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Building supply chain assurance:
Balancing opportunities and recognizing risks

COVID-19 swiftly elevated the supply chain's influence on overall health system operations; it also exposed considerable vulnerability. The pandemic creates impetus for long overdue steps to strengthen supply assurance.

Lessons learned from the challenges hospitals faced stabilizing their supply chain as COVID-19 spread across the U.S. help make the case for adapting and evolving it moving forward. Although most supply chain leaders agree there was no way to fully prepare for the ongoing public health crisis, some point to safeguards that helped in individual markets: existing stockpiles to tap into, a centralized structure that prevented hospitals within the same system from competing for supplies, and regional cooperative relationships.

Building supply chain assurance will require investment at a time when many systems face significant financial shortfalls due to the pandemic. Only with a more strategic, cost-effective approach, however, will systems be sufficiently prepared to handle future interruptions.

Looking for opportunities to reinvent traditional approaches while recognizing potential risks lays the necessary foundation, which encompasses three categories: sourcing and partnerships, leadership alignment and technology investment.

Each strategy requires some level of financial risk, as quantified on next page ($ = low risk, $$$= high risk).

Sourcing and partnerships

Build supply assurance	Recognize risks	Look to mitigate issues
Establish multivendor sourcing options: $$	• Increased variation in quality that could potentially impact outcomes • Potential rise in costs (exclusive contracts yield better pricing)	• Seek suppliers that promote transparency and savings • Draft secondary contracts purely as back-up • Include contingency plans in primary supplier contracts • Seek single suppliers with multiple production locations • Do not compromise on quality of supplies and goods
Pursue alternative sourcing options • Partner with local manufacturers willing to repurpose production lines in times of crisis: $$ • Solicit donations: $	• High investment and risk from moving beyond the system's core business	• Consider working with partners on collective programs (group purchasing organizations [GPOs], suppliers, distributors)
Appropriately balance just-in-time inventory with warehousing safety stock of essential supplies • Self-stored: $$ • Regional (multisystem): $ • Via suppliers or GPO: $	• Stockpiling too little or too much	• Create first-in/first-out policies • Flexibly dial up/down from 90-day supply to prevent expired products • Work with distributors that have supply assurance programs
Partner with GPO to understand and vet potential suppliers and associated risks and have a built-in support structure to navigate uncharted territory (e.g., customs brokering): $	• Delayed response times when speed is most crucial	• Partner with those that have consistently demonstrated value and trust

Health systems have traditionally taken a transactional approach to the supply chain. Contracts with suppliers were exclusive and focused on efficiency and price. System leaders have had little visibility into how and from where their supplies were procured; they have relied on just-in-time inventory to keep facilities stocked. Taking a traditional approach in today's global market presents a level of risk greater than applying the strategies here.

Sourcing and partnerships case examples

To avoid introducing potential quality variation in its supplies, NewYork-Presbyterian is prioritizing suppliers with geographic and production redundancies incorporated into their operations rather than pursuing a diverse set of suppliers.

Through Novaplus Enhanced Supply, Vizient requires suppliers to provide a three- to six-month back-up inventory of essential products to mitigate supply disruption. One example of success: the program has stocked warehouses with 100 million units of the sedative Propofol, part of the anesthetic and sedation class of drugs necessary to intubate and maintain patients on ventilators.

Leadership alignment

Prior to the pandemic, many systems' leadership teams frequently looked first to supply chain for cost-reduction opportunities. Supply chain teams' role in ensuring care continuity was underestimated or thwarted by a siloed structure that did not align clinical and supply chain functions. Uneven conservation practices of crucial disposable supplies and inconsistent substitution protocols during COVID-19 surges underscored the importance of input into clinical care protocols. Difficulties redistributing supplies across service lines further showed the need for supply chain to help connect clinical areas. ($ = low risk, $$$= high risk)

Build supply assurance	Recognize risks	Look to mitigate issues
Leverage clinical knowledge to identify strategic substitutions, redundancies and opportunities to extend critical supplies across the continuum of care: $$	• Loss of service line, department and facility autonomy • Stretching the existing skill sets of current supply chain leaders	• Forge a structure that eliminates silos • Share best practices
Heighten awareness of clinically appropriate personal protective equipment (PPE) use and opportunities to sanitize and reuse supplies: $	• Cost required	• Streamline sanitization • Stock a mix of reusable and disposable products • Prioritize education on best practices
Strengthen partnership between supply chain and clinical leadership at the service line level: $	• Insufficient visibility into system operations by supply chain leaders to feel comfortable weighing in on enterprise decisions for issues like reactivation	• Prioritize cross-training and collaboration of supply chain-clinical workforces

Leadership alignment case examples

When the supply of N95s became limited and expensive to procure, supply chain and clinical leaders at Houston Methodist identified powered air purifying respirators as viable, cost-efficient alternatives that were clinically appropriate.

Ability to tap inventory across departments positioned numerous systems to avert a shortage of ventilator tubing extensions created to enable clinical teams to adjust pumps outside patient rooms, helping to conserve PPE.

Technology investment

The cost, quality and safety breakdowns that occurred during initial COVID-19 surge periods resulted from a culture built on trust without transparency. With no line of sight into supplier vulnerabilities, supply chain leaders were caught unprepared when suppliers were unable to meet demands. In addition, outdated internal supply management tools made the job of ordering, sharing and distributing supplies across the enterprise nearly impossible to manage in crisis mode. Trusting relationships were key to supply chain management in the past, but today supply chain assurance must be built on the premise of "trust but verify," which relies on the availability and quality of data. ($ = low risk, $$$= high risk)

Build supply assurance	Recognize risks	Look to mitigate issues
Develop systemwide supply chain command center that enables inventory to be managed enterprise wide: $$ • Activate predictive analytics to determine future supply needs/ risks: $$ - PPE burn rate calculator - Supply/device utilization forecasts • Adopt analytics platform that brings transparency to external supply chain, including supplier vulnerabilities and pedigree data: $	• Cost of implementation and management of new technology platforms	• Seek partnership opportunities • Fully vet new software solutions with a limited number of high-risk products to verify transparency

Technology investment case examples

Vizient and One Network Enterprises offer a two-sided marketplace that enables healthcare organizations to collaborate more effectively with suppliers in several areas: supply utilization forecasts, inventory availability and goods consumption. The platform facilitates the tracking of supply delivery timeliness and order completion, stock-out risks, and location-based alternatives in times of disruption.

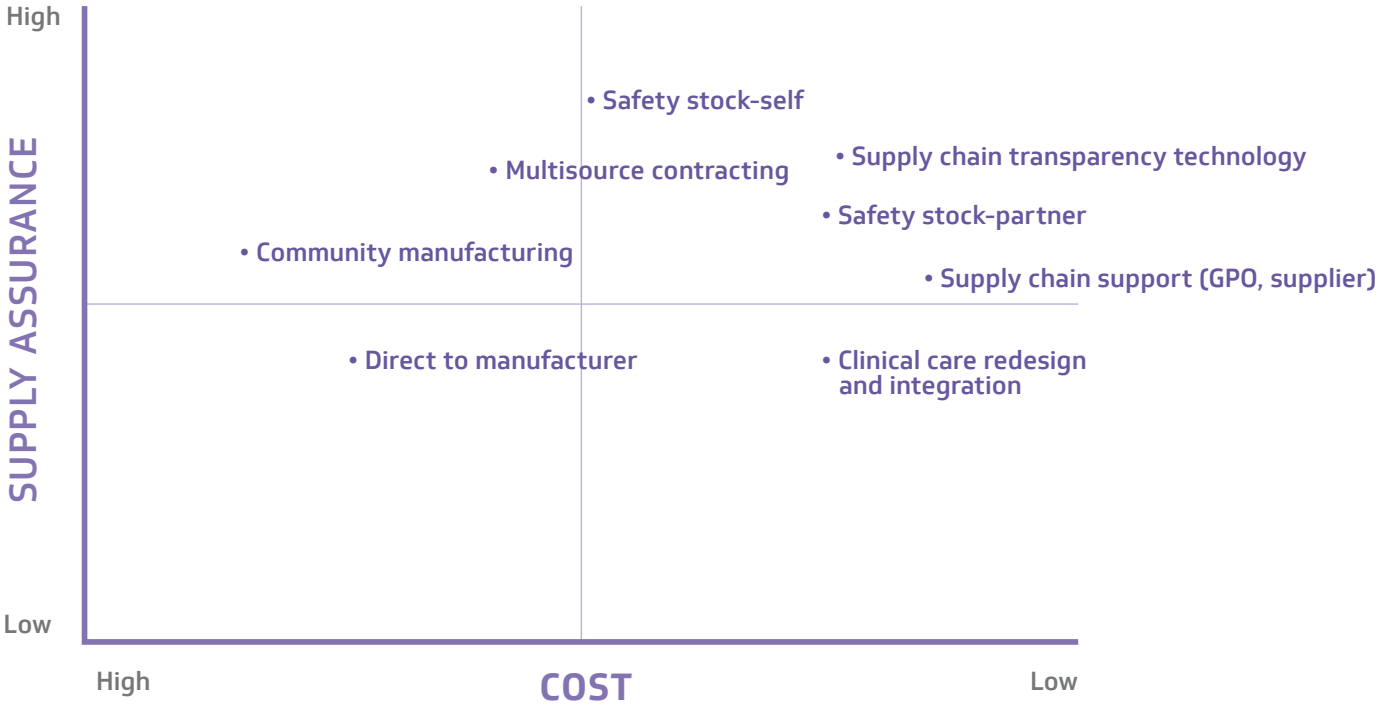
To maintain an adequate supply of PPE during the pandemic, Northwell Health in New York relied on Rapid Supplier Connect, a blockchain network built by IBM to help connect health systems with nontraditional vendors. The network provides visibility and vetting of businesses that repurposed production lines (e.g., automotive companies manufacturing ventilators) to provide health systems with needed supplies.[1]

Balancing supply assurance and cost

As health systems raced to stabilize operations during COVID-19 surge periods, they had no choice but to accept the exorbitant pricing that suppliers demanded. For example, the price of N95 masks soared from $0.15 per mask to $15 per mask and is unlikely to quickly fall back to pre-pandemic levels.

Building supply assurance at a time when prices remain elevated will increase financial risk. Leaders must weigh expense versus impact of the various strategies they choose to deploy. Disciplined management will then ensure an appropriate return for higher-priced alternative sourcing options, added inventory and incremental resources.

Cost versus impact of strategic sourcing options



Key considerations

Strengthening supply assurance should start with an assessment of current practices.

STEP 1: Review internal crisis preparedness plan

- Do you have a multidisciplinary crisis response team/plan in place?
  - Process to identify high-risk/low-resiliency supplies
  - Alternative sourcing identified
  - Contacts for local and federal disaster response agencies
- Do you have collaborative relationships/agreements in place with local manufacturers and neighboring health systems?

STEP 2: Review external crisis preparedness plans

- How have your suppliers addressed their own resiliency? What contingencies do they have in place in the event of a disruption? How transparent have they been with those plans?
- Do you conduct regular business reviews with suppliers? Can the frequency of those meetings be increased in times of crisis?

STEP 3: Evaluate inventory management strategies

- Do you have mechanisms in place to track availability and use of critical supplies?
- Do you have a back-up inventory of critical supplies?
- Do you have critical supply conservation protocols that can be activated?

Metrics

- The Joint Commission on Accreditation of Healthcare Organizations compliance 96 hours of clinically critical items available
- Days on hand of inventory
- Percent of items on contract
- Internal fill rate
- Fill rates from distributor
- Burn rate of PPE
- PPE reserves
- Turn rates

Supply assurance resources

Vizient PPE Conservation Impact Calculator

Vizient Risk Mitigation Assessment: contact *supplychain@vizientinc.com* for more information

For questions or to learn more contact us at ***viewpoints@vizientinc.com***.

References

1 Landi H. IBM rolls out blockchain network to address supply-chain issues caused by COVID-19. April 27, 2020. Accessed August 25, 2022. https://www.fiercehealthcare.com/tech/ibm-rolls-out-blockchain-network-to-match-healthcare-organizations-non-traditional-suppliers#:~:text=Health%20Tech-,IBM%20rolls%20out%20blockchain%20network%20to%20address%20supply,issues%20caused%20by%20COVID%2D19&text=Tech%20giant%20IBM%20is%20leveraging,shortages%20due%20to%20COVID%2D19.

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