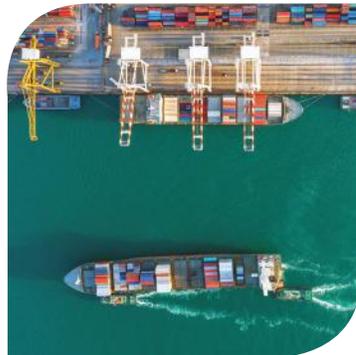




Supply Chain Resiliency Road Map

*Leading Future Preparedness
& Response Initiatives*



HIDA's Supply Chain Resiliency Road Map

Leading Future Preparedness & Response Initiatives



Executive Summary

Industry supply chain leaders created this road map to share learnings from past public health events and disasters in order to provide a foundation for future public health responses. This road map is intended to initiate discussions among all stakeholders, including state, local, and federal officials, the commercial market, and providers. These events may include cyberattacks, natural disasters, global transportation challenges, and public health events. The road map provides guidance to navigate significant challenges in getting medical products to clinicians and other points of care.

A resilient supply chain is bolstered by collaborative strategies and policies. Neither the private sector nor the public sector alone possess the full scope of capabilities or expertise needed to plan for an all-hazards public health event. These plans must be designed for long term, **sustainable** solutions and **consistently funded** to ensure future readiness.

Below are HIDA's principles for a resilient supply chain:

- **Reliable:** has consistent demand, supply, labor, transportation, and capital investment
- **Proactive:** can anticipate, resist/mitigate, and recover from supply chain disruptions
- **Coordinated:** is efficient and works with partners to educate, monitor, and collaborate
- **Transparent:** shares and communicates meaningful and actionable information

Five Pillars To Support A Resilient Supply Chain

1

Diversified Sourcing And Domestic Production Strategy:

A strategic blend of domestic, near shored, and global production is critical to a resilient supply chain that can surge to meet the demand of future emergencies.

2

Buffer Of Critical Products:

A buffer of critical products such as personal protective equipment (PPE), testing supplies, and infection prevention products is needed for future emergencies to meet initial demand during a crisis.

3

Future Stockpile Strategies:

It is important to rethink the role and size of government stockpiles as well as coordination between federal, state, and local stockpiling strategies.

4

Expedite Transportation Of Medical Products:

Healthcare and transportation partners should develop a process now to expedite medical supplies during future emergencies.

5

Public-Private Partnerships:

Public and private sector partners should meet regularly during steady state to maintain relationships, ensure lessons are implemented, and collaborate on supply chain solutions.

Diversified Sourcing And Domestic Production Strategy



From: Concentrated Production In One Geographic Area

To: Strategic And Sustainable Blend Of Sources

Objective: Establish capacity to quickly ramp up critical medical supply production to support U.S. healthcare providers and patients.

Experience: Many startup businesses failed and surplus stockpiles have since been dismantled or paused without a strategy to sustain demand for domestic products post-pandemic. Supply chain shortages were caused by a surge of demand in certain PPE categories and the need to rely on foreign manufacturers for some medical products.

Shortages were also compounded by unscrupulous actors that introduced fraudulent and counterfeit products in the market. This put providers and patients at additional risk.

The Path Forward: A strategic blend of global, near-shored, and domestic sources for critical products is needed to boost preparedness and resilience. Both the commercial market and the federal government need an industrial plan supporting a sustainable domestic market for these medical products.

Diversify Global Sourcing:

- Balance regions for key categories of medical supplies
- Identify areas of overreliance and create a plan to diversify sourcing across multiple countries and regions where possible
- Stockpile key raw materials for critical products to support domestic ramp up of production

Incentivize Domestic Manufacturing:

- Establish an idle manufacturing strategy to ensure that additional production lines can quickly be executed during a crisis
- Establish a plan to quickly ramp up medical supply production during an emergency
- Utilize government incentives to increase domestic medical device manufacturing base
- Prioritize experienced companies to receive government support to on-shore production

Sustain Demand For U.S. Products:

- Use federal purchases and multi-year contracts to support long-term demand for domestically manufactured medical products
- Consider subsidies to assist U.S. manufacturers to compete in a robust market – both domestically and globally
- Consider favorable trade agreements and reimbursement policies to support domestic market

HIDA Supports:

- Reimbursement strategies as appropriate to support domestic purchasing by healthcare providers
- Long-term, multi-year purchase commitment contracts from the federal government
- Prioritizing companies with healthcare manufacturing experience
- Pre-vetting suppliers capable of pivoting to support the healthcare industry during an emergency

Buffer Of Critical Products



From: Initial Demand Spike Exceeding Inventory Levels

To: Resilient Distributor-Managed Cushion Providing Manufacturers A Head Start

Objective: Create a buffer of critical medical products in private-sector distribution centers for public health emergencies to withstand the initial spike in demand and provide enough time for manufacturers to ramp up production

Experience: Historically, from H1N1 to COVID-19, pandemic demand for PPE and other essential products spikes quickly. Sharp increases in both the volume demanded and the variety of customers seeking PPE led to shortages, hoarding, and other issues.

The Path Forward: Create a buffer of medical products in private-sector distribution centers to meet the immediate demand of a public health emergency. This buffer will give the supply chain critical time to adapt and increase production. It will require distributors to manage and rotate more stock than their customers utilize in non-crisis times and will need government support. A buffer of critical products is not for all products that could be stockpiled. However, creating the buffer will allow government stockpiles to focus on other important products that are needed to support public health responses.

Commercial Distribution Channel By The Numbers

- 500 existing commercial distribution centers
- 76 million square feet of warehouse space
- Serving daily over 500,000 healthcare providers across the care continuum

Develop A Public Health Emergency Critical Products List:

- Develop consensus on a core set of products utilized every day in healthcare for which demand spikes during an emergency, so distributors can manage and rotate
- Focus on PPE, diagnostic tests, infection prevention supplies, and treatment products
- Enable providers to plan ahead with supply chain partners to predetermine acceptable alternatives and product substitutions during a crisis

Build A Bigger Cushion:

- Federal government should fund distributors to increase inventory levels for PPE and other critical supplies
- Distributors should be funded to carry up to 90-120 days' supply of an agreed upon critical supplies list
- Distributors keep inventory current by monitoring expiration dates, rotating, and replenishing these buffer reserves as needed

HIDA Supports:

- Implementation and funding of managed inventory provisions of the PREVENT Pandemics Act
- Utilizing FDA's Critical Medical Device List to identify a subset of products needed during public health emergencies

Future Stockpile Strategies



From: Stockpile Strategies Based On Hoarding And Panic Buying

To: Stockpiles That Proactively Adapt To Changes In Supply And Demand

Objective: Create dynamic stockpiles at every level of government that are actively managed to meet long term and sustained needs during a public health emergency

Experience: The perception of stockpiles before COVID-19 was that they are a static, set-aside store of supplies that can only be used in a crisis. When stockpiles sit untouched, products expire and are discarded, which makes them useless during a public health event. Over time, neglected stockpiles are allowed to shrink, leaving them unable to support public health as envisioned.

The Path Forward: A new mindset must be adopted that views stockpiles as a dynamic set of resources. They are in continuous motion of rotation and replenishment that require sustained and reliable funding across all levels of government. Additionally, the commercial market buffer stock discussed previously serves to augment stockpiles and inform public entity procurement planning.

Stockpile Statistics

- A 90-day stockpile of PPE for a 350-bed hospital requires 5,700 square feet of space — the equivalent of 13–15 tractor trailers
- A 90-day stockpile for a 5,000-bed system requires 81,400 square feet of space — the equivalent of 1½ football fields

Innovative Stockpiling Strategies:

- Warehousing strategies to account for how inventory will be managed, rotated, and replaced
- Last-mile delivery strategies to healthcare providers and patients
- Determining quantity of each product to stockpile and account for other public stockpiles and the commercial critical product buffer
- Stockpiling raw materials may be necessary to support the ability of manufactures to ramp production of critical products

Vendor-Managed Inventory And Inter-Governmental Coordination:

- Stockpiles managed by private sector vendors can reduce burden on public sector
- Stockpiles supported by federal, state, and local governments must coordinate and compliment efforts

HIDA Supports:

- Funding, expanding, and replenishing the Strategic National Stockpile
- Coordinating federal, state, and local stockpiles and commercial market for last mile delivery
- Communicating a strategy so end-users know how to request assets from stockpiles
- Defining replenishment strategy for stockpiles during time of pandemic so it is not a disruption to the market

Expedited Transportation Of Medical Products



From: Medical Supplies Delayed In Ports

To: Medical Supplies Expedited During Emergencies

Objective: Ensure medical products are prioritized to support healthcare providers and patients during a public health emergency

Experience: In 2021 and 2022, containers of critical medical supplies were delayed an average of 29 days throughout the transportation system. This was approximately 31,000-46,000 containers. As current disruptions due to drought conditions in the Panama Canal and the armed attacks on ships in the Red Sea highlight, the frequency and unpredictability of shipping disruptions continue.

The Path Forward: Proactive planning between stakeholder partners must take place now, not when the next disruption happens. Partners should collaborate on comprehensive solutions to expedite medical supplies.

FAST PASS Legislation:

- Enact H.R. 6140, the Facilitating Access to Swiftly Transport Goods during a Publicly Announced State of Emergency Situation (FAST PASS) Act, led by Reps. Mike Ezell (R-MS) and John Garamendi (D-CA)
- The bipartisan bill directs the U.S. Department of Transportation (USDOT) to study efforts to expedite critical cargo across all modes of transportation
- USDOT would consult with the Department of Health and Human Services to ensure alignment to support public health

Partner With Ports During An Emergency:

- Allow trucks to pick up medical supply containers at ports without an appointment
- Ease restrictions on returns of empty containers to expedite cargo throughput
- Set up offsite pop-up ports for truck pick-up of medical supply containers
- Ground empty containers to free up truck chassis to transport containers full of supplies
- Develop public-private partnerships to identify, define, and prioritize critical medical cargo for expedited processing

A Single Shipping Container Can Hold

- 3.5 million exam gloves
- 187,000 surgical gowns
- 360,000 syringes

HIDA Supports:

- H.R. 6140, the FAST PASS Act
- Public-private partnerships between healthcare distributors and marine terminals to identify and expedite the off-loading of critical medical cargo

Public-Private Partnerships



From: Meeting For The First Time During A Crisis

To: Meeting Regularly To Proactively Plan And Collaborate On Solutions

Objective: Collaborations with public partners that support proactively planning for future responses

Experience: Public-private partnerships were a defining characteristic of the response to the COVID-19 pandemic. Necessary and consistent collaboration highlighted the complementary roles of the commercial supply chain and government. The private sector proved it is scaled to make, source, and distribute medical products to our nation's healthcare providers across the care continuum. Federal partners provided the planning, funding, and prioritization to create a cohesive response.

The Path Forward: Public and private sector partners should continue to meet regularly to cultivate relationships, ensure lessons learned are implemented, and new response models are tested. These partners must also monitor the supply chain and discuss the potential impact a potential disruption may have as well as mitigation strategies needed.

Implement The *Traffic Protocol Playbook*:

- Determine when the supply chain is in one of three conditions – Steady State (Green), Potential Disruptions (Yellow), or Overwhelmed (Red)
- Public and private sector partners should coordinate production and distribution decisions during a public health emergency
- The partnership must also utilize protocol playbook to signal a phased ramp down to rebalance inventory

Nurture Relationships, Communication, And Transparency:

- Maintain the trust and communication between public and private sectors built during the pandemic
- Retain the “muscle memory” of institutional crisis response that can be used during the next adverse event
- Communication strategies must be understood by all partners. End users must have clear understanding of how to access products during an emergency
- Transparency and data sharing between public and private sector partners is key for decision making

Private-Sector Milestones

During the COVID-19 pandemic, HIDA members distributed 91.9 billion units of PPE to healthcare providers

HIDA Supports:

- Continuing to build upon the *Traffic Protocol Playbook*, developed in collaboration with the Administration for Strategic Preparedness and Response (ASPR), to provide insight and guidance for public and private partners
- Convening private industry with federal, state, and local government partners to build relationships and develop solutions to pressing issues
- Reauthorizing and funding the Pandemic and All Hazards Preparedness Act (PAHPA) to ensure all hazards framework and partnerships continue



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