



## ARTICLE

# The Renaissance of Healthcare Logistics Part 1: Introduction and Overview

## The renaissance of healthcare logistics

Healthcare logistics sits at the intersection of three durable forces: structural healthcare demand, rising therapy complexity and rapid digital enablement. Regulatory intensity, specialized infrastructure and high consequence of failure create defensible barriers to entry, while fragmentation creates consolidation opportunity and AI creates disruptive growth and value creation potential.

For strategics, the imperative is capability acquisition before valuation multiples and competitive intensity rise further. For private equity, healthcare logistics offers recurring revenue, margin durability and clear buy-and-build pathways. For founders, the market presents a generational opportunity to institutionalize and scale highly attractive, mission-critical businesses.

As healthcare logistics becomes not merely a delivery mechanism but a determinant of clinical success, the segment should be on the radar for strategics and investors across the ecosystem.

The next phase of value creation will be defined by those who recognize this shift and act on it decisively.

## Healthcare logistics at an inflection point

Healthcare represents approximately 10% of global gross domestic product with spending growing at 5%-plus annually in many markets.<sup>1</sup> It has long attracted investment due to its structural resilience, regulatory barriers and persistent inefficiencies. As urgency from the ballooning costs of an aging global population is paired with technological advances, many

segments of the healthcare market are seeing significant investment and transformation. Historically, healthcare logistics has been relatively overlooked by investors, but no longer.

The healthcare supply chain is an extremely demanding logistics environment. Precision, compliance and speed are nonnegotiable. Billions of dollars in life-critical products move daily across manufacturers, distributors, 3PLs (third-party logistics providers), freight forwarders and last-mile specialists, under strict service levels and regulatory oversight. A variety of factors have accelerated the need for maturation of the healthcare logistics ecosystem, including supply chain shocks from COVID-19; ongoing geopolitical volatility; margin pressure in pharmaceuticals, medical devices and diagnostics manufacturers; and the consolidation of healthcare providers into larger, more sophisticated customers.

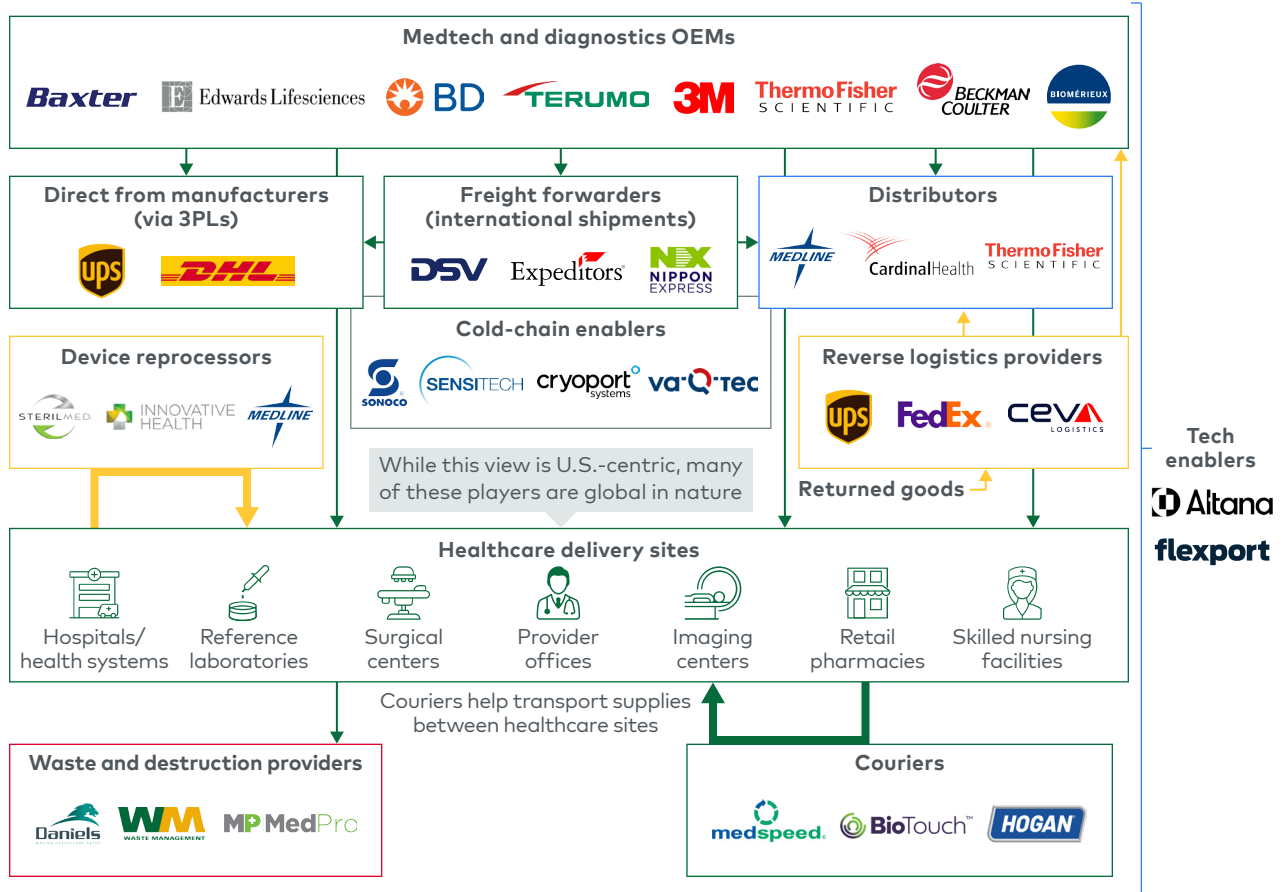
Furthermore, technology advances are unlocking new operating models to transform logistics from an asset-heavy service function into a data-driven, insight-led platform opportunity. Consequently, what was once viewed as a niche extension of general freight is increasingly recognized as a high-margin, defensible and strategically critical vertical.

This report is one of three total pieces co-authored by L.E.K. Consulting and Lincoln International, delves into why we believe the market is witnessing an inflection point in the evolution of the healthcare logistics market, which provides a unique opportunity for investment.

### **A mapping of the healthcare logistics ecosystem**

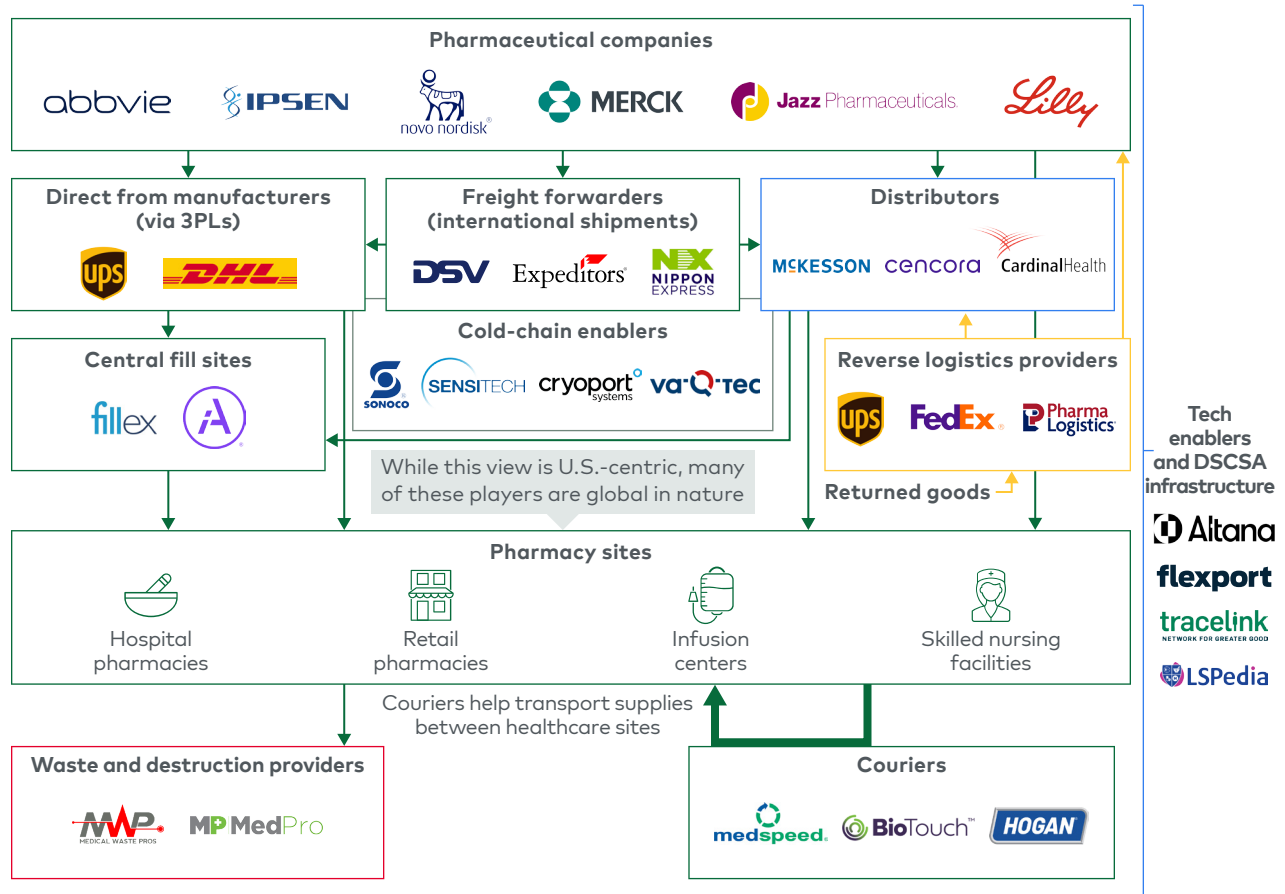
Healthcare logistics is not a single market but rather an interconnected set of market sub-segments with specialized operators managing the flow of products and information between manufacturers and providers (see Figures 1 and 2).

**Figure 1**  
Overview of medtech logistics ecosystem



Note: OEMs=original equipment manufacturers; 3PLs=third-party logistics providers  
Source: L.E.K. research and analysis

**Figure 2**  
Overview of pharmaceutical logistics ecosystem



Note: 3PLs=third-party logistics providers; DSCSA=Drug Supply Chain Security Act  
Source: L.E.K. research and analysis

Upstream, **pharmaceutical, medical device and diagnostics manufacturers** produce a wide variety of products under tightly regulated quality systems and a distributed global manufacturing footprint. Their labeling, serialization, temperature and service-level requirements cascade downstream, shaping the operational burden for all logistics partners.

Large **broadline logistics providers**, such as UPS, FedEx and DHL, play a critical role in moving bulk and parcel volumes from manufacturing plants and distribution centers to distributors and providers. Their value proposition centers on balancing speed, cost and temperature integrity at scale, often leveraging global networks and standardized operating models.

**Distributors** – both broadline and specialty – aggregate supply, manage inventory, provide last-mile replenishment and provide a growing list of supply chain services to hospitals, labs and nonacute sites of care. They act as buffers during shortages and differentiate through fill rates, cold-chain reliability, and integration into provider procurement and track-and-trace systems. In addition, distributors have increasingly begun to sell their own self-manufactured or

private-label products, especially in the medical devices segment. Distributors may work with **repackagers** like Safecor that take devices or medicines from manufacturers and repackage them to meet customer needs (e.g., unit dose prescriptions).

A growing layer of **cold-chain specialists** supports temperature-sensitive therapies through validated packaging, cryogenic handling, sensors and real-time condition monitoring. As biologics, cell and gene therapies, and personalized medicine expand, these capabilities are moving from premium add-ons to mission-critical infrastructure.

On the reverse-flow side of the ecosystem, **device reproprocessors** collect eligible single-use devices, reprocess and/or repair them to approved standards, and return them to use, reducing waste and total cost of care. Their operating models depend on reliable reverse logistics, documented chain of custody, and consistent provider adherence to segregation and collection protocols.

**Healthcare-specialized 3PLs and couriers** focus on orchestration rather than scale, managing warehousing, cross-dock operations and temperature-controlled last-mile delivery, including STAT, OR-direct and specimen movements. These providers win business based on standard operating procedure discipline, validated equipment, auditable chain of custody and time-definite performance for clinically critical moves.

A distinct but closely related role is played by **freight forwarders**, particularly for international product flows. These players coordinate cross-border transportation across air, ocean and ground, managing carrier selection, customs clearance, trade compliance and hand-offs across jurisdictions. In healthcare, forwarders differentiate through validated lane management, temperature-controlled air freight capabilities, regulatory expertise and the ability to dynamically reroute shipments during disruptions. These capabilities have become increasingly valuable amid geopolitical volatility and capacity constraints.

Finally, a set of **reverse logistics and waste management providers** handles returns, recalls, refurbishment, and compliant destruction of regulated or hazardous. These services create value by accelerating credit and replacement cycles, minimizing write-offs, and maintaining rigorous regulatory documentation — capabilities that providers prioritize for risk control and audit readiness.

Overlaying the physical logistics network is a growing layer of **software and data platforms** that support planning, visibility and execution across the healthcare supply chain. Technology-enabled players such as Altana, Flexport and other logistics software providers aggregate data across shippers, carriers and geographies to improve end-to-end visibility and predict disruptions. In healthcare-specific applications, these platforms are increasingly tailored to regulated

workflows, incorporating serialization data, temperature and condition monitoring, and compliance documentation. Their asset-light, data-centric models offer scalable growth potential and the opportunity to become system-of-record or system-of-insight layers across a fragmented logistics ecosystem.

Overlaying the physical network is an increasingly important digital layer: logistics software, data visibility platforms and AI-enabled orchestration tools. These asset-light players aggregate data across shippers and carriers, predict disruptions, and enable proactive intervention. As fragmentation persists across the ecosystem, these platforms are well positioned to become system-of-record or system-of-insight layers.

The result is a fragmented but high-barrier ecosystem where specialization, compliance credibility and data integration drive competitive advantage.

For more information, please [contact us](#).

## Endnote

<sup>1</sup>WEForum.org, "Health spending takes up 10% of the global economy: How can tech help reduce costs and improve lives?" <https://www.weforum.org/stories/2024/08/healthcare-costs-digital-tech/>

## About the Authors

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Ilya Trakhtenberg is a Managing Director in L.E.K. Consulting's Chicago office and leader of the firm's Healthcare Supply Chain practice. Ilya is a senior member of the MedTech practice and founded L.E.K.'s MedTech Launch Center of Excellence. He serves as a pragmatic, strategic adviser to corporate and private equity clients on accelerating business growth, developing and launching new products, and enabling growth execution (e.g., commercial excellence, supply chain optimization).



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Jock Fullmer is an Engagement Manager in L.E.K. Consulting's Chicago office and is aligned with the firm's MedTech & Healthcare Supply Chain practice. Jock's experience covers a range of mission-critical topics for players in the healthcare ecosystem including commercial/GTM strategy, growth strategy and M&A.

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Ryan McDermott is a senior officer in Lincoln International's Transportation & Logistics Group. He has extensive experience advising private equity firms, as well as public and privately held companies, on mergers and acquisitions. He specializes in healthcare and pharmaceutical logistics, specialty transportation, white-glove logistics, specialized freight forwarding & brokerage, and transportation and logistics infrastructure. He brings deep sector insight and transaction expertise to sharpen strategic positioning, clearly articulate differentiated value, and proactively address key diligence considerations to deliver strong outcomes for clients.



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Dirk Engelmann is a Managing Director in Lincoln International's Frankfurt office and serves as Europe and ROW Head of the firm's Transportation & Logistics sector. He advises corporate clients and private equity investors on domestic and cross-border mergers and acquisitions. He specializes in transportation and logistics transactions, with additional experience across the healthcare, engineering, consumer goods, and aviation sectors, much of which has been gained through executing complex international deals. Dirk oversees the full transaction lifecycle, from origination through execution, leveraging best practices and current market insights across valuation, due diligence, and process management.



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Gaurang Shastri is a Managing Director in Lincoln International's Chicago office and serves as Head of North America for the firm's Transportation & Logistics sector. He brings over 20 years of experience advising leading private equity firms, Fortune 500 companies, entrepreneurs, and private business owners on mergers and acquisitions. His experience spans a broad range of sub-sectors, including 3PL and 4PL services, aftermarket services, aviation services, e-commerce fulfillment, freight forwarding, intermodal and drayage, last mile logistics, marine services, pallet management, rail services, reverse logistics, and warehousing and distribution. Gaurang is also a frequent contributor to leading media outlets, including Bloomberg Radio, Inbound Logistics, and Transport Topics.



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