



Region V for Kids: Supply Chain Assessment

Background and Purpose

Region V for Kids is a Pediatric Disaster Care Center of Excellence (COE) funded by the US Department of Health and Human Services (HHS) Administration for Strategic Preparedness and Response (ASPR). The consortium is made up of 10 hospitals, representing pediatric care facilities from Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. Region V for Kids serves as a public-private partnership and focuses on building upon existing foundations in pediatric clinical care and emergency management. The goal of Region V for Kids is to strengthen regional capabilities around disaster preparedness and response.

In 2022, Healthcare Ready, in partnership with Region V for Kids, conducted a supply chain assessment as a follow-up of an assessment conducted in 2020 to evaluate regional supply chain practices amongst pediatric hospitals and health systems within the Region V for Kids consortium. The study sought to identify changes made to supply chain resiliency plans during the COVID-19 pandemic and provide recommendations to strengthen supply chain practices.

The goals of the study were to:

1. Analyze current and projected supply chain stressors for global and domestic supply chain networks
2. Assess how Region V for Kids consortium members' existing supply chain plans and procedures performed during COVID-19
3. Discuss successful mitigation tactics deployed by pediatric hospitals or supply chain entities (e.g., distributors, Group Purchasing Organizations (GPOs), etc.) to reduce impacts caused by the pandemic
4. Provide recommendations that are intended to identify opportunities to strengthen supply chain resilience for future events

Methodology

This assessment employed a two-part methodology consisting of 1) a literature review and 2) informational discussions with supply chain managers from hospitals and health systems involved in the Region V for Kids consortium and supply chain entities (e.g., GPOs, distributors).

- The **literature-based research** consisted of a review and synthesis of peer-reviewed research articles, industry-produced reports, government documents, and other publicly available resources that spoke to supply chain challenges and/or best practices during COVID-19.
- **Informational discussions (i.e., semi-structured interviews)** were held with supply chain managers and supply chain entities who have a regional footprint, as identified in the 2020 assessment. Interviews were hosted on a voluntary basis and sought to collect information on pediatric-specific critical supplies used for common hazards in the region, revisions made to supply chain practices due to the COVID-19 pandemic, and the identification of potential supply chain gaps and vulnerabilities across the region.

Discussions were transcribed using Trint (a web-based transcription service), and qualitatively analyzed. Information collected from the literature review was assessed by the project team and each resource was analyzed to determine relevance for the final analysis.

Key Findings

The results of this assessment focused on operational elements of the healthcare supply chain. Specifically we evaluated the strengths, weaknesses, opportunities, and threats of supply chain processes and plans used by Region V for Kids, and recurring themes (or practices) were considered significant findings, which included:

1. Pediatric hospitals and health systems in Region V for Kids are moving away from just-in-time ordering strategies and opting for strategies that allow facilities to have greater days-on-hand inventory.
2. To mitigate impacts due to disruptions to the distribution of product, some pediatric hospitals increased the use of warehousing to create a safety stock and/or increased the movement of product around neighboring facilities to ensure product goes to where it is most needed.
3. The strains of operating under uncertain long-term conditions due to COVID-19 forced pediatric hospitals to adjust their inventory management practices, such as increasing the minimum days-on-hand inventory at periodic automated replenishment (PAR) locations.
4. Pediatric hospitals take differing approaches to managing a critical supplies list, though most indicated the use of some processes or procedures that allow supply chain teams to ensure adequate levels of priority supplies.
5. Close coordination with clinical teams, including nurses who are integrated into supply chain, is helpful to facilitate fast identification of clinically accepted substitutions for medical-surgical products.

6. Strategic relationships and partnerships with supply chain owners and operators (GPOs, distributors, suppliers, vendors, manufacturers, logistics providers) helped to resolve procurement issues (e.g., vetting new suppliers who were entering the market) or alleviate supply shortages (e.g., resource sharing with neighboring hospitals).

Recommendations for Strengthening Hospital and Health System Supply Chain Operations

The COVID-19 pandemic exposed just how fragile global and domestic healthcare supply chains can be, and how vulnerable pediatric hospitals are to experiencing impacts caused by such disruptions. Based on these findings, we strongly encourage pediatric hospitals in Region V for Kids, and supply chain entities with customers in the region, to invest in opportunities and strategies that can strengthen regional supply chain resilience, so that facilities are better prepared for future events. Specific recommendations include:

- 1. Improve information sharing to support better forecasting and demand sharing across the entire supply chain**

There is a need for improved data sharing to increase visibility of available supply and forecasted demand across the entire supply chain (from raw material acquisition and supplier data all the way to end-user demand). In other words, improved supply chain data visibility would ideally allow stakeholders to be connected to data from manufacturers through the point of final delivery. Such exposure to data gives stakeholders' the "complete picture" of expected disruptions and increases their ability to take fast action to mitigate impacts in a well-informed manner. We strongly encourage hospitals to consider ways to establish interoperable technology systems that support data sharing with their suppliers, GPOs, vendors, distributors, and/or manufacturers.

- 2. Focus on mitigating workforce shortages of essential personnel, such as nurses, to strengthen supply chain**

Clinical staff on the frontlines of COVID-19, including nurses, experienced firsthand the clinical implications caused by supply shortages over the course of the pandemic. A February 2021 survey of 100 nurses found that 86% of nurses attested that supply chain workflows cause them stress, with 85% documenting supplies as a challenge¹. Additionally, 20% cited dealing with supply chain problems as a key reason of why they considered quitting their current position. Such loss would significantly impact hospital and health system workforce levels and capabilities.

Nursing staff (or other clinical teams) are key connective tissues between hospital supply chain (including value analysis, purchasing, etc.), pharmacy, and hospital or health system executives. Clinical teams help to ensure swift and efficient identification of alternative supplies when primary products are on backorder, allocation, or in short supply. Engaging the nursing staff directly with product sourcing, identifying substitutions, and other supply chain needs can help boost intra-departmental communication and coordination. Additionally, involving clinical staff in supply chain processes may also decrease professional burn-out and create higher job satisfaction, staff retention, and overall improved supply chain functionality across hospitals and health systems.

¹ Syft. (2021, August 20). *Nurses: The Secret Factor for Better Supply Chains*. Syft. <https://go.syftco.com/market-report/nurses-the-secret-factor-for-better-supply-chains>

3. Leverage existing partnerships whose membership consists of pediatric hospitals

Pediatric hospitals may experience unique supply needs for their patients that may not be a challenge for other health facilities. We recommend that all pediatric hospitals in Region V for Kids consider joining and actively participating in partnerships identified in this assessment (e.g., Children’s Hospital Association, the Healthcare Industry Resilience Collaborative, Region V for Kids, and Regional Health Care Coalitions). Utilizing these coordination mechanisms during steady state can help to ensure that supply chain managers at pediatric hospitals know where they can turn to for support during a future surge event. Furthermore, regional partnerships often host trainings and exercises for their membership during steady state, which can help regional stakeholders practice how they would manage surge needs for various disasters.

4. Participate in opportunities to work with government partners

There are many ongoing efforts at the federal, regional, and state levels to identify policy solutions that can help avoid supply issues experienced during COVID-19 in future epidemics or disasters. When possible, pediatric hospitals should consider participating in focus groups, requests for information (RFIs), or other engagement opportunities that would allow providers to inform policy makers on challenges experienced during COVID-19 and provide recommendations for political action.

5. Ensure your hospital or health system has primary and secondary sources for product

This study concluded that pediatric hospitals’ relationships with primary vendors or suppliers are often highly collaborative and contractually stipulated. However, as seen during COVID-19, global disruptions to the healthcare supply chain can limit available supply for hospitals who rely on primary vendors for product. We recommend that pediatric hospitals and health systems consider identifying and contractually securing relationships with secondary vendors for product that is critically needed during emergency events. A more diversified sourcing of product has the potential to mitigate the necessity for maintaining a greater stockpile, spread obligations and decrease the strain on the vendors, and distribute the available product without causing tension between entities competing for the same product from the same vendor.

6. Work with external partners to ensure there is a safety stockpile for future hazardous events

The rise of the just-in-case inventory system (vs. just-in-time) has encouraged increased use of stockpiling or warehousing capacity of safety or buffer stocks. While this can create some learning curves around expanding warehousing capacity, implementing warehouse management systems, or adding additional logistic staff, investing in safety stocks can prevent supply shortages during future disasters.

Recognizing that not all hospitals have the capacity to create their own safety stock, we recommend that Region V for Kids consider investigating opportunities to invest in a community-based upkeep of a safety stock through partnerships with a local Health Care Coalition, existing networks like the Children’s Hospital Association, and/or supply chain partners such as Group Purchasing Organizations.

7. Consider regional stock rotation in inventory management

Some pediatric hospitals who belong to larger health systems indicated their facilities rotate supplies between regional facilities to ensure supplies are going to facilities in need, or to those who will use the supplies in a timely manner before they expire. For independent hospitals (or health systems who are not currently rotating stock), there may be opportunities to stand up programs, or partnerships, that can establish a regional supply rotation system. These sharing agreements could be extremely beneficial to leverage during times of strain when certain supplies are on backorder or placed on needs-based-allocation. We especially encourage pediatric hospitals who use the same GPOs, vendors, or distributors to consider how a regional resource sharing program could be established.

8. Incorporate the notion of safety stockpiles into your organization's hazard vulnerability analysis and ensure that it is shared with internal and external partners

Whether Region V for Kids hospitals choose to maintain their own safety stock, support a regionally managed safety stock, or participate in a regional stock rotation program, we recommend that hospitals incorporate their plans for leveraging safety stock into their hazard vulnerability analysis (HVA). Such considerations could be incorporated into the hospital's descriptions of their internal response (types of supplies that will be maintained, volume, staff needed to manage safety stock, etc.), as well as their external response (coordination with supply chain partners or government agencies).

Region V for Kids hospitals should share and review their HVA with external partners who might be directly or indirectly incorporated into their response plans. This will inform a more cohesive approach to preparedness and harmonize response operations. This exchange of information has the potential to harbor collaboration and decrease competition for resources across the region during future emergencies.

9. Ensure diverse, interdepartmental, inter-institutional, and inter-specialty representation within value-analysis teams and incident command centers

There are ongoing efforts to automate, upgrade, and integrate data and various technologies increase visibility, better inform supply chain stakeholders, and create a complete operating picture of the situation. Greater visibility will improve hospital's ability to swiftly pivot and mitigate supply chain and surge scenario disruptions. The interpretation of this data will require a concerted effort of diverse departmental or clinical representatives within the hospital or health system organization, who decide on the feasibility of certain actions. We encourage hospitals to ensure diverse, interdepartmental, inter-institutional, and inter-specialty representation within their incident command centers to ensure such decision-making is well-informed and includes various perspectives and expertise.

About Healthcare Ready

Healthcare Ready is a 501(c)(3) national nonprofit organization that works to ensure patient access to healthcare in times of disaster. Established in 2007, the organization facilitates public and private sector collaboration to maintain US health systems continuity and build and enhance the resilience of communities before, during, and after an emergency.

Learn more about Healthcare Ready by [visiting our website](#). Or, visit our [Resource Center](#) for additional reports and tools to help your organization prepare for disasters.

[Sign up to receive Healthcare Ready's email notifications](#), including event-specific Situation Reports and Monthly Newsletters.

Please visit the [Region V for Kids website](#) to learn more about the consortium, or to access resources around disaster preparedness and response for children's hospitals.

Healthcare Ready leverages relationships with government, nonprofit, and medical supply chains to build and enhance the resiliency of communities before, during, and after disasters. Learn more at HealthcareReady.org.

