Supply Chain Collaboration in Novel Coronavirus (COVID-19) Crisis

Snapshot Highlights – April 20–May 1, 2020

About This Document

Given the fluid situation, this document is prepared to provide a snapshot of collaborative efforts in response to the COVID-19 crisis. With a few exceptions, data are based on a review of literature published during April 20–May 1, 2020, including managerial journals, industry reports, and relevant web resources. Content was analyzed to discern key areas of supply chain collaboration at the time of this review to raise awareness and get supply chain managers up to speed on opportunities to engage in supply chain collaboration amid the COVID-19 crisis.

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Supply Chain Collaboration in Response to the COVID-19 Crisis

With the ongoing ravage of the COVID-19 virus in the United States and around the world, the healthcare supply chain continues to be stressed as the demand exceeds available supplies for essential medical equipment such as personal protective equipment (PPEs) and human ventilators. A noticeable pattern began to emerge in this situation. Organizations across industries, including those outside the healthcare sectors, as well as public agencies, non-profit organizations, and individuals are collaborating—some are unorthodox partnerships—to address various supply chain issues. Collaboration is emerging in varying partner sizes and areas of collaborative focus, ranging from COVID-19 intelligence (e.g. database, dashboard, analytics), manufacturing, sourcing, distribution and logistics, to supply chain–wide management. Below are examples of such collaborative efforts.

Collaboration in COVID-19 Intelligence

- **Data Coalition.** The Data Coalition brings together diverse cohort of members from across data community, including renown companies such as Amazon Web Service (AWS), Booz Allen Hamilton, Deloitte, SAP, IBM, Intel, Morningstar, GS1, among others. Examples of Data Coalition members’ efforts related to the COVID-19 pandemic are as follows (Data Coalition 2020).
  - **AWS COVID-19 data lake.** Amazon Web Services (AWS) COVID-19 data lake is now publicly available. The public data lake is a centralized repository of up-to-date and curated datasets on or related to the spread and characteristics of the novel coronavirus (SARS-CoV-2) and its associated illness, COVID-19. Hosted on the AWS cloud, this curated data lake is seeded with COVID-19 case tracking data from Johns Hopkins University and The New York Times, COVID-19 testing data from the COVID Tracking Project, hospital bed availability from Definitive Healthcare, and research data from over 45,000 articles about COVID-19 and related coronaviruses from the Allen Institute for AI (AWS 2020; Data Coalition 2020). For more information, please visit [https://aws.amazon.com/covid-19-data-lake/](https://aws.amazon.com/covid-19-data-lake/)
  - **data.world.** data.world collected up-to-date and trusted open data related to COVID-19. Scientists, analysts, researchers, businesses, and others all over the world are working together in data.world to track trends, find clues, and share insights (Data Coalition 2020). For more information, please visit [https://data.world/datasets/covid-19](https://data.world/datasets/covid-19)
  - **Data Foundation.** The Data Foundation has launched a new household survey to understand the impacts of novel coronavirus in the United States. The COVID Impact Survey will offer policymakers and the public relevant and timely insights about health, social, and economic impacts associated with the pandemic. A prototype of the survey was launched in April through a partnership between the Data Foundation and the National Opinion Research Center. The first week (April 20–26, 2020) of data collected in the COVID Impact Survey are now available at covid-impact.org/results. Additional details about the project and opportunities for contributing are available at [www.covid-impact.org](http://www.covid-impact.org) (Data Coalition 2020; Data Foundation 2020a, 2020b).
  - **Denodo.** Denodo maintains a Coronavirus Data Portal for the purpose of integrating disparate global data about COVID-19, curating them, and then providing them to data consumers such as data scientists, analysts, and researchers. Data users can combine these data sets with their own data – either using their own tools or Denodo sandbox environments – to create deeper insights into the disease. These combined data sets can be contributed back to the Coronavirus Data
Portal to be shared with other users (Data Coalition 2020; Denodo 2020). For more information, please visit https://www.denodo.com/en/page/coronavirus-data-portal

**COVID-19 HPC Consortium.** The COVID-19 High Performance Computing (HPC) Consortium is a unique private-public effort spearheaded by the White House Office of Science and Technology Policy, the US Department of Energy, and IBM to bring together federal government, industry, and academic leaders who are volunteering free compute time and resources on their world-class machines. Consortium members and affiliates manage a range of computing capabilities: from small clusters to some of the largest supercomputers in the world. They offer not only computational resources, but also software, services, and deep technical expertise to help COVID-19 researchers execute complex computational research programs (Data Coalition 2020; COVID-19 HPC Consortium 2020). For more information, please visit https://covid19-hpc-consortium.org/

**Tableau COVID-19 Data Hub.** Tableau Software has created the COVID-19 Data Hub as a resource for accessing and analyzing the latest data on the novel coronavirus from vetted data sources, including Johns Hopkins University, the Centers for Disease Control and Prevention (CDC), and the World Health Organization (WHO). The hub offers dashboards created by Tableau and other organizations, as well as resources for creating your own visualizations from the data. The effort is aimed at helping organizations better understand which parts of those supply chains are hardest hit by the disease as well as the potential effects of the virus on their operations, from mapping the outbreak against employee location data to help determine work from home policies, to tracking inventories of clinical supplies. Government programs and financial services organizations are also making use of the data as they seek to understand the impact of shelter-in-place policies and to understand where individual support programs, small business loan programs, and the like are most needed. This Data Hub includes global data tracker to help you stay updated on the confirmed case and death totals, the spread of coronavirus, and the places most impacted by this pandemic; community-built visualizations to interact with the full dashboard; and starter kits and prepared data to help you do your own analysis to understand the impact of Coronavirus (Data Coalition 2020; Tableau 2020; Olavsrud 2020). For more information, please visit https://www.tableau.com/covid-19-coronavirus-data-resources

**USAFacts.** USAFacts is providing open-source data for county-level COVID-19 confirmed cases and deaths compiled from government sources. The datasets are updated throughout the day with a full refresh at the end of each day. The county-level visualization is unique to USAFacts and the underlying data is available for download. This interactive feature aggregates data from the Centers for Disease Control and Prevention (CDC), state- and local-level public health agencies. County-level data is confirmed by referencing state and local agencies directly (Data Coalition 2020; USAFacts 2020a, 2020b). For Coronavirus stats and data, please visit the USAFacts Coronavirus Hub at https://usafacts.org/issues/coronavirus/. For live map visualizations, please visit https://usafacts.org/visualizations/coronavirus-covid-19-spread-map/

**Isolat: IDSS COVID-19 Collaboration.** In the context of the COVID-19 pandemic, trusted data and actionable insights are essential for decision makers both policy makers and business managers alike. Isolat is a volunteer collaboration organized by MIT Institute for Data, Systems, and Society (IDSS) to provide systematic and rigorous analyses of data associated with the Covid-19 pandemic in order to inform policy makers. While the specific questions are evolving as more data is collected, Isolat is addressing the following three broad areas: (1) creating a data structure of heterogeneous data sets (e.g., spread of virus, mobility, interventions); (2) performing prediction of various critical
time-dependent variables; and (3) understanding the effects of intervention and policies on the spread of this virus (IDSS 2020). For more information, or to collaborate with the group, please email idss-isolat@mit.edu.

COVID-19 National Response Portal: HCA, Google Cloud, and SADA collaboration. HCA Healthcare, Google Cloud, and SADA teamed up to launch the COVID-19 National Response Portal designed to help healthcare providers across the country safely share and display anonymous, aggregated metrics from hospital systems into a single platform. Built and operated by SADA, the portal is running on Google Cloud. Hospital systems across the country can submit data each day, providing metrics such as ICU bed supply and utilization; ventilator supply and utilization; total numbers of positive, negative, and pending COVID-19 test results; and total numbers of healthy patients who have been discharged. Additionally, the platform leverages publicly available datasets, including data on local shelter-in-place policies, as well as traffic and mobility patterns, to show how public behaviors are impacting the spread of the virus. HCA will provide statistical data from 185 hospitals, and has invited 4,000 hospitals across the country to join and share data on the platform. By pooling our data into one cohesive platform with real-time view of the COVID-19 pandemic, best practices can be shared to better prepare communities across the country for this unprecedented pandemic (Kent 2020; McGrail 2020). For more information, please visit https://onboarding.nationalresponseportal.com/

National Safety Council, Campbell Institute, and ORC HSE collaborations. In a joint effort to help their members respond to safety-related issues amid the COVID-19 pandemic, the National Safety Council (NSC), together with the Campbell Institute, has teamed up with ORC HSE Strategies LLC to provide resources. The partnership with ORC HSE, a membership-based global health, safety and environmental networking and service firm, will provide both organizations’ members with access to: (1) Benchmarking: Access to Campbell Institute benchmarking collaboration tools; (2) Surveys: ORC HSE’s regular pulse surveys and NSC biweekly surveys of employers on COVID-19; (3) Insights: Shared data from both sets of surveys; and (4) Enhanced expertise: ORC HSE’s knowledge on COVID-19 regulatory issues. Together, ORC HSE and NSC represent nearly one-third of the Fortune 500 community. By joining forces to expand the number of leading organizations participating in benchmarking will enhance understanding of how companies are confronting COVID-19 and the risks to their workforce, providing resources for best practice information on this pandemic (Safety+Health 2020).

Collaboration in Medical Device Manufacturing

PPE Manufacturing Collaboration

Manufacturing Coalition. Manufacturing Coalition represents hundreds of manufacturing companies nationwide. The aim is to combine the expertise and knowledge within the manufacturing members to support the public and private sectors in their efforts to mitigate against the COVID-19 spread and assist essential workers who are in dire need of PPE. A vast majority of coalition members can pivot their production lines to create COVID-19 related products and supplies such as N95 masks, disposable gloves, sanitizing gels and liquids, ventilators and ventilator housings, COVID-19 testing kits, aluminum components for blood analysis tools, and more in less than seven days and begin distribution as needed at a fair cost. This swift transition is possible because members have diverse manufacturing capabilities including: Metal/Pre-
Fabrication, Food and Beverage, Medical device manufacturing, Clothing and Textile, Injection Molding, Petroleum, Chemicals, Plastics, Transportation and Supply Chain, Paper and Wood and 3D printing. More information on pricing, orders and how to get involved is available at www.manufacturingcoalition.com (Manufacturing Coalition 2020).

**Masks Now Coalition.** The Masks Now Coalition was formed under the umbrella of the Democratic Coalition, a national political advocacy group. Led by nineteen organizers directing over 11,000 volunteers in every state and Puerto Rico, the Coalition developed a 3-layer mask pattern, bringing together the best elements of circulating patterns into a design which is quick and easy to sew. Its goal is to give individuals the ability to make homemade masks for personal uses in order to conserve the manufactured masks for healthcare workers and doctors. Coalition partners include Democratic Coalition, Rosie Sews, Million Mask Mayday, Created for Crisis, Lawyers for Good Government, Coronavirus Army, and Resistbot (Masks Now Coalition 2020).

**CannonDesign, SUNY Buffalo, materialsIn, Oxford Pennant, Stitch Buffalo, The Factory Buffalo, and Fisher Price collaboration.** CannonDesign has formed a new coalition of designers and makers, working to create protective masks for health workers in lower acuity environments, which would free up the regulated N-95 makes for those on the front lines. Initial partners include SUNY Buffalo, materialsIn, Oxford Pennant, Stitch Buffalo, and The Factory Buffalo. The toymaker Fisher Price is also supporting the initiative (Cassidy 2020).

**MasksOn.** MasksOn brings Boston’s medical, academic and tech communities to collaboratively design and manufacture durable, reusable and sanitizable protective gear for high-risk clinicians in direct contact with COVID-19 patients by repurposing full-face snorkel masks (Fretty 2020).

**Ford Motor collaborations**

- **Ford Motor and Thermo Fisher Scientific collaboration.** Ford Motor and its alliance, Thermo Fisher Scientific, are working together to help expand COVID-19 testing. Ford helped its partner adapt machinery to produce plastic vials used in drive-through coronavirus test collection (Barbella 2020).

- **Ford Motor and Joyson Safety Systems collaboration.** Ford Motor’s union with airbag supplier Joyson Safety Systems will provide hospitals with reusable gowns made from airbag material (nylon) (Barbella 2020).

- **Ford Motor and UAW collaboration.** Ford is now producing face masks, in collaboration with the United Auto Workers (UAW) union, at its Van Dyke Transmission Plant for internal use globally and pursuing certification for medical use (Automotive Fleet 2020; Newmarker 2020).

- **Ford Motor and 3M collaboration.** Ford is collaborating with 3M, the primary US producer of N95 masks, to step up production of the masks and an all-new air-purifying respirator (PAPR). Since late March, Ford manufacturing, purchasing and supply chain experts have been embedded at 3M manufacturing facilities to help increase production output of PAPRs and N95 respirators at 3M’s US-based manufacturing facilities (Automotive Fleet 2020; Barbella 2020; Newmarker 2020).

**Human Ventilator Manufacturing Collaboration**

- **Ford Motor and GE Healthcare collaboration.** Ford Motor is working with GE Healthcare to build air-pressured ventilators, with a goal of manufacturing 50,000 units in the next 100 days (Automotive Fleet 2020; Cunnane 2020; Dow Jones Newswires 2020; Ferrari 2020; Newmarker 2020).
**General Motors and Ventec Life Systems collaboration.** GM, partnering with Ventec Life Systems, is now making 30,000 ventilators for the national stockpile in a $489.4 million contract with the Department of Health and Human Services. Under the contract, GM is expected to deliver 6,132 ventilators by June 1 and the remainder by the end of August. In order to ramp up production, GM converted its auto-parts plant in Kokomo, IN, into a ventilator factory staffed by paid volunteers from the UAW union, which represents GM employees (Cunnane 2020; Dow Jones Newswires 2020; Ferrari 2020).

**Xerox and Vortran Medical Technology collaboration.** In a Connecticut-California agreement, Xerox, best known for its office copying machines, is partnering with Vortran Medical Technology to produce single-use, disposable resuscitators for use as backup ventilators during disease outbreaks, mass casualty events and other disasters. Each unit is designed to be used once for a patient in the early stages of respiratory diseases (McCoy 2020).

**Dyson and TTP collaboration.** One surprising entrant into the ventilator race is Dyson. Dyson is teaming with The Technology Partnership (TTP) on a new ventilator, CoVent, that draws on Dyson’s air purifier expertise. CoVent can be mounted on a hospital bed and run on battery power in field-hospital conditions. Dyson intends to first produce 10,000 devices for the United Kingdom’s National Health Service, and further committed to providing an additional 5,000 units to international efforts (Barbella 2020).

**Collaboration in Essential Medical Supply-Demand Connection**

As the healthcare supply chain has been disrupted by the health crisis and is struggling to handle a demand shock of pandemic magnitude, healthcare providers are struggling to find new way to source supply (Daga 2020; Masini 2020). Various collaborative efforts have emerged to identify and expand sources for much needed medical products. Examples are:

**Supply Connector: Good Talk, Status Forward and companies in the outdoor recreation industry collaboration.** Brands pivoting to address shortages of PPE and other necessary products face a slew of obstacles in locating correct materials, regulatory information, and direct connections to essential providers. To address these obstacles, a new website platform, Supply Connector, was created through a volunteer collaborative effort by business management firm, Good Talk and web design agency, Status Forward, with support from the NC Office of Outdoor Recreation Industry, Growing Outdoors Partnership, North Carolina Outdoor Recreation Coalition, and Outdoor Gear Builders. Supply Connector links manufacturers, material suppliers, and essential providers across the United States with the vital information and connections they need during the COVID-19 crisis, and to bolster continued collaboration, sharing of domestic resources, and the health of US manufacturing in the wake of the crisis. Manufacturers can search for materials, design validation, labor, or finished goods as well as list their ability to provide any of them. Essential providers can list their needs for finished goods or their ability to validate product design. Once the immediacy of the COVID-19 crisis is over, the team hopes the platform can continue to be a resource for all US manufacturers and suppliers (Breedlove 2020). For more information, please visit supplyconnector.org or contact Sarah Wood at connect@supplyconnector.org.

**Rapid Supplier Connect: IBM, Project N95, Dun & Bradstreet, RapidRatings, KYC SiteScan, and Thomson Reuters collaboration.** IBM has launched a blockchain network, called Rapid Supplier Connect, to help government agencies and healthcare organizations to identify and onboard new,
non-traditional suppliers who have pivoted to address the shortage of equipment, devices, and supplies. The network is based on IBM’s existing Trust Your Supplier Blockchain Network. Organizations supporting the blockchain network include Dun & Bradstreet, which contributes identity resolution, firmographic data, and supplier risk and viability scores; RapidRatings, which provides financial health data on suppliers; KYC SiteScan, which provides “Know Your Business” due diligence report access; and Thomson Reuters, which provides access to its CLEAR customer due diligence tool, to provide buyers with access to real-time and comprehensive data to vet suppliers and identify potential fraud risks. Rapid Supplier Connect is available at no cost until August 31, 2020, to qualified buyers and suppliers in the United States and Canada (Landi 2020b). For more information, please visit https://www.ibm.com/blockchain/solutions/rapid-supplier-connect

**Demand Data Hub: Project N95 and GetUsPPE collaboration.** Project N95 and GetUsPPE are engaging in Demand Data Hub partnership. The Demand Data Hub works to empower supply chain solutions being developed by both Project N95 (PPE for sale), and GetUsPPE (donated PPE). By merging these two leading PPE demand databases, the Demand Data Hub now contains more than 7,000 requests for PPE from American healthcare providers, and is the authoritative destination for aggregating PPE demand nationwide. Through this partnership, PPE supply is expanded to include the full range of available solutions: manufactured supply for sale, donated medical-grade supply, and donated open-source supply. Combined with a robust understanding of nationwide PPE demand, Project N95 and GetUsPPE are able to coordinate PPE distribution to most equitably and comprehensively meet the nationwide need. Here’s how it works. For more information, please visit www.getusppe.org/the-demand-data-hub-powering-a-collaborative-ppe-supply-chain/

Source: Demand Data Hub (2020)
- **Global clearinghouse: The Worldwide Supply Chain Federation and JOOR collaboration.** The Worldwide Supply Chain Federation (TWSCF)—a collaborative, and mutually supportive coalition of open and multidisciplinary grassroots communities focused on supply chain, innovation, and technology—created a *global clearinghouse*, in partnership with JOOR, to vet and onboard PPE and related suppliers along with set fixed pricing. This is orchestrated with the help of numerous donations and both US and overseas manufacturers. JOOR, the world’s industry-standard wholesale platform for fashion, beauty, and home, is providing TWSCF a *private marketplace* for their verified suppliers and buyers, which enables instant access for manufacturers, and the ones who need it most on the front lines. Manufacturers are encouraged to participate by going to the TWSCF website to match production capabilities with a list of healthcare products in demand. Healthcare facilities can sign up for the PPE they most need and will be granted access to the private marketplace once onboarded (*SupplyChainBrain* 2020). For more information, please visit [https://theworldwidesupplychainfederation.com/](https://theworldwidesupplychainfederation.com/)

- **The Exchange: Stanford Health Care, Premier, Resilinc and UPS Healthcare collaboration.** California-based Stanford Health Care, along with group purchasing organization Premier and Resilinc, a supply chain risk management software company, have created a cloud-based platform for the healthcare industry. The partnership also includes UPS Healthcare. The platform allows hospitals interact with vetted peer organizations to locate and then initiate the process of borrowing or exchanging items listed on the platform. Medical distributors and other organizations also can use the platform to donate medical supplies, which will be disbursed through an integrated donation center within the exchange. It launches in mid-April and is available at no cost for hospitals and healthcare organizations. The platform is on track to register more than 2,000 hospitals and healthcare organizations by the end of April (Anderson 2020; Resilinc 2020). For more information, please visit [https://theexchange.resilinc.com/healthcare/apply/](https://theexchange.resilinc.com/healthcare/apply/)

- **Protecting People Everywhere: American Hospital Association (AHA), Microsoft, Kaiser Permanente, Kearney, Merit Solutions, and UPS collaboration.** A coalition of private and nonprofit organizations have banded together to launch Protecting People Everywhere, an initiative powered by the HealthEquip™ app through which PPE donors and their donations can be matched with potential recipients. The coalition includes the American Hospital Association, Kaiser Permanente, Kearney, Merit Solutions, Microsoft, and UPS. Protecting People Everywhere builds on the 100 Million Mask Challenge, an AHA-led effort to leverage private sector partnerships to secure millions of masks for the physicians, nurses, and front-line workers. For more information on how to donate or request PPE, please visit [www.health-equip.com](http://www.health-equip.com) or download the app available in the App Store or Google Play (Kaiser Permanente 2020).

- **Dynamic Ventilator Reserve: Hospitals and health systems collaboration.** A new public-private program was announced on April 14 to aid in distributing ventilators to critical areas in the fight against COVID-19. This collaborative voluntary effort led by a group of US hospitals and health systems has created an online inventory of ventilators and associated supplies, such as tubing and filters, to support the overall needs of combatting the COVID-19 pandemic. Hospitals and health systems will input into the database available equipment that they are able to lend to others in the country. The American Hospital Association (AHA) will manage the virtual inventory and will work with FEMA when this virtual inventory might be needed to supplement the national emergency stockpile. Hospitals and health systems that would like to participate in the virtual network can get more information by contacting the AHA at 800-424-4301 (AHA 2020).
**SEKO CARES: SEKO Logistics, Inspire, and Project C.U.R.E. collaboration.** SEKO Logistics has launched a new SEKO CARES initiative in partnership with Project C.U.R.E., the non-profit humanitarian relief organization, to buy, donate and inspire support for frontline responders treating patients affected by COVID-19. SEKO will be supported in this endeavor by Inspire Marketing Services and Project C.U.R.E., which will help to distribute the equipment to the hospitals, clinics, and local health departments most in need. Until now, Inspire has been responsible for developing and managing the company’s own branded products, but as part of the SEKO CARES team, they are now exclusively focusing on the sourcing, management and distribution of vital PPE donations throughout the United States. These donations will initially focus on the hardest hit areas starting with New York, Chicago, Louisiana and Michigan, where the spread of coronavirus continues to peak for area hospitals. SEKO then plans to widen distribution to other locations such as Arizona, New Jersey, Colorado and Florida as needs arise (Lennane 2020). For more information, please visit [https://www.sekologistics.com/us/about/seko-cares/](https://www.sekologistics.com/us/about/seko-cares/)

**Emergency Resource Exchange (ERx): Northwestern University and Rheaply collaboration.** To move vital medical resources during the COVID-19 pandemic where they are needed most, Northwestern University is collaborating with Chicago startup Rheaply to create Emergency Resource Exchange (ERx), a central hub that quickly connects Illinois healthcare providers with supplies. Users will be able to register for free and create a request or listing (Masini 2020). For more information, please visit [https://outreach.rheaply.com/covid19-response/](https://outreach.rheaply.com/covid19-response/)

**Collaboration in Distribution and Logistics**

Largely focusing on essential medical supply, collaboration in distribution and logistics emphasize expediting shipment and increasing transport and logistics service capacity.

**Project Airbridge: HHS, FEMA, FedEx, UPS, DuPont, 3M, Medline, Cardinal Health, McKesson, and Henry Schein collaboration.** Coordinated by the US Department of Health and Human Services (HHS) and the Federal Emergency Management Agency (FEMA), Project Airbridge continues to expedite movement of commercially pre-sourced and commercially procured critical supplies from the global market to medical distributors in various locations across the United States. As of May 1, 2020, Project Air Bridge has completed 104 flights, with the following critical supplies shipped (FEMA 2020a):

![Critical Supplies Shipped](https://www.sekologistics.com/us/about/seko-cares/)

- 7.3 million face shields
- 111.8 million surgical masks
- 607,283 coveralls
- 888.6 million gloves
- 78.3 million N95 respirators
- 16.9 million gowns
Business Roundtable, Project HOPE, and Healthcare Ready collaboration. Business Roundtable, Project HOPE, and Healthcare Ready have joined forces to deliver protective gear and equipment to America’s frontline health workers. Business Roundtable CEO members and Project HOPE mobilize protective gear and other vital equipment from manufacturers worldwide. The supplies will be allocated to health facilities in coordination with Healthcare Ready, which is already working in partnership with the Federal Emergency Management Agency (FEMA) to help allocate protective gear donations (Project HOPE 2020).

Collaboration in Supply Chain-Wide Management

COVID-19 Healthcare Coalition. The idea behind the effort is to crowdsource capabilities from the private sector and use data analytics and evidence-based decisions to respond to the health crisis. With top experts and industry leaders sharing plans and resources – and working collaboratively – coalition members can deploy resources more effectively and offer better situational awareness to those at the front lines. Coalition members include big tech companies Amazon Web Services (AWS), Microsoft and Salesforce as well as healthcare technology vendors Arcadia.io, athenahealth, Buoy Health, Epic, and nference. Health systems involved include HCA Healthcare, Intermountain Healthcare, Rush University System for Health, and the University of California Healthcare System. Other industry partners are MITRE, LabCorp, Leavitt Partners, CommonWell Health Alliance, and MassChallenge. Mitre, a national research and development center, will serve as a program manager to facilitate communication, aggregate de-identified data, from clinical insights to resource requirements like beds and ventilators, and coordinate the response across a range of organizations (Landi 2020a).

C19 Coalition. The C19 Coalition brings crucial partners together to help build an efficient, unified supply chain for PPE and lifesaving medical devices. C19 Coalition members are working on every part of the supply chain: supply, demand, fulfillment, logistics, funding, and information tracking. Since March, Coalition Partners have manufactured and distributed more than 100 million net new units of PPE across the country. The Coalition is working collaboratively with the National Governors Association (NGA) and directly with states like New Jersey to acquire more information about the greatest needs and how to activate public-private partnerships. C19 Coalition partners include the followings (C19 Coalition 2020):
**PPE Supply Chain Network.** The goal of the PPE Supply Chain Network is to empower trusted collaboration among a network of existing Salesforce and Neurored customers who can offer PPE products or logistics services to fight the COVID-19 pandemic. The PPE Supply Chain Network has the following Members and Network Communities: (1) **Technology Companies and Network Enablers:** These players digitally connect network members and their supply chains, via Software as a Service (SaaS) solutions in accordance with Salesforce Care – A Free Rapid Response Solution to Help Companies Navigate Covid-19. The members of this group include Salesforce, Neurored, S4G, and Veem; (2) **Manufacturers and Sourcing Specialists:** These companies provide Freight Forwarders access to PPE products in the required quantities; and (3) **Freight Forwarders:** These companies manage the transportation of PPE products from the manufacturers to the customers. Currently, the members of this group are DG, Europartners, Mexproud, Transglobal, DRV, and Acciona Freight Forwarding. Graphic below illustrates how the members are working together (Neurored 2020).

**Government-led public-private collaboration: FEMA whole-of-America response’s Supply Chain Task Force.** The Supply Chain Task Force executes a strategy maximizing the availability of critical protective and lifesaving resources through the Federal Emergency Management Agency (FEMA) for a whole-of-America response. Efforts to date have focused on reducing the medical supply chain capacity gap to both satisfy and relieve demand pressure on medical supply capacity (FEMA 2020b).

**Industry pro-competitive collaboration.** With approval from the Department of Justice (DOJ) in relation to antitrust concerns, five private medical suppliers—Cardinal Health, Henry Schein, McKesson, Medline Industries and Owens & Minor—are collaborating to prevent and eliminate supply chain bottlenecks of crucial PPE and other medical supplies needed to fight the COVID-19
pandemic. The collaborations involve manufacturing, finding and creating new supply sources, monitoring demand, distributing supplies to FEMA-designated hotspots, monitoring and negotiating pricing, and sharing various types of data concerned with all of these functions. The companies are required to send written notice to the DOJ when the COVID-19 pandemic is resolved, stating this enhanced degree of cooperation is no longer required and is thereby dissolved (Cosgrove 2020).
References


Lennane, Alex. 2020. “Seko CARES Partners with Project CURE to Support Frontline Medical Staff.” Loadstar, April 9.


McCoy, Kevin. 2020. “‘Scotch Tape and Baling Wire’: How Some Hospitals and Companies Are Responding to Meet America’s Ventilator Shortage.” USA TODAY, April 8.


