



Management. Manufacturing. Mobility.

Helping Protect Lives, Save Global Economies by Applying
3M's Lessons Learned During the COVID-19 Pandemic

3M Government Affairs

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Lessons Learned, Lives Protected

Clear, coordinated management. Flexible manufacturing facilities, processes and workers. Seamless and timely mobility. When combined, these elements ensure a pandemic response is successful and sustainable.

As one of the world's leading science companies, and a major supplier of personal protective equipment, 3M offers unique insights from the front lines of the COVID-19 response across more than 70 countries for consideration by governments worldwide.

While we all hope COVID-19 is a once-in-a-lifetime global challenge, we know the impact goes beyond lives lost and economies decimated. We have learned what happens when the global supply chain, governments, and the world's healthcare system are stretched to their limits.

We cannot afford to learn these lessons again. At 3M, we offer to lend our expertise to identifying the next challenges and developing public-private partnerships to solve them.

From the operating room to construction sites, the definition of an essential worker has evolved, as has our ability to anticipate and better address the unique needs of the global workforce. National critical infrastructure workers make an entire nation function. While heroic healthcare workers have led the fight against COVID-19, let us remember industrial workers and others whose efforts are essential to ensure we have access to electricity, water, transportation, food, medicine, non-pandemic healthcare and other essential services. They too need protection for business continuity during a pandemic.

For nearly 120 years, through global challenges of all kinds, 3M has stepped up again and again, extending its hand to governments around the world as a trusted partner.

As we look ahead, we see an interconnected world that must find more ways to work together. 3M stands ready to provide its expertise and support.

'Win-win' public-private collaborative relationships and mutually beneficial arrangements help ensure that nations will have access to the products and technologies they need when they need them in times of crisis.

Management, Manufacturing, Mobility: Policies to Prepare for the Next Pandemic

With COVID-19, spikes in the demand for personal protective equipment (PPE) were **20X to 40X of normal**. Even the entire global PPE industry capacity has not been enough to meet that demand.

Creating the right frameworks for rapid response means that governments coordinate their response to ensure a unity of effort, work with private manufacturers to make and distribute more PPE, and partner across the supply chain to quickly deliver equipment.

Businesses and governments must build strong relationships, rooted in trust and transparency, so that when the time comes to work together for the good of people around the world, there is no delay in creating and executing a solid plan.

Having a common playbook increases the likelihood of success.

1. Establish national stockpiles.

Governments that use stockpiles to respond to a sudden spike in demand are more resilient. When a global event causes a worldwide rush, the only viable option for meaningful immediate access is an established and well-maintained stockpile of needed supplies within a country's borders. It's the primary way governments can assure essential workers and especially healthcare workers are protected so they can provide patients with care in the earliest days of and throughout an emergency.

2. Assure stockpiling is mandated and funded.

Governments must have a *Resilient and Sustainable Emergency Stockpile & Supply Chain* mandated in public health laws as a non-negotiable and fully funded national requirement. National stockpile programs need robust and transparent distribution framework, accurate data, and tactical plans to ensure supplies reach those in need.

3. Make emergency response budgets immediately available.

Governments can respond to a sudden national call to action if they have the budgetary and contracting flexibility to procure what they need.

4. Ensure mobility through prioritized and effective distribution of limited resources.

Government planners that worked with established manufacturers with the capacity to manufacture at scale, with access to needed raw materials at scale, and with access to existing and robust distribution channels, were able to get the most product quickly to those who needed it the most. Centralized government direction and public-private partnerships ensure supply chains and distribution networks focus on essential workers and public health priorities. Governments must require collection and analysis of distribution and use data to properly distribute resources to those who need it the most.

5. Clarify Legal Authorities.

Governments have a variety of legal and regulatory tools available to address pandemics. Such tools include emergency powers to manage and coordinate the production and distribution of PPE to protect the public health, authority to suspend tariff and nontariff cross-border trade barriers and measures, and the ability to expedite product regulatory approvals, such as "emergency use authorizations." Strong public-private sector partnerships can be had when government, producers, and distributors work together to remove legal and regulatory impediments to the timely distribution of PPE at scale to the areas and recipients with the greatest needs.

6. Establish "Emergency Use Authorization" mechanisms.

Governments must assure availability of public health "Emergency Use Authorization" regulatory powers as part of their public health laws to enable rapid access to substantially equivalent supplies of PPE without regulatory delays. This includes access to products available beyond their national borders. The prompt issuance of appropriate EUAs should be prioritized as a tool for governments to access a larger supply chain of products easing potential scarcities.

7. Fight fraud and Price Gouging.

Governments must coordinate with law enforcement, customs authorities and the private sector to globally and locally fight product fraud, counterfeit, and price gouging activity. Manufacturers are invaluable partners in this fight, but they are limited by civil remedies and they lack criminal and other law enforcement legal powers. Governments should prioritize the use of these

powers to protect the public from illegal and unethical activities. Partnerships are essential.

8. Open global access to largest array of products needed.

Governments open access for their essential workforce, including healthcare workers, to more products when they do not have restrictive one-of-a-kind standards. By having PPE product specifications, and their performance and use-standards harmonized with the rest of the world, countries and trading regions will open their access to a broader global supply chain. Out-of-step or unique PPE regulations can make government procurement far more difficult. However, careful attention should be maintained in harmonization to ensure the quality and effectiveness of the PPE will remain high.

9. Minimize trade restrictions.

Governments should minimize trade restrictions for flow of goods through their borders. Countries that erect export restrictions may score a short-term win, but supply chains inevitably adjust and flow around them, leaving them as islands with less access to supplies.

10. Establish Public-Private Partnerships.

Governments that move to enter Public-Private Partnerships with established, best-in-class manufacturers fare better than those that issue simple tenders and request for proposals (RFPs) with little knowledge of the complexity of industry supply chains or the challenges associated with establishing manufacturing at scale. A pandemic is not the right time to be partnering with companies trying to figure out how to enter the PPE supply chain for the first time.

11. Understand the differences and roles of various forms of PPE.

Planners and policy makers should work with industry experts to understand the differences between disposable and reusable respirators, face coverings and masks, procedural masks, appropriate gloves and coveralls, PAPRs, etc. Confusion over and conflating forms of PPE creates both occupational health and safety risk as well as inefficiencies and potentially gives rise to wasted resources and fraudulent activity.

Trade Policy Recommendations

Trade restrictions are not substitute for a robust, resilient sustainable national stockpile. While the short-term availability of products may be moderated through trade barriers, as an instrument of public health policy and foreign relations, these measures have had mixed results and ultimately are counterproductive. Here are some observations:

1. Export restrictions minimize appetite for investment.

The purpose of export limits in this context is often to increase the supply available for domestic needs. Companies often invest in factories to supply a region, not just one country. Any temporary gain from limiting shipments abroad will discourage local firms from ramping up production and investing in new capacity and may even incite reciprocal export restrictions by other countries. A short-term gain leads to a long-term loss in production capacity and investment appetite. Companies do not invest in countries with unpredictable trade and regulatory practices.

2. Trade barriers jeopardize public health cooperation with other governments.

Erosion of trust goes beyond public health matters. Often, trading partners will retaliate. Retaliations can impact other products or raw materials. Global supply chains in medicines and medical equipment make every nation vulnerable to retaliation from tariff and non-tariff barriers.

3. Export bans and protectionist industrial policies often cause a reciprocal response from other nations.

The imposing country may find conditions of competition abroad worse for its industries well after the pandemic has been tackled.

National Stockpile Policy Recommendations

Within the umbrella of a national policy to establish national stockpiles for emergency preparedness and response, we recommend the following characteristics of a robust, resilient and sustainable national stockpile:

1. The Stockpile must always be stocked with products within their applicable shelf-life.

Stockpile inventories should regularly be assessed and rotated to keep stockpiles current. Longer

shelf-life products may help ensure the investment value of public funds is maximized.

2. The Stockpile must have product sizes and shapes to help achieve effective end user fit.

Better mix of products ensures more the essential workers can be protected.

3. The Stockpile must match the demand projected in the national pandemic plan.

Analytic tools enable modeling of supply chain needs. These tools use the national plan parameters to estimate stockpile size. Stockpile size enables governments to determine minimum readiness levels of their inventories and maximize public value.

4. The Stockpile must offer the right product mix (single use respirators, reusable respirators, etc.).

Product offerings in different form factors enable governments to deploy a range of PPE to essential workers that is well suited for the relevant hazards, be it pandemics or other disasters that create spikes in the need for PPE.

5. The Stockpile must have appropriate stock turnover and ease of management.

National stockpile programs must ensure inventory is easy to manage. Assuring minimum PPE product types, while maximizing protection of end users, enables stockpile managers to maintain fewer stock units with increasing effectiveness.

6. The stockpile is from a manufacturer that is experienced in pandemic preparedness and has shown resilience as a supplier to government health authorities.

Stockpiled items should be sourced from established manufacturers that have the capability to work with governments and meet sporadic and modest spikes in demand through built-in surge or reserve capacity. Stockpiles sourced from a manufacturer with deep pandemic experience allows for increased continuity of vital operations and institutional memory in public health crises. Fraud, price gouging, and counterfeits can best be avoided by working with existing national health authority suppliers and partners. Proven suppliers with resilience and longevity are essential in responding to pandemics cycles. Governments want to partner with companies that are continuing to optimize and expanded their capabilities and capacity.

7. The Stockpile is procured from a manufacturer with global footprint.

Stockpiles should be sourced from established manufacturers with global production capacity and secured sources of raw material. Manufacturers must possess the ability to mitigate supply constraints, including export restrictions imposed by other nations by having the geographical flexibility to switch from one of their sources of supply to another in response to government requests.

Leading Collaborations to Develop New Solutions

Global leaders called on scientists, researchers, institutions and corporations to collaborate to develop new countermeasures and increase production of essential resources. 3M has led the way in collaborating with other companies to develop personal protective equipment and other tools used in the fight against COVID-19.

Policy makers should consider the full range of measures to encourage and drive collaborative efforts: leadership, regulatory flexibility, and enabling legislation. Government should foster the culture of innovation and consider methods to enable comprehensive understanding of the capabilities and contributions of industry partners to advance solutions.

At 3M, our collaborative efforts and innovative culture have brought to the fore:

- Supporting regulators evaluating the efficacy of respiratory protection products.
- Introducing new products such as disinfecting wipes, cold chain refrigeration, and health information data analysis to help public health officials to make informed decisions.
- Engineering and productivity enhancements to increase supplies.
- Working with others to develop N95 decontamination applications, expand PAPR production, and partnering with to developers of rapid test technologies.

Global Experience. Local Expertise. 3M is Proud to Partner.

3M has worked with governments worldwide on a range of disaster responses.

Health Epidemics		Disasters
2003	SARs (CoV)	France Forest Fire
2004		Indian Ocean Earthquake and Tsunami
2005		Pakistan Earthquake, Hurricane Katrina
2006		Ecuador Volcano, Indonesia Earthquake/Tsunami
2007		
2008		Hurricane Ike and California Wildfires
2009		
2010	Pandemic H1N1/09 Virus	Haiti Earthquake
2011	Pandemic H1N1/09 Virus	Japan Earthquake and Tsunami, New Zealand Earthquake
2012		Hurricane Sandy
2013	MERS	Philippines Super Typhoon, Southeast Asia Haze, Oklahoma Tornado
2014	Ebola (filovirus)	
2015	MERS	Yellow Dust (South Korea, China)
2016		Hurricane Matthew, Baton Rouge Flooding
2017		Hurricanes Irma, Harvey and Maria
2018		
2019	Covid-19	California Wildfires, Australia Brushfires
2020	Pandemic COVID-19	Global Wildfires