

Sg2 EXPERT INSIGHT

Building Supply Chain Resiliency

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 heighten supply chain's resiliency.

Lessons learned from the challenges hospitals faced stabilizing their supply chain as COVID-19 spread across the US 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, regional cooperative relationships.

Supply chain resiliency will require investment at a time when many systems face significant financial shortfalls due to the outbreak. 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; that encompasses 3 categories: sourcing and partnerships, leadership alignment and technology investment. Each strategy requires some level of financial risk, as quantified below (\$ = low risk, \$\$\$ = high risk).

SOURCING AND PARTNERSHIPS

| Reinvent for Resiliency | Recognize Risks | Look to Mitigate Issues |
|--|--|--|
| Establish multivendor sourcing options: \$\$ | <ul style="list-style-type: none">• Increased variation in quality that could potentially impact outcomes• Potential rise in costs (exclusive contracts yield better pricing) | <ul style="list-style-type: none">• 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 |

| Reinvent for Resiliency | Recognize Risks | Look to Mitigate Issues |
|---|--|--|
| <p>Pursue alternative sourcing options</p> <ul style="list-style-type: none"> • Partner with local manufacturers willing to repurpose production lines in times of crisis: \$\$ • Solicit donations: \$ | <ul style="list-style-type: none"> • High investment and risk from moving beyond the system's core business | <ul style="list-style-type: none"> • Consider working with partners on collective programs (GPOs, suppliers, distributors) |
| <p>Appropriately balance just-in-time inventory with warehousing safety stock of essential supplies</p> <ul style="list-style-type: none"> • Self-stored: \$\$ • Regional (multisystem): \$ • Via suppliers or GPO: \$ | <ul style="list-style-type: none"> • Stockpiling too little or too much | <ul style="list-style-type: none"> • 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 |
| <p>Partner with GPO to understand and vet potential suppliers and associated risks and have a built-in support structure to navigate uncharted territory (eg. customs brokering): \$</p> | <ul style="list-style-type: none"> • Delayed response times when speed is most crucial | <ul style="list-style-type: none"> • 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.

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.

Advocate Aurora Health is partnering to buy a minority stake in Prestige Ameritech, the largest domestic manufacturer of N95 respirators and surgical masks to reduce reliance on foreign suppliers in any future crisis.

Vizient's newly created Novaplus Enhanced Supply Program requires suppliers to provide a 3- to 6-month back-up inventory of essential products to mitigate supply disruption. One example of success: the program has stocked warehouses with 676,000 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)

| Reinvent for Resiliency | Recognize Risks | Look to Mitigate Issues |
|---|--|--|
| Leverage clinical knowledge to identify strategic substitutions, redundancies and opportunities to extend critical supplies across the System of CARE: \$\$ | <ul style="list-style-type: none"> • Loss of service line, department and facility autonomy • Stretching the existing skill sets of current supply chain leaders | <ul style="list-style-type: none"> • Forge a structure that eliminates silos • Share best practices |
| Heighten awareness of clinically appropriate PPE use and opportunities to sanitize and reuse supplies: \$ | <ul style="list-style-type: none"> • Cost required | <ul style="list-style-type: none"> • 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: \$ | <ul style="list-style-type: none"> • Insufficient visibility into system operations by supply chain leaders to feel comfortable weighing in on enterprise decisions on issues like reactivation | <ul style="list-style-type: none"> • Prioritize cross-training and collaboration of supply chain/clinical workforces |

CASE EXAMPLES

Different preferred sets of SKUs across hospitals and service lines within **MaineHealth** complicated supply ordering and distribution during the COVID-19 crisis. Plans to standardize moving forward will facilitate more efficient sharing and distribution.

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 a resilient supply chain will be built on the premise of “trust but verify,” which relies on the availability and quality of data. (\$ = low risk, \$\$\$= high risk)

| Reinvent for Resiliency | Recognize Risks | Look to Mitigate Issues |
|---|---|---|
| <ul style="list-style-type: none"> • Develop system-wide supply chain command center that enables inventory to be managed enterprise wide: \$\$ • Activate predictive analytics to determine future supply needs/risks: \$\$ <ul style="list-style-type: none"> – PPE burn rate calculator – Supply/device utilization forecasts • Adopt analytics platform that brings transparency to external supply chain, including supplier vulnerabilities: \$ | <ul style="list-style-type: none"> • Cost of implementation and management of new tech platforms | <ul style="list-style-type: none"> • Seek partnership opportunities • Fully vet new software solutions with a limited number of high-risk products to verify transparency |

CASE EXAMPLES: \$\$

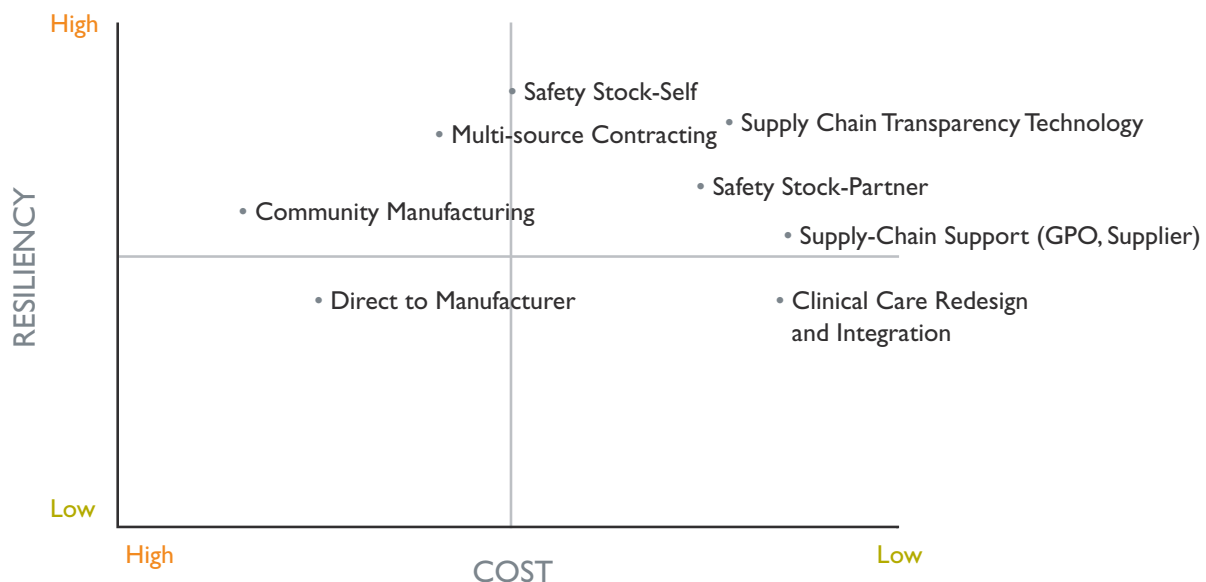
Vizient and One Network Enterprises offer a 2-sided marketplace that enables health care organizations to collaborate more effectively with suppliers in several areas: supply utilization forecasts, inventory availability and goods consumption. The platform facilitates the tracking of supply delivery 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 (eg, automotive companies manufacturing ventilators) to provide health systems with needed supplies.

BALANCING SUPPLY CHAIN RESILIENCY 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 15 cents per mask to \$15 per mask and is unlikely to quickly fall back to pre-COVID-19 levels. Building resiliency into the supply chain at a time when prices remain elevated will increase financial risk. Leaders must weigh expense vs 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 VS IMPACT OF STRATEGIC SOURCING OPTIONS



KEY CONSIDERATIONS

Working toward a resilient supply chain 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?

KEY METRICS

- JCAHO compliance 96 hours of clinically critical items available
 - Days on hand of inventory
 - % of items on contract
 - Internal fill rate
 - Cost of risk
 - Fill rates from distributor
 - Burn rate of PPE
 - PPE reserves
 - Turn rates
-

GPO = group purchasing organization; JCAHO = The Joint Commission on Accreditation of Healthcare Organizations; PPE = personal protective equipment.
Sources: Lagasse J. Advocate Aurora Health partners with Premier to ramp up domestic PPE production. *Healthcare Finance*. May 26, 2020; Landi H. IBM rolls out blockchain network to address supply-chain issues caused by COVID-19. *FierceHealthcare*. April 27, 2020; Vizient Risk Mitigation Assessment.

RESOURCES

- [Vizient PPE Conservation Impact Calculator](#)
 - Vizient's Risk Mitigation Assessment (contact_supplychain@vizientinc.com for more information)
-

Sg2, a Vizient company, is the health care industry's premier authority on health care trends, insights and market analytics.

Our analytics and expertise help hospitals and health systems achieve sustainable growth and ensure ongoing market relevance through the development of an effective System of CARE.