



WHITEPAPER 2021



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# Evolution of Healthcare Supply Chain and the Importance of Logistics Tech

# Content

## SECTION 01

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**Summary** 01

## SECTION 02

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**Drug shortages - An ongoing struggle** 02

## SECTION 03

---

**Impact of the pandemic - Where is healthcare supply chain management today** 04

## SECTION 04

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**Transforming the healthcare supply chain** 05

## SECTION 05

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**Logistics solutions for healthcare supply chain problems** 06





# 1. Summary

*The Covid-19 pandemic has served as a reminder that healthcare supply chains are essential and require immediate attention and action. An efficient supply chain can be potentially life-saving, and data visibility plays an important role in it.*

**Gartner.**

IN 2020

*the total healthcare supply chain cost to serve for a healthcare system averaged*

**37.3%**

A supply chain entails the smooth flow of goods from supplier to manufacturer to distributor to retailer to, finally, the consumer. While typical associations with these goods and services are made with food, groceries and other Fast Moving Consumer Goods (FMCG), pharmaceuticals, and medical devices are often overlooked. A strong healthcare sector is essential not just to the economy but for the well-being of society. This is why having a smooth-running healthcare supply chain is critical.

Changing markets have led many industries to evolve rapidly. But the strengthening of healthcare logistics has inevitably been put on the back burner as a result of which supply chains remain fragmented and weak. This lag in the advancement of healthcare supply chains has had serious implications for patients, putting their lives at risk, costing billions, and highlighting the sector's inability to take on new challenges.

Due to the shift to online platforms and changing customer expectations, supply chains have been under immense pressure to cut down their costs. But the recent pandemic, combined with climate events and worldwide political and economic shakedowns has made this plan laborious to implement. According to Gartner, in 2020, the total healthcare supply chain cost to serve for a healthcare system averaged 37.3% of the total cost of patient care. It is clear that there is a need for long-lasting solutions.

The Covid-19 pandemic has served as a reminder that healthcare supply chains are essential and require immediate attention and action. An efficient supply chain can be potentially life-saving, and data visibility plays an important role in it.

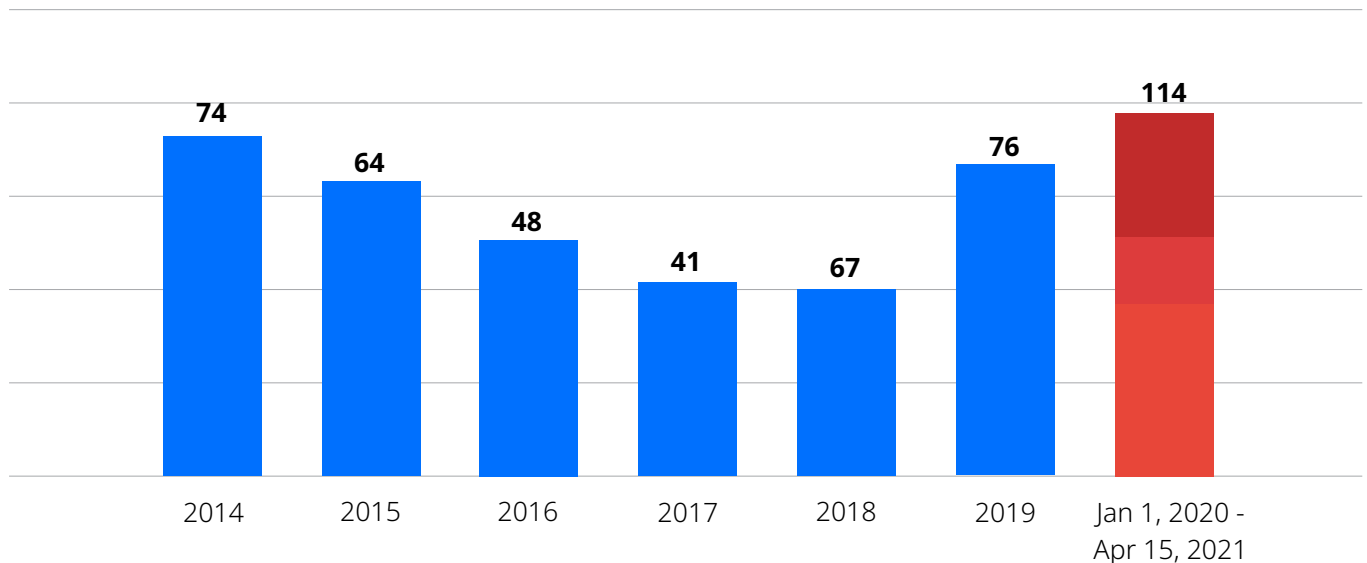
In this whitepaper, we will study the evolution of the supply chain of healthcare systems, the inherent cracks and missing links, the need of the hour and how logistics tech can come to the rescue to improve supply chain performance.



## 2. Drug shortages - An ongoing struggle

Long before the coronavirus shook the world, healthcare companies were already facing shortages. Healthcare supply networks are increasingly dependent on lowest-cost suppliers and maintaining minimal inventory. Disruptions before the pandemic arrived in the form of geopolitical events and climate-related disasters, the most recent being the US-China trade war and Brexit.

### Number of ongoing US drug shortages at the end of year, 2014-2021

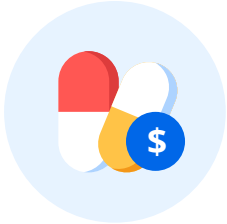


Source: US Food and Drug Administration drug shortages database

The Food and Drug Administration (FDA) reported [114 drug shortages in April 2021](#), out of which 56 were caused by an increase in demand, 13 by active pharmaceutical ingredient (API) shortages, and seven because of manufacturing or shipping delays. To ensure the safety of customers, manufacturing continuity has been vital. And to ensure manufacturing, supply chain resilience has been vital.



According to the *FDA's 2019 study*, there were three root causes for drug shortages in the United States:



### **Less profitable drugs are not incentivized**

Businesses did not have enough motivation to enter the market for older prescription drugs due to high price competition and investment requirements, uncertain revenue and low returns.



### **Mature quality management systems are not recognised or rewarded**

While all manufacturers have to adhere to the Current Good Manufacturing Practices (CGMPs), those who follow mature quality management systems take a step further in terms of product quality by making effective use of technology and statistical process control. The market does not reward manufacturers with price premiums for mature quality management and it does not penalize or discourage those who refuse to modernize with the times either. With no proper check on product quality, manufacturers compete to keep the prices down, investing as little as possible in the product, which causes disruptions in the supply chains and leads to shortages.



### **Slow recovery post-disruption due to logistical and regulatory challenges**

As the drug supply chains become longer, they have also turned more complex and fragmented. According to the U.S. Department of Commerce 2011 and Van Den Bos 2009, this change has been made visible in the last 20 years as more companies have located more production overseas. Reports from Kuehn in 2018 placed the responsibility on a growing number of contract manufacturers.

In the usual scenario, drug shortage can be dealt with by taking the usual route of increasing production, but here they are faced with logistical and regulatory challenges. A change in production requires several permissions and approvals. For example, if a new manufacturer wishes to enter the U.S. market and introduce a product that solves the shortage problem, they must first file an application to get FDA approval.



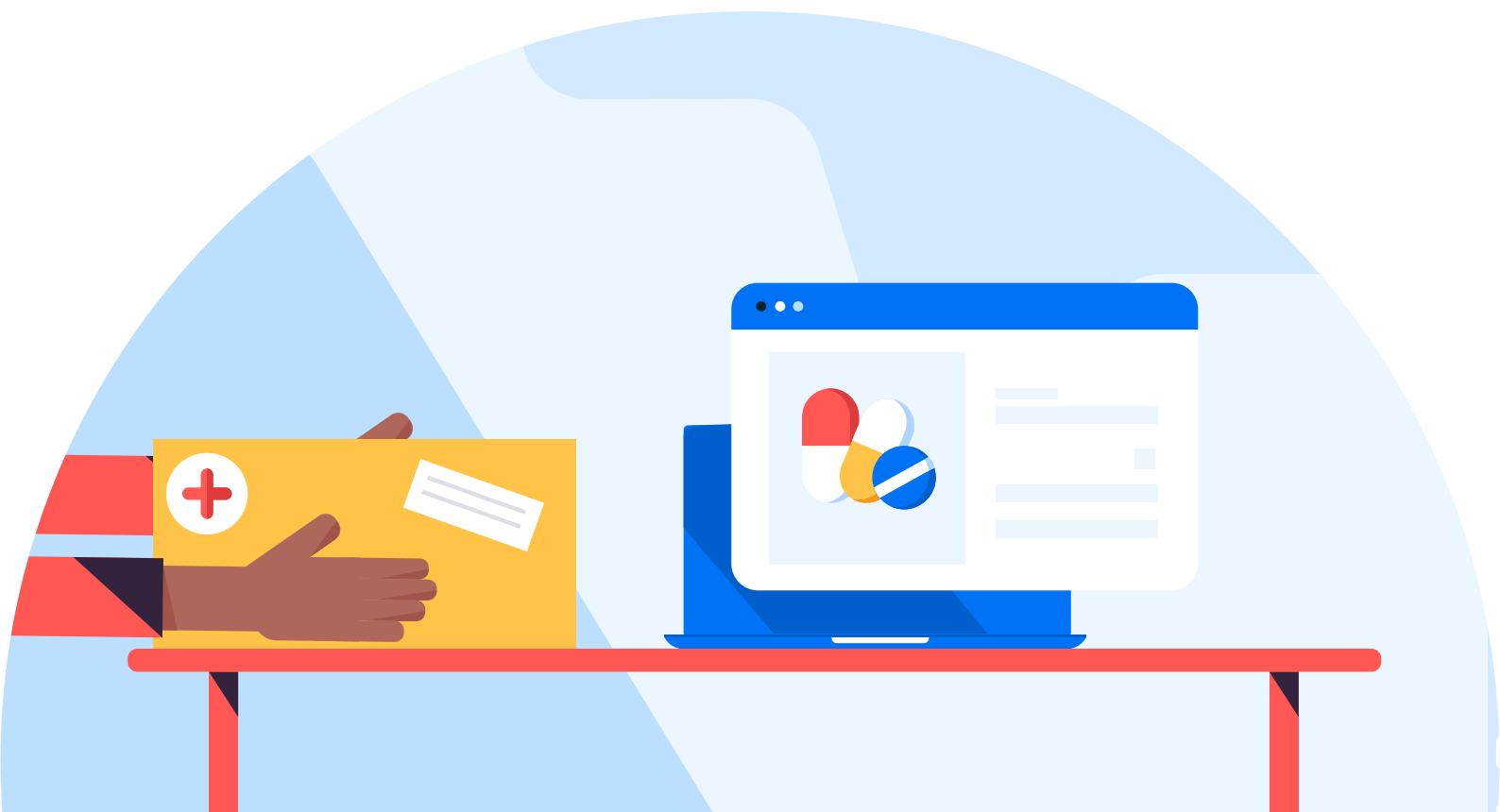
### 3. Impact of the pandemic - Where is healthcare supply chain management today

The pandemic came with a slew of disruptions over the last decade and left the healthcare system in a crisis. No country, business or supply chain has remained unaffected by the coronavirus and the biggest hit was taken by healthcare. Healthcare workers were on their feet round the clock tending to patients beyond regular capacity, having no rooms available and essential medicines out of stock.

Despite disaster planning and stockpiling, there was a shortage in personal protective equipment (PPE) and testing kits. The system, on the brink of collapse, revealed several gaping holes in healthcare supply chains all over the world. While natural disasters, labour disputes, supplier bankruptcy, cyberattacks were regular disruptors, nothing came close to the enormity of the coronavirus. No such disruptor brought with it this level of uncertainty as well.

Pharma supply chains have been strained by repeated government interventions. A good example of this is the ban on the export of 26 drugs including paracetamol, erythromycin, clindamycin, metronidazole, as well as the antiviral acyclovir. This was done to safeguard local drug supplies.

Demand, along with supply, was also met with disruptions. Businesses all over the world have tried to bring back stability by conducting risk assessments and carrying out business continuity plans. Several manufacturers broadened their range of products as well—*distillers were making hand sanitizers and apparel manufacturers were creating PPE kits*. Nearshoring, which is the outsourcing of certain services to a third party provider with closer geographical proximity, became popular. Businesses worked on making their supply chain more responsive and resilient.





## 4. Transforming the healthcare supply chain

Before the steps taken to improve the robustness of healthcare supply chains are explored, two important questions in terms of product criticality must be asked:

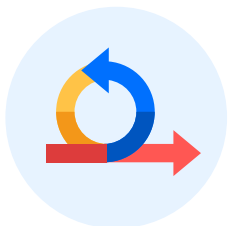
### How important is the product to the patient

Knowing the extent to which a product is crucial to the life of the patient is essential. It is also vital to know if there are any suitable alternatives available for the product in question. In the case of a healthcare crisis, how severe would the product shortage be?

### How important is the product to the business

Knowing the extent to which the product is critical to the health and viability of a business is good to know as well. Which products are vital to strategic markets and priority customers? Which ones bring in the most profit and which can help bring in long-term growth?

This activity can help the business align with the product and make room for supply chain continuity. It is also the first step towards building resilient supply chains. The next step would be to do risk assessments that can reduce the risk exposure and increase resilience capabilities. The strategies for the same are as follows:



#### Bring in agility

Redundancy is the greatest enemy of growth and so, manufacturing companies can introduce flexible production lines with greater capacity and makeshift models that can respond quickly to challenges. Market shortages can be met with backup sources for key materials, staff can be made available for night shifts if the need arises and the facilities can have both temporary and permanent staff.



#### Be ready to adapt

Businesses can shift production from one part of the world to another when the need arises. This modular approach means combining smaller parts sourced from different places to create the complete product. This saves time and reduces manufacturing and production costs considerably. Increasing production line digitization and automation are good practices to help businesses make rapid changes as and when the need arises.



### **Predict future scenarios**

Business leaders are increasingly adopting tools for better visibility throughout the supply chain to meet the challenges head on and smooth out the kinks as soon as possible. Control tower technology and artificial intelligence help with this. There is also room to run all possible scenarios virtually to determine the course of action in case the same plays out in real life.



### **Empower local organizations**

A company's problem solving capabilities must be at their best not just at the top level but at every step of the workforce hierarchy. By empowering local organizations, crises can be managed better by working together as a team.

## **5. Logistics solutions for healthcare supply chain problems**

By opting for a third-party logistics solutions provider like [Locus](#), pharmaceutical and med-tech companies can ensure that their product reaches the patient in the quickest, most efficient way possible. A sound and agile supply chain management system is responsible for ensuring the smooth running of the various legs of a supply chain. Locus can help the healthcare supply chain in the following ways:

### **Create advanced dispatch plans and track orders in real-time**

Traditional methods don't make the cut when it comes to delivering hundreds and thousands of goods in a time crunch that can potentially save lives. [DispatchIQ](#) can help with the intelligent clubbing of orders so that daily dispatches can be planned with ease. Businesses can also opt for Locus' geocoder which simplifies complex addresses in no time and puts them on a map so the order can reach the customer as quickly as possible. An advanced fleet tracking system and insights are provided by [TrackIQ](#), so both the customer and the company know the Expected Time of Delivery (ETA). Locus On the Road App (LOTR) also helps delivery executives with route schedules and navigation.





## Make smarter supply chain decisions and plan for the future

While daily dispatches solve many supply chain problems on a regular basis, Locus' solutions for the healthcare industry can also be sought for long-term planning. *FieldIQ* can be used to improve resource utilization and increase the operational efficiency of the healthcare supply chain. It can help to create Optimized Permanent Journey Plans (PJP) and Permanent Dispatch Plans (PDP), both of which can be customized to suit the businesses' particular needs.

An intelligent network optimization and design engine that uses advanced deep data principles to carry out data sanitization is *Locus' NodeIQ*. It also provides consistent data sets that are fit for analysis and securing revenue-generating insights. Its most popular feature is creating a 'digital twin' of the supply chain with a geospatial visual simulation that can run all possible alternative scenarios and help future-proof your supply chain.

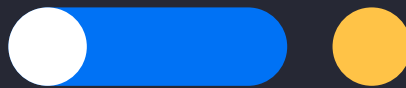
Covid-19 has been a wake-up call for the healthcare industry. Resilient supply chain networks will be vital in navigating shifts in markets and changes in demand. Adopting pragmatic decision-making processes, improving data visibility, and responding to disruptions quickly and efficiently is the way forward.

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*Locus is a deep-tech SaaS platform that uses machine learning and proprietary algorithms to automate supply chain decisions. Its smart logistics solutions enable enterprises to enhance operational efficiency, reign in costs, streamline the customer experience, and provide end-to-end visibility.*



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