



Assessing State PPE Procurement During COVID-19: A RESEARCH REPORT

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“So, we found a vendor that could get us a lot of masks all at one time, and they had gotten a shipment in from somewhere, and then the actual boat was coming around the port . . . I have somebody drive down and hand them a check for the 25% before the ship arrives at the port. The only way I can explain it is that it’s like a Tony Soprano walked up to the dock, handed them cash, and took it. That happened to me — they took it.”

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LETTER FROM NASPO LEADERSHIP

Learning the lessons of the COVID-19 pandemic is fundamental to both the continued response and a sustained future recovery. At NASPO, we are privileged to support the state procurement offices of all 50 states and the District of Columbia in providing solutions to public procurement related concerns. During the COVID pandemic, we witnessed professionalism from state procurement offices that demonstrated the role of public procurement officials to their states and citizens.

In early fall of 2020, recognizing the challenges faced and the solutions discovered, NASPO used the opportunity to study best practices in emergency procurement during a disaster. Working with identified academics from around the country and engaging its membership, NASPO embarked on a study to assess the state procurement office structure and processes impact on emergency response to the pandemic within their state.

The study comprised over 100 hours of interviews conducted by the academic research team with state procurement staff, suppliers, and other state officials. The approach was a qualitative research effort consisting of open conversations directed by the research team and covering topics that demonstrated both successes and areas of potential improvement for procurement in the states. They identified specific themes of successful emergency operations while highlighting the need for state procurement to be involved early in emergency planning. The lessons learned could help propel public procurement forward in the coming years while also ensuring that states are better prepared to meet future emergencies.

The following report is the culmination of all the research teams' findings and recommendations. We express our sincere appreciation to the states who agreed to be interviewed and provided open, honest responses to the research study questions. Without their candor, we could not have learned as much as we have, and their responses will inform public procurement for years to come. We are also grateful to the academic research team who identified a methodology for this research, conducted the interviews, and have provided this report.

NASPO's vision is dedicated to elevating the public procurement profession. We believe this research is a step in that endeavor, and we invite you to explore the lessons included here and use them to inform your own next steps as well.

Sincerely,



Lindle Hatton
CEO, NASPO and NASPO ValuePoint



Rosalyn Ingram
President, NASPO
Chief Procurement Officer,
State of Florida



George Schutter
Immediate Past President,
NASPO Chief Procurement
Officer,
District of Columbia

EXECUTIVE SUMMARY

The COVID-19 emergency will be remembered as one of the most devastating disasters in modern history, with impacts that rippled across all sectors of the global economy and societies. One of the grave failures is the challenge governments faced in securing personal protection equipment (PPE) for their citizens. In Western countries, it became clear that the shortage could not be averted quickly as critical products such as N95 masks and nitrile gloves became rare commodities globally. Most PPE is produced in Asia, with ironically a large proportion produced in the Wuhan region.¹ PPE shortages in the United States created a bidding war among nations, states within nations, and between United States state and federal government agencies.

In this report, we focused on the PPE shortages that occurred throughout the United States in 2020. We examined the structural influence of state procurement offices on the ability to respond in an agile and effective manner. Specifically, we explored how the levels of centralization of state procurement, led by the state Chief Procurement Officer (CPOs), were associated with the responsiveness of state agencies to obtain PPE supplies during the height of the COVID-19 pandemic.

Our analysis is based on a little over 100 hours of interviews with state CPOs, state procurement managers, members of government organizations, and private sector organizations involved in the state PPE procurement process. Our results suggest that increased centralized governance of state procurement led to a more effective response in tackling large-scale supply chain disruptions. Centralized procurement enabled increased coordination, improved leveraging of the volume of the state's purchasing power², and provided for more efficient application of contracting expertise to a difficult market situation. A centralized approach also led to better coordination among disaster relief entities, PPE suppliers and hospitals, counties, and agencies requiring PPE to operate. Our analysis also offered a nuanced understanding of the different modes of interaction between state procurement and other actors in the disaster relief operations and how these communications impacted operational outcomes. In integrating these insights, we conclude this report with a maturity model that we hope may assist CPOs to benchmark their procurement practices and seek resources for improving procurement operations within their state leadership team.

¹ Evenett, S.J. (2020). Chinese whispers: COVID-19, global supply chains in essential goods, and public policy [Commentary]. *Journal of International Policy*, 3, 408-429, <https://link.springer.com/article/10.1057/s42214-020-00075-5>

² Smaller states were able to leverage the purchasing power of the NASPO ValuePoint network and work with other states on coordinated contracts.



PART 1

LOOKING BACK AT COVID-19 & STATE PROCUREMENT OF PPE

1.1 COVID-19 IS A NATIONAL DISASTER

Charles E. Fritz (1961, pp. 651-694), the founder of disaster science, defined a disaster as:

An event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented.³

COVID-19 is a unique disaster. In recent memory, typical disaster and emergency events in the United States have been regional and limited in duration; examples include hurricanes, floods, fires, earthquakes, industrial accidents, or terrorist attacks. In all such cases, the event requires immediate follow-up on the part of state agencies but is not an on-going event beyond one or two weeks. The response to such disasters typically involves moving in supplies to surrounding regions, often following an established procedure for procuring and distributing readily available supplies (e.g., food, shelter, water, and relief goods). For example, many states follow the FEMA guidelines, often enacting the Emergency Support Function (ESF). According to ESF protocol, sourcing is classified under the ESF Annex #7 Logistics Management and Resource Support. Under ESF #7, state procurement is assigned to provide resource support (facility space, office equipment, supplies, contracting services, etc.). Supplies in these types of disasters are readily available. There is no problem in identifying qualified local suppliers for quick orders and shipping to impacted sites. The sourcing task is largely operational, and the primary task involves how to mobilize supplies to meet a time-sensitive demand quickly.

In 2020, the pandemic differed from regional disasters in a fundamental and significant characteristic. The shortage of critical PPEs (e.g., N95 masks, nitrile gloves) was global in nature, and the emergency continued to rage month after month. During COVID-19, both sourcing activities and supplies emerged as the weakest link in the disaster relief operations. COVID-19 was an epic disaster on a national and global scale, which impacted every state in the union. State agencies were unable to reach out for assistance from other states (who were equally overwhelmed), nor did they receive reliable support from federal agencies such as the Strategic National Stockpile or FEMA, which were equally disabled in their response.⁴

"We were making deals that were 100,000,000 N95s at a time. We were working anywhere from 12 to 14-hour shifts; we were working seven days a week."

³ Fritz, C.E. (1961). *Disasters in contemporary social problems*. Harcourt.

⁴ Finkenstadt, D.J., Handfield, R., & Guinto, P. (2020, September 17). Why the U.S. Still Has a Severe Shortage of Medical Supplies. *Harvard Business Review*. <https://hbr.org/2020/09/why-the-u-s-still-has-a-severe-shortage-of-medical-supplies>

1.2 THE NATURE OF STATE PROCUREMENT

One of the primary functions of the state procurement office (SPO henceforth) is contract management. This activity involves identifying and vetting suppliers, who are then approved for other agencies to buy from, using agreed-upon prices, terms, and conditions. In such cases, SPOs do not take physical ownership of goods and services but are involved in negotiating contracts for state agencies and establishing purchasing policies to guide state personnel to obtain third-party products and services. (The degree to which procurement has sole authority over contracting decisions varies by state and is often influenced by the governor's policies, state statutes, and historical precedent.) Other typical supply chain management activities (e.g., supply network management, logistics risk assessment, warehouse management, distribution to end-users, transportation management, and supplier development), which are common practices for a buying firm in the private sector, are generally not part of purchasing's mandate in the public sector. Often SPOs purchase through formal bidding procedures. In the case of Maintenance, Repair, and Operations items (MRO), such as PPE, states often source these items from distributors such as Grainger, Cardinal Health, or McKesson rather than directly from manufacturers.

"Something that is kind of interesting is that our office HAD NEVER PURCHASED anything prior to COVID. You know, we establish the contracts, we negotiate the rates we deal with the vendors, but the actual purchasing transactions were always done at the business level right within the agency."

During COVID-19, states were suddenly confronted with the need to manage an end-to-end supply chain. As COVID-19 cases surged, state-approved distributors experienced PPE shortages that were sudden in nature. Inventory stockpiles rapidly disappeared as they were overwhelmed with orders. Many states did not have warehouses or modern logistics capabilities to manage stockpiles, as many states have eliminated warehouse capacity over the years. Facing acute shortages, SPOs were compelled to initiate sourcing with brokers and overseas suppliers. Most of the state procurement agents we spoke with noted that they had never worked with suppliers outside of their state, let alone a supplier located across the globe in China. Many had never worked with international bills of lading and had never established a warehouse or distribution capability through third-party transportation providers. Overnight, many of these managers were suddenly faced with the need to develop new suppliers, coordinate international logistics shipments, deal with import tariffs, fees, and customs brokers, and sign warehouse leases to enable storage of in-bound materials.

"As I was terminating purchase orders, I literally had people tell me that I was putting people's lives at risk by terminating their purchase order."

1.3 STATE PROCUREMENT REPRESENTS A CRITICAL LINK IN THE STATE COVID-19 RELIEF OPERATIONS

There was a single positive outcome that represents somewhat of a silver lining coming out of the pandemic: the **status** of state procurement was elevated, and state agencies recognized the critical role of procurement in an emergency response. This recognition unfolded in two ways. First, PPE shortages and supply chain disruption shed light on the importance of SPOs and the value of relying on the expertise of procurement professionals in supplier vetting, contract negotiation, compliance management, and more importantly, the ability to secure PPE using existing contracts and establishing new sources. Second, state procurement was asked to buy new products and services such as nursing services, temporary hospitals, homeless shelters, unemployment services, and quarantining space for infected citizens. These areas also experienced significant supply chain disruptions. During this time of crisis, procurement played a critical role in developing statements of work, SLA's and negotiating prices and payment terms, and in some cases, was instrumental in influencing the type of PPE product used by healthcare providers. Purchasing represents a hub of supply market intelligence and thus served as a key source of information for emergency management agencies during relief operations. Due to the heroic and reliable actions of state procurement personnel, stakeholders quickly learned to appreciate the expertise and value of their skill set in the agile response to the pandemic.

"In fact, we found ourselves in a little bit of hot water in the early days of the pandemic, as we had like a few million masks in storage that had been in there for too long, and they were expired. The other thing that we also did as we started buying these massive quantities is that we had to establish a warehousing framework because the state was not in the business of storing massive amounts of PPEs."

As SPOs became viewed as a resource that extends beyond simple contract and transaction managers, they emerged as a hub between emergency operation centers and the PPE brokers and suppliers. During COVID-19, procurement agencies demonstrated their capability as an enabler of **end-to-end supply chain coordination**. Due to its vantage point as the central hub bringing together supply market intelligence and demand management, we observed buyers making integrated procurement decisions that optimized delivery lot size, exploited idled production capacity in the supply base, and acted to render agile decisions under extreme pressure to perform. State agencies acted quickly to adjust to rapid market capacity shifts and price fluctuations to ensure contract adjustments took place to get materials to healthcare workers, first responders, and patients in need.

1.4 PRIDE IN PUBLIC PROCUREMENT AND A CHANGING WORK ENVIRONMENT

Despite the stress of the working conditions (often working seven days a week), acquisition personnel worked tirelessly for many weeks, starting in March in some cases and working through the late summer. As cases surged again in the fall of 2020, many procurement agencies were better prepared and had established contracts and suppliers in place. Our interviews corroborate observations made in much of the disaster science research: disasters often bring out the best in us, and people rise to the occasion. We also noted how private citizens collaborated with entrepreneurial state employees to identify innovative and little-known PPE suppliers and often established innovative solutions to seemingly hopeless situations where PPE could not be found. Purchasing managers, staff members, and CPOs emerged as heroes. Our interviews revealed the pride and renewed sense of professional identity within this often-maligned state role. We observed a growing sense of camaraderie as people faced a common crisis.

“It was one of the — just the most difficult, defeating times in procurement from my perspective. It was really hard for my team. It was hard to stay strong. You know, it was grueling, but we just kept going.”

Simultaneously, the pandemic exerted a detrimental impact on the well-being of employees in SPOs, especially in states that experienced significant surges and fatalities early in the pandemic. The media criticism was non-stop and often failed to capture the complexity of sourcing PPE in a globally constrained supply chain. Long working hours were interminable, lasting for months on end, as state emergency conditions continued to remain in place. Global supply chains required negotiating with Asian-based manufacturers and suppliers at all hours of the night, and continued engagement during the day. The burn-out factor for many employees was extremely high.

Employees of SPOs experienced a rapid **change in their work environment** when purchasing offices shut down. In early or mid-March of 2020, procurement managers had to leave their offices within hours upon the declaration of emergency by governors. Many state procurement managers had never worked from home, and this was a new experience. SPOs rushed to set up VPNs and secure laptops for their staff. States with remote work IT infrastructure and e-procurement systems were more readily able to adjust to new work processes, especially for managing purchase orders and contracts. Working from home created many new challenges, including long working hours, isolation, lack of human interaction, and other factors that required on-going supplemental human resources to support state procurement employees during this challenging time.

1.5 THE ROLE OF STATE PROCUREMENT IN PPE SOURCING

One of our initial research questions sought to explore the efficacy of a more centralized state purchasing office. Our interviews validate this assertion. A more centralized purchasing office offered several specific benefits during state disaster responses, based on our analysis. Specifically, we observed the following practices.

- A. In consolidating PPE purchasing requirements, states could leverage their political influence on an institutional level to negotiate with large manufacturers during supply shortages. NASPO ValuePoint was an important resource,⁵ particularly for many of the smaller states in the union.
- B. A central procurement office typically has several existing statewide contracts with established suppliers that can be relied on in an emergency. In cases where procurement was decentralized, multiple agencies across a state ended up re-inventing the wheel by attempting to buy from unknown suppliers, occasionally encountering fraudulent brokers or non-performing suppliers. In such cases, these agencies finally called their SPO when they “ran into troubles or difficulties,” when suppliers failed to deliver, or in some cases delivered counterfeit or non-[NIOSH](#) compliant PPE masks.
- C. SPOs typically have personnel with strong negotiation and contract management expertise. Many SPOs asserted their influence through their audit authority, which is also important for compliance to receive federal (FEMA) reimbursement through the CARES Act. The CARES Act required detailed documentation of legitimate supply agreements and the delivery of materials to the state for reimbursement. Many state procurement officials quickly recognized a dearth of compliance requirements in existing contracts, and they ensured that appropriate terms were added to contracts that required suppliers to comply. This prevented many compliance violations.
- D. A centralized state procurement office, as a hub or bridge between upstream suppliers and downstream customers, enables relief operations optimization. This is evident in the delivery of smaller PPE lot sizes, shipment and adjustment of demand and contractual needs, and better communication between demand and supply planning.

⁵ NASPO ValuePoint (naspovaluepoint.org) is the cooperative purchasing division of the National Association of State Procurement Officials (NASPO), facilitating cooperative public procurement solicitations using a Lead State model. NASPO is a non-profit association dedicated to advancing public procurement through leadership, excellence, and integrity. It is made up of the directors of the central purchasing offices in each of the 50 states, the District of Columbia, and the United States. (NASPO) provides leadership for professional public purchasing, improve the quality of purchasing and procurement, exchange information, and cooperate to attain greater efficiency and economy.

“States are competing against each other; agencies are competing for the same supplies, and we compete against each other to serve the same customer.”

Centralized procurement has two institutional dimensions that are important in a disaster event. The first involves the explicit articulation of the organizational position of the SPO in the overall state government hierarchy, which guarantees that authority/responsibility for the procurement activity lies with the SPO during a period of emergency response.

The second dimension is more implicit. The perceived authority of the SPO ensures that this agency is accountable. An SPO hires individuals based on specialized knowledge of contracting, negotiation, and sourcing. These skills are instrumental in ensuring the contribution of the SPO in the state government in an emergency disaster setting such as the current COVID-19 crisis. This authority is influenced by the **entrepreneurial and innovative capabilities** of individual buyers, the political skills and social capital of the CPO, and the political support from upper-level state agency leaders, the governor’s office, and peer agencies and stakeholders within the state (e.g., finance, treasury, DHH, etc.). More specifically, in their normal work functions, CPOs and contract officers are used to responding to the routines and needs of the clients. They are used to being in fluid positions to fit out new positions with clients. COVID-19 forced them to step forth as problem-solvers and decision-makers. In many states, they are among the first to become aware of the imminent shortages of not only PPE but also other commodities because of their visibility of the supply chains. They take matters into their own hands as institutional entrepreneurs working with the governor’s office, finance department, and state attorney to establish a new approval process to make quick purchasing decisions. Similarly, when their clients (e.g., health officials, hospitals) received changing guidance on PPE and equipment from the FDA, SPOs take on the responsibility to “design” the product solutions on short notice for their clients based on supplies and components that are available in the market.

Our interviews suggest that the integration of these two dimensions distinguished improved responses of state agencies during COVID-19. In general, we observed that among the interviewed 47 States and the District of Columbia, a high percentage of SPOs played an active and strategic role in the states’ disaster response, especially as it relates to the availability of PPE for healthcare and first responders. There was no single “best in class” model that emerged. Still, these high-level attributes were notable in making this distinction of excellence in acquisition response. In comparing responses across our interviews, we established four “**governance archetypes**” that characterize the general roles and activities of SPOs. These archetypes differ concerning the degree of centralization of the SPO and its relative agility level to respond to the COVID-19 crisis.

ARCHETYPE A

This archetype is characterized by an SPO with strong support from the governor’s office and was delegated as the solitary point of contact for critical PPE sourcing for all state agencies (as well as other stakeholders such as 501 organizations).

This type of government granted the SPO significant autonomy and financial resources for sourcing PPE, and it enabled independent decision-making based on their delegated authority. Many states in

this category happened to be relatively large in the size of their population and thus enjoyed significantly higher financial resource levels. Employees in these SPOs often had prior private sector experience in global sourcing and supply chain operations. In some cases, they were able to leverage connections with the private sector to their advantage (e.g., consulting firms, large international corporations with a strong presence in the state). Many of these were able to negotiate directly with Asian suppliers, using liaisons or corporate contacts in China to help vet, negotiate, and arrange to ship with PPE manufacturers. In some cases, the governor's political contacts also led to connections that could be leveraged to the state's advantage.

ARCHETYPE B

This archetype is characterized by an SPO, which acted as a key partner in the state's emergency operations center (EOC). The SPO became responsible for sourcing-related activities such as supplier vetting, negotiation, and coordination of shipping and delivery. In such cases, the SPO often embedded dedicated acquisition personnel to the EOC, co-locating them physically adjacent to EOC staff as advocated by FEMA ESF#7. In this arrangement, the state EOC was delegated as the primary COVID response entity in charge, relying on well-practiced routines and procedures. Often, the EOC quickly recognized the value of procurement's expertise and relied on them heavily in the ensuing operational emergency response. Dedicated EOC staff, personnel, and support from various agencies were also engaged alongside SPO staff to ensure a collaborative team environment for agile coordination response.

We also observed that states with a history of natural disasters (such as hurricanes, flooding, and adverse weather) could mobilize more quickly than other states due to their prior experience in working emergencies by leaning on a well-practiced playbook. Emergency response was characterized as a "muscle memory" by individuals we interviewed, who noted that launching relief operations was a common occurrence (although many recognized that COVID-19 was an unprecedented disaster due to the shortages in supplies and extended length). When a state did not have a rich history in dealing with natural disasters, we observed that agile learning of individuals caught in the crossfire was critical in determining the effectiveness of involvement and contribution to emergency operations. While Archetype B states typically had a less centralized SPO, the influence of SPO was contingent on the initiatives of individual buyers to engage with the EOC productively.

ARCHETYPE C

This archetype is characterized by an SPO which supports the EOC but does so in a limited and passive fashion. The primary responsibility for sourcing material in these states was delegated to the EOC, which was often operated by a National Guard division. State procurement was often sought only for relatively minor technical support, such as supplier vetting to augment the EOC. State procurement did not play a significant role in emergency operations. This lack of engagement often emerged as a less than optimal response to the COVID crisis.

This arrangement was often prevalent in states that had less frequent and less severe experiences with natural disasters. Many of these states were fortunate to dodge the earliest COVID-19 surges observed in eastern and western coastal states. PPE shortages were often not acutely felt in early 2020 by these states, which allowed them more time to prepare and stockpile PPE.

ARCHETYPE D

This archetype is characterized by an SPO with a very limited role in their state's PPE sourcing effort. State agencies typically operated independently to carry out their own PPE procurement.

In these decentralized procurement arrangements, the SPO's functional role was generally limited to policy advocacy and narrow tactical purchasing of services for administrative offices. SPOs played a limited role in influencing purchasing processes or decisions of other state agencies. During COVID-19, some state agencies that were floundering in some cases sought help from State Procurement (with a positive outcome), which opened the possibility for increased centralization policy shifts in the future. However, in this archetype, SPOs must revert to “advertising and broadcasting” their existing supplier contracts to other state agencies.

Among the four archetypes, Archetypes A and B are characterized by a higher degree of centralized procurement governance structures. Our analysis suggests that they yielded stronger outcomes in meeting PPE needs. Centralized procurement gives the states the buying power that smaller agencies would not have. However, several interviewees also pointed out a trade-off associated with a centralized SPO. Over-centralization could lead to rigidity in responses to emergencies. In the pandemic, the demand for various types of PPE changed across different phases of the pandemic. The uncertainty associated with what is needed at a given time could not be predicted even by healthcare officials or doctors. Thus, a centralized SPO should consider incorporating a team of experts, including customers (i.e., DHH and doctors from hospitals), to improve supply chain agility. The benefits of having a centralized procurement organization are consistent with academic practices reflected in both the public and private sectors, including work by NASPO.⁶ Therefore, an effective centralized SPO also requires (A) a change from contract management to supply chain management, (B) inclusion of expertise and the voice of the customer within the buying organization, and (C) the right purchasing system — people, process, and support.

⁶ Monczka, R., Handfield, R., Giunipero, L., & Patterson, J. (2019). *Purchasing and supply chain management* (7th Edition). Southwestern Publishing.

1.6 MANAGING THE COMMONS—COALESCENCE OF THE PUBLIC AND THE PRIVATE SPHERE

When the state governors announced emergency declarations in mid-March of 2020, states had little prior experience with manufacturers' interactions with the PPE supply chains. One interesting development was the rapid formation of collaborative arrangements between the state governments and for-profit companies, and individual PPE brokers or importers. The resulting formal and informal partnerships were created to locate, secure, transport, store and distribute critical PPEs and gave the state government visibility to the end-to-end supply chains, including PPE supply chains. The supply chain infrastructure of critical PPEs, largely owned by companies outside of the United States, are enabled as “the commons” to serve the public interests.

In many cases, such partnerships start with cold calls with the SPO or through personal business and friendship networks. As the relationships develop, private companies and citizens are entrusted with various supply chain management tasks on behalf of the SPO to locate, validate, and curate PPE supplies.

Our analysis suggests that the private-public partnership takes two forms, each with a unique configuration of relationships and interactions.

Form 1 is the *outsourced public procurement responsibility*. Here, public procurement tasks were shifted to the private companies, brokers, or suppliers. Part of the tasks led to new service contracts awarded to the private companies (e.g., emergency planning contracts). In some cases, the states outsourced part of supply management tasks such as supplier vetting or warehouse management to the suppliers. In these instances, private companies lent their management expertise and physical resources.

Form 2 is the *broker as a deputized state agent*. This mode established trusted brokers to help navigate upstream overseas PPE supply chains. In such cases, key members of the SPOs and individual brokers or middlemen work closely to make real-time decisions concerning negotiation, supplier vetting, and contract commitment. In these teams, brokers and middlemen were brought into the government as agents of the government. In a sense, these individuals were “deputized” to work on behalf of the state in dealing with unfamiliar suppliers and supply sources and foreign government officials to coordinate PPE export logistics.



PART 2

MATURITY MODEL – ASSESSING STATE PREPAREDNESS IN DISASTER RESPONSE

2.1 THE NEED FOR A MATURITY MODEL TO ASSESS STATE PROCUREMENT CAPABILITIES DURING DISASTER RESPONSE

Our findings suggest that the efficacy of state procurement varied significantly. This led us to identify best practices to incorporate lessons learned and exemplar practices from states interviewed. We adapted a purchasing “Maturity Model” as a tool to prescribe the “ideal” practices of public procurement in disaster management and assess the status of a given state against the key criteria of the model.

A maturity model describes procurement’s role at a specific point in time and seeks to explain the changing role of procurement by delineating a set of development stages. It is an approach that can help to demonstrate more advanced practices in use. In many cases, moving up the scale of procurement maturity is a function of lessons learned, advanced governance structures, higher levels of training and skill development, and procurement’s relationship to its key internal stakeholders. Although a poor system cannot cover up the ills of a poorly defined process, systems also play a role. For instance, we observed that states that had experienced disasters had many lessons learned from prior experiences, which allowed them to apply these lessons during COVID. These states were often more able to mobilize quickly and shift to a “disaster relief” mode, and they had more advanced playbooks based on the after-action reports that materialized from their hurricane response experiences. Our team defined this capability as an ability to be more mentally prepared for what lies ahead (“muscle memory”) and had routinized procedures and policies in advance of the COVID-19 disaster. Their personnel were also more prepared to mobilize. One of the distinguishing features of COVID was that it was not a short-term event (like a hurricane), but indeed has extended almost a year. Therefore, it is a sustained disaster requiring a different type of response.

To assess state procurement’s maturity and its ability to support state operations during disasters, we propose a maturity model that includes aspects related to both the organization and specific disaster preparedness variables. As such, our maturity models reflect best practices in the following categories, which were derived from a prior study conducted by Handfield (2010) on government responses to the pandemic. The key components of the maturity model are described in detail in the following.

2.2 DIMENSIONS OF MATURITY MODEL

This dimension characterizes the state procurement organization in terms of the governance structure of procurement and its relationship to other agencies. Organizational aspects seem to influence the type of disaster response.

The primary distinguishing feature we use to evaluate the organizational context is the **reporting level**. In this context, an advanced procurement maturity includes a direct line with the governor's office and embeddedness with the other agencies in a pandemic. This was best described by a senior executive at one of the regions we spoke with.

"There were a few key things about our response that helped us in the pandemic. One, we have a central procurement agency and a CPO, and an incredible knowledgeable and capable CPO. Two, we also have a robust emergency operations center function — and we train and practice regularly for any number of issues. . . and we are practiced in emergency operations. . . . When we started to look at emergency management, we started gathering intel about this; we were already doing some tabletop exercises. Importantly, we had a pandemic playbook that had been published four years earlier. We actually got a lot of PPE orders in early, went to 3M early, and got them to release orders before the federal government had collapsed and taken all those orders away. We were in a good spot on PPE from the beginning. We were never without critical PPE, which is a testament to central procurement and our Emergency Operations Center. They were both tied in and keyed in to the requirements and could get the response going early."

The second aspect is the **level of centralization**. In a decentralized approach to state procurement, contracting entities in state bodies covered by the relevant legislation are responsible for conducting procurement activities. This approach is very diffused. It contrasts with a centralized approach whereby one government agency carries out procurement functions on the behalf of the entity's other agencies. Although centralized procurement is usually associated with higher maturity, there are arguments in favor of both configurations; however, as explained in the previous section, our interviews suggest that centralized configurations seem to be more capable of reacting during disaster response.

The third aspect is the level of **procurement authority and responsibility**. This refers to how much the State Procurement Office is responsible for taking on strategic purchasing decisions for different items. Higher maturity for State Procurement means responsibility on a broader set of items and the autonomy to decide on strategic aspects, rather than purely operational ones.

The fourth aspect refers to the level of **procurement involvement in state decision-making processes**. For example, during disaster response, it is essential that procurement is involved early in the Emergency Operations Center to be aware of the decisions taken and act accordingly. Higher procurement maturity requires procurement involvement in these decision-making moments. Procurement should also be involved in logistics decisions (e.g., if and where to keep warehouses across the state).

The fifth and final aspect refers to the **characteristics of the procurement staff**, both in terms of size and competence. Having an adequate number of people is a necessary but not sufficient condition to reach a higher procurement maturity. A mature procurement department is characterized by a staff able to handle a heterogeneous set of skills and competencies, such as the ability to use and interpret big data analytics, logistics, and supply chain competence (inventory management, global sourcing, international transportation) that are essential especially during disaster response.

2.3 ADDITIONAL DIMENSIONS FOR DISASTER RESPONSE

Based on our interviews and analysis, the following dimensions were extended to the Maturity Model to characterize the level of preparedness to disaster response.

The first was **emergency team governance**. As noted in the prior example, having a strong relationship between procurement and the emergency team is critical. In smaller states, this may be less of an issue, as a great deal of informal networking between workers at the state level may occur, and communication flows openly. There may be more silos between procurement and emergency management in larger states, which is often housed in a state DHS agency. At higher maturity levels, procurement was called on in the earliest stages of the pandemic to coordinate or physically co-locate with the emergency management team. Some states had “playbooks” for emergency management that automatically included the procurement and contracting experts as part of the team. Procurement was able to identify existing suppliers that could provide response materials (with the exception of PPE) through existing contracts. In the case of PPE, existing distributors (e.g., Cardinal, McKesson, Grainger) did not have access to supply, so procurement was called in to help identify and vet suppliers. In advanced states, procurement’s expertise and their knowledge in supporting and managing emergency procurements are well-recognized. Conversely, in some states, agencies went off on their own. They started to contract with unknown brokers, which led to problems with claw-backs of funds when these unknown and disreputable suppliers were unable to perform. In such cases, procurement was called on to help expedite payments and obtain regulatory exceptions rapidly.

A second important aspect refers to **strategic stockpiling**. Stockpiling is a strategy that involves carrying inventory in a designated storage location, such as a warehouse, and allocating that inventory to those areas facing the greatest need in an emergency disaster situation. Having a strong stockpile function is a function of having a strong pandemic playbook. Advanced states had playbooks not just for a pandemic but for any type of emergency.

For example:

“We conducted a Consequence Management Table exercise (CMT) on the pandemic, which is part of our playbook. This involves running scenarios for a particular incident, including what teams to put together, what services to trigger, who is at the table, and who needs to be consulted. Procurement was definitely part of that playbook. Just having that prior planning and structure in place helped us to get off on the right foot when the pandemic hit. This is what an emergency management agency should be doing when not managing an emergency: plan for them and have partners to train on them! We also have playbooks for hurricanes, and we knew what to do in terms of what happens when hospitals are taken off the electrical grid. This is about limited capacity and a surge in hospitalizations, and losing the assets to respond. This helped us on how to plan for activities such as distribution of patient loads or create new alternate care sites. These hurricane plans were very beneficial during the pandemic as we would see healthcare constrict and need grew around the infrastructure.”

Once established, one of the main tasks of the emergency governance team is to conduct a **supply chain risk planning** analysis. This means identifying the government agencies, partners, and suppliers, potentially impacted by the emergency and how this could affect the continuity of the supply of

strategic items. Of course, most of the efforts should be directed to the establishment of the criticality of suppliers. A higher maturity in risk planning will lead to identifying detailed risk management strategies for suppliers of critical goods, together with an action plan to be put in place as far as the emergency occurs to prevent supply disruption.

Another critical aspect of State procurement disaster preparedness maturity is represented by **human resource management**. An emergency does not simply affect suppliers but also the nature of the work executed by the buyers and other stakeholders. The need for social distancing forced the need for smart working for most of the procurement staff, as well as to introduce new procedures to be followed. A mature procurement office needs to be aware of what individuals are critical to the business and must still work on-site most of the time and individuals who, instead, can easily work from home. Further, preventive smart working training should be provided for those who are likely to work from home. Most of the states seemed to be prepared for the sudden need to work remotely. However, situations of unpreparedness still took place. States should establish robust work-from-home programs for procurement in case of an emergency that includes the distribution of secure laptops, internet technology, and other materials to enable individuals to work from home.

Last but not least, there is **IT infrastructure and planning**. A mature SPO must identify the critical backbone and information systems required to allow effective smart working for those procurement people who can work from home and establish back-up emergency procedures to ensure the security of transactions and communication with critical suppliers (e.g., payment to suppliers). Appendix B provides two examples of state procurement offices positioned at Level 2 (**low maturity**) and Level 5 (**high maturity**) maturity models.



PART 3

CONCLUDING THOUGHTS

3.1 SPO AND SUPPLY CHAIN

The pandemic exposed the fault lines in global supply chain sourcing for essential supplies from PPE to food and included both private and public sector organizations. As we emerge from this disaster, it forces us to consider the future of state procurement as we prepare for the next set of emergency challenges. SPOs in a few states have started to establish local PPE production by supporting local business development. Many states and other organizations, including NASPO ValuePoint, have begun to incorporate risk management into new and existing contracts. There is a growing recognition that state procurement needs to include supply chain management. Taking stock of what we have learned from the deep deliberation of experienced public procurement professionals, we highlight what they see as the next step in state procurement to build resilient disaster management systems.

- A. A large-scale disaster like COVID-19 requires states to have long-range planning on strategic supplies, regional supply and production capability, and access to these supplies.
- B. The current involvement of SPOs in states' emergency operations management (EOM), articulated for example, by ESF #7, does not consider supply availability and supply chain as one of the weakest links in the states' overall relief operations. This requires rethinking the role of the SPO in the structure of state government at the time of an emergency or disaster and in the organization of EOM.
- C. State procurement must transform from contract management to supply chain management. The purchasing power of states collectively will influence the location decisions and risk management practices of the suppliers in the private sectors. SPOs first need to understand the existing supply chains of the products/services they procure. SPOs need to incorporate risk factors in strategic planning and approach the risks collectively through organizations like NASPO to shape the industry and government policies concerning tax incentives, domestic production, and national/regional stockpile management.
- D. State procurement should seek to adopt a culture of engaging suppliers and a mind-set of managing the whole supply chain. Related to C above, in the context of disaster management, SPOs need to engage in supplier management and supplier development while also understanding warehouse and logistics management. This requires a transformation of the institutional culture of public procurement and the expansion of employee training curriculum to include supply chain education requirements.

3.2 LEGAL CONSIDERATIONS

Events that unfolded in state procurement during the COVID-19 response showed that several legal reforms could better prepare states for the next massive disaster. As the research outlined above showed, many of these reforms relate to the need to consolidate emergency procurement authority in a central procurement official — an SPO with broad and well-defined powers and who can defend the state's interests in a sometimes-bruising contest for emergency supplies. The legal reforms, discussed in detail below, could help secure states' constitutional authority to procure emergency goods, better define the SPO's rights and obligations in an emergency, draw a clear line of division between the responsibilities of state and federal officials, and provide ready legal solutions for public officials struggling to procure critical supplies in a worldwide catastrophe.

A. Recognizing States' Sovereign Authority Under the Defense Production Act: Under the United States federalist system of government, the states bear first responsibility for the health and welfare of their citizens — constitutionally, practically, and politically.⁷ Despite that legal prerogative in the states, and the fact that the federal government left it to the states to purchase their own emergency supplies in the pandemic, press reports confirmed that the federal government repeatedly exercised its powers under the Defense Production Act, 50 USC § 2061 et seq., to divert emergency supplies that the states had purchased.⁸ Serious consideration should be given to whether the Defense Production Act should be amended to recognize the deference owed by the federal government to the states under the Constitution,⁹ much as many other federal laws (such as those governing federal grants, use of National Guard troops, etc.) recognize and defer to the sovereign authority of the states.

⁷ American Bar Association. (2020). *Two centuries of law guide legal approach to modern pandemic*. <https://www.americanbar.org/news/abanews/publications/youraba/2020/youraba-april-2020/law-guides-legal-approach-to-pandemic/>

National Conference of State Legislatures. (2014, October 29). Responsibilities in a public health emergency. <https://www.ncsl.org/research/health/public-health-chart.aspx>

⁸ Falzone, D. (2020, May 6). "Like a bully at the lunchroom: How the federal government took control of the PPE pipeline. *Vanity Fair*. <https://www.vanityfair.com/news/2020/05/how-the-federal-government-took-control-of-the-ppe-pipeline>

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Rose, J. (2020, April 15) *A 'war' for medical supplies: States say FEMA wins by poaching orders*. All Things Considered: NPR. <https://www.npr.org/2020/04/15/835308133/governors-say-fema-is-outbidding-redirecting-or-poaching-their-medical-supply-or#:~:text=Organization-,A%20'War'%20For%20Medical%20Supplies%3A%20States%20Say%20FEMA%20Wins,of%20poaching%20supplies%20they%20ordered.>

⁹ Congressional Research Service. (2013). *Federalism, state sovereignty, and the Constitution: Basis and limits of congressional power*. <https://www.everycrsreport.com/reports/RL30315.html>

- B. Allocating Responsibilities in an Emergency:** Concerning procurement, the pandemic response could be divided into two phases: (1) the initial emergency response to mitigate the spread and impact of the disease, which was largely left to the states, and (2) the production and nationwide distribution of the vaccines many months later, which the federal government handled (though state and local governments were left to distribute and deliver vaccines locally). Although experience through the first phase of the pandemic showed that the states were ill-equipped to deal with a massive international catastrophe, there was little legal guidance when the federal government should take first responsibility for emergency procurement and distribution (as the federal government later did with the vaccines). An open question is whether this allocation of responsibilities in a disaster should be left entirely to the political process.
- C. Consolidated Information on Emergency Procurement Authorities:** During the pandemic, federal procurement benefited greatly from a consolidated set of emergency authorities, outlined in Federal Acquisition Regulation (FAR) Part 18, 48 CFR Part 18. This compendium, which was created in the wake of Hurricane Katrina, did not create new authorities but instead gathered in one place the emergency procurement authorities that can be critically useful in a crisis. See 72 Fed. Reg. 46342 (August 17, 2007). States may wish to consider creating similar catalogs of emergency procurement authorities for their own state officials to facilitate rapid procurement responses in a catastrophe.
- D. Defining the Chief Procurement Officer's Emergency Responsibilities:** The pandemic showed that state procurement officers might, in an emergency, need to take control of all steps in sourcing and distributing emergency supplies, from purchase through delivery. The statutes which frame the responsibilities of chief procurement officers, such as section 2-201 et seq. of the American Bar Association (ABA) Model Procurement Code, should be reviewed and updated to ensure that the emergency responsibilities of the chief procurement officer are fully addressed, and to make it clear that, in an emergency, a chief procurement officer's responsibilities may need to expand rapidly.

APPENDIX A. RESEARCH METHODOLOGY

With the support of the NASPO team, members of the NASPO network were invited to participate in the research by email in September 2020. Interviews were conducted between September 2020 and January 2021. Snowballing was also used to get additional interviewees, which includes suppliers, members of state and federal government agencies. In the end, we were able to organize interviews with 47 states and the District of Columbia. As of January 10, 2021, ninety-one interviewees participated in a total of 66 interviews. Each interview lasted about an hour, producing about 20 pages of transcription. We also collected archival data from news reports and transcripts of monthly CPO calls (organized by NASPO) during the on-going pandemic.

APPENDIX B. APPLICATION OF THE PROCUREMENT MATURITY MODEL

Note: Figures 1 and 2 represents two generic examples, and they do not refer to any specific state.

Figure 1

Level 2 State Procurement Maturity Example

OVERALL MATURITY RATING		LEVEL 2 (OUT OF 5)
ORGANIZATIONAL CONTEXT	<ul style="list-style-type: none"> • CPO reports to the Chief Administrative Officer (CAO), the CAO reports to the Director of DAS/COO, that reports to the government (3rd level in the organizational chart) • Centralized procurement • Procurement responsible for everything except higher ed purchasing and construction • Ad hoc involvement in the EOC, no warehouse functions available • 59 people, no supply chain specific background 	
	DISASTER RESPONSE	
EMERGENCY TEAM GOVERNANCE	Ad hoc emergency planning and committee	
STRATEGIC STOCKPILE PLANNING	Selective stockpiling of critical goods (e.g., masks), but no deployment planning	
SUPPLY CHAIN RISK PLANNING	Discussions and meetings with critical partners on emergency planning; no formal collaboration plans	
HUMAN RESOURCE MANAGEMENT	Electronic and print communications on emergency event precautions such as pandemics are distributed, but no formal training in place	
IT INFRASTRUCTURE PLANNING	Work-at-home procedures identified, but no IT resources are allocated to emergency situations	

Figure 2*Level 5 State Procurement Maturity Example*

OVERALL MATURITY RATING		LEVEL 5 (OUT OF 5)
ORGANIZATIONAL CONTEXT		<ul style="list-style-type: none"> • CPO reports to the Secretary, who reports to the Governor (2nd level in the organizational chart) • Centralized procurement • Procurement responsible for everything except higher ed purchasing and construction • Planned involvement in the EOC, several warehouses available across the state • 54 people, diffused supply chain competences
DISASTER RESPONSE		
EMERGENCY TEAM GOVERNANCE		State invests in a dedicated emergency planning and committee, in charge of realizing extensive documented plans by function, with pilot runs and simulation analysis
STRATEGIC STOCKPILE PLANNING		Strategic stockpiling of several critical goods; critical suppliers and distribution service providers if needed, with detailed deployment plans. Stocks are situated and traced to the item level of robust rotation plans to ensure expired supplies are refreshed on a consistent basis.
SUPPLY CHAIN RISK PLANNING		Formal supply chain pandemic risk analysis identifying critical weaknesses; standardized, detailed supplier segmentation logic that allows the State to identify critical and/or bottleneck suppliers within their network
HUMAN RESOURCE MANAGEMENT		Defined joint action plans for critical workers (and suppliers) are used to educate and train personnel involved in emergency operations
IT INFRASTRUCTURE PLANNING		Fully integrated IT plan with redundancies and work-at-home plans tested and validated

As we can see, in a situation characterized by higher maturity (and, so, the capability to respond better when disasters occur), the state procurement office is positioned at a higher level in the state chain of command, it is highly centralized (with strategic decision-making responsibilities on the goods and services managed), and it can count on a high number of employees with strong competencies (particularly in the supply chain management area). State procurement is involved early in emergency operations and participates in strategic decisions.

An emergency team governance (that includes procurement) exists in charge of realizing contingency plans to be followed when disasters occur.

There is systematic inventory management and strategic stockpiling of critical goods and a detailed analysis of supply (and supplier) risks. Work-from-home procedures are clearly defined, and procurement employees receive periodic training on what to do and how to adapt their way to operate during an emergency.

An IT plan detailing the systems and the technical adjustments needed to support remote working is defined (and actionable, if necessary) so that the procurement process workflow is not at risk of being interrupted.

The differences compared to a lower state of maturity of state procurement are evident. In the case of lower levels of procurement maturity, the main differences involve the positioning of the office in the state organizational chart (usually at lower levels); the decision-making responsibilities assigned to procurement (usually mostly related to the operational aspects of the procurement process); the type of competencies owned by procurement employees (usually more administrative); the involvement in emergency operations (usually a low extent and/or at a later stage); and the definition of the different components of disaster preparedness (usually less structured and detailed).