



# COVID-19 rapid response: Secure supply chain

July 15, 2020

Even as companies worldwide focus on responding in real-time to the uncertainties created by COVID-19, leaders understand the need to prepare for ongoing disruption over the months and years to come.



To help companies be ready to compete in the new reality, KPMG is bringing together our knowledge of business and industry, applying creative thinking, and using today's emerging technologies to specifically respond to fast-moving immediate challenges, as well as those that are potentially systemic, brought forth by COVID-19.

Fundamental flaws in health care supply chains have been brought into sharp relief by the urgent need for large quantities of personal protective equipment (PPE) and other medical supplies and treatments nationwide.

Hospitals and other providers faced high prices for limited supplies of PPE in particular, along with demands for upfront payment from suppliers whose product specifications they could not validate. The depletion of surplus PPE, readily available in the past, exacerbated the fragility of many supply chains. When a fast, agile response was required, manufacturers, distributors, and providers struggled to churn out products in quantity, coordinate their delivery, and prove their authenticity. All the while, communication among the various parties was impeded by an unprecedented volume of data being exchanged across disparate systems.

The need for PPE and then COVID-19 testing equipment revealed systemic failures that are not unique to these supply chains. Similar failures could endanger the movement of vaccines, treatments or other essential products.

### **Integrating and connecting the healthcare ecosystem with trusted infrastructure can help deliver critical, actionable insights**

In the wake of these problems, and to prevent recurrence, leaders across the industry recognize the need to overhaul their supply chains and stabilize them for the future. They need digital capabilities they can trust to (1) verify that products are authentic and meet approved specifications, (2) identify who handled each product and how, and (3) indicate where products are at any given point during shipment.

Adjusting to changing needs requires an adaptive and precision-driven supply chain that enables medical supplies, vaccines, and other essentials to be made available on short notice, in the right location, and at the right time. Any potential for counterfeit drugs, product diversion, improperly handled or stored medications, or entry of products from illegitimate sources into these supply chains must also be controlled for.

### **Our perspective: The need for a digitally secure supply chain**

Based on a collaboration with IBM, Merck, and Walmart, KPMG has developed digital capabilities to enable a more resilient, secure healthcare supply chain to respond to COVID-19 and going forward.

The KPMG secure supply chain capabilities bring together blockchain-based accelerators that allow participants (patients, providers, suppliers, and regulators) to forecast demand, locate specific quantities of physical goods, and take preventative actions against shortages. These capabilities facilitate rapid deployment of a shared, secure view of data related to the movement of goods through the supply chain to enhance transparency and help reduce the risk of illegitimate products and bad actors.

At each stage of the journey across a pharmaceutical supply chain, the KPMG blockchain-based capabilities enable the tracing of individual items, such as pills or gloves, in addition to monitoring the conditions under which they were transported. These capabilities can be integrated with IoT sensors maintained in trucks or even boxes to validate, for example, that medications have been kept at the required temperature.

Blockchain is designed to provide the transparent, connective tissue among the events related to the movement of a product, such that any participant in a supply chain can trust the quality of the product, be assured that customers are getting what they ordered, and have confidence that what arrives is authentic.

### **Benefits of a digitally secure supply chain**

- Visibility of product movement across the supply chain, from manufacturer to distributor to patient or provider
- Verification of authenticity at every change of possession
- Enhanced response in case of recalls based on supply chain event history
- Additional analytics can support inventory optimization or proactive re-routing on an as-needed basis



**Connecting the supplier community with the broader healthcare ecosystem is the first step in creating a Digital Trust Infrastructure (DTI) for PPE**

Immediate term DTI marketplace capabilities

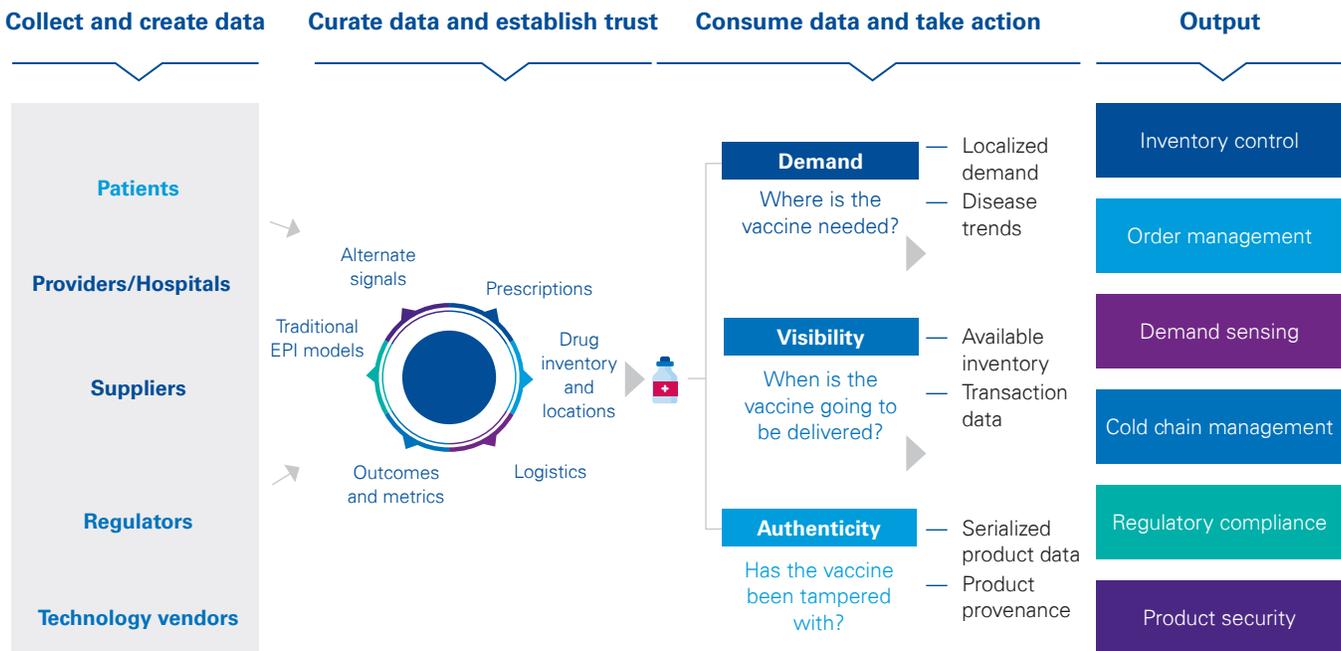
Future capabilities



\*Once defined, the DTI marketplace can match suppliers and validate products based on FDA or other entity guidelines for design specifications (e.g., fabrics, processes), product usage, and testing specifications

**The need for a new Digital Trust Infrastructure (DTI)**

A Blockchain based digital trust infrastructure will enable participants (patients, providers, suppliers and regulators) to analyze demand forecasts, locate physical goods and take corrective action to prevent shortages and optimize access





**Casestudy: KPMG secure supply chain capabilities help clients safeguard distribution of goods across a network**

Along with IBM, Merck and Walmart in a pilot for the FDA, KPMG developed capabilities and blockchain-based accelerators to facilitate the track and trace of product movement and verification of authenticity of prescription drugs, demonstrating compliance with 2023 DSCSA requirements. These capabilities can enable organizations to record a common view of product traceability and support increased transparency to the product-recall notification process through alerts and shipment reports.

The FDA pilot was developed to track vaccine distribution across a network of trading partners to enable trust in the transactions, data, and identities of the supply chain participants.

**Potential benefits of the secure supply chain accelerator:**



**Traceability of product between trading partners:** Track and trace a serialized product at the unit level or pallet from the point of commissioning to the point of dispense to the patient



**Recall notifications and alerts:** Quickly alert trading partners to identify and remove drugs that are spoiled, damaged or subject to a recall



**Verify authenticity:** Complete verification requests to inquire about a drug's validity to prevent counterfeit medication from entering the supply chain



**Market visibility:** Aggregate view of all inventory available in market to prevent shortage and improve operations planning.

**Why KPMG**

KPMG has extensive experience across the health care and life sciences industry as well as in digital transformation, supply chain, and operations. Our secure, traceable, auditable digital trust infrastructure is embedded with blockchain-based capabilities and accelerators to enable health care organizations to secure their supply chains, in response to COVID-19 and in future. Let's discuss how we can help you.

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