROFILE BY CUSTOMER TYPE



52% Big Pharma/Biotech

Midsized Pharma/Biotech	18%
Small Pharma/Biotech	21%
Emerging Pharma/Biotech	3%
Central/Diagnostic/Preclinical Lab	3%
CRO	2%
CDMO	1%