![Milken Institute Center for Public Health logo]

# LEARNING FROM COVID-19

## Reimagining Public-Private Partnerships in Public Health

**Sarah Wells Kocsis, Athena Rae Roesler, Jessica Marshall, and Anita Totten**

# About the Milken Institute

The Milken Institute is a nonprofit, nonpartisan think tank. For the past three decades, the Milken Institute has served as a catalyst for practical, scalable solutions to global challenges by connecting human, financial, and educational resources to those who need them. Guided by a conviction that the best ideas, under-resourced, cannot succeed, we conduct research and analysis and convene top experts, innovators, and influencers from different backgrounds and competing viewpoints. We leverage this expertise and insight to construct programs and policy initiatives.

These activities are designed to help people build meaningful lives in which they can experience health and well-being, pursue effective education and gainful employment, and access the resources required to create ever-expanding opportunities for themselves and their broader communities.

# About the Center for Public Health

The Milken Institute Center for Public Health develops research, programs, and initiatives designed to envision and activate sustainable solutions leading to better health for individuals and communities worldwide.

# FOREWORD

Opportunities for fundamental change in the public health enterprise emerged from the sea of challenges presented by the COVID-19 pandemic. In the United States and around the globe, we find ourselves in a unique moment in time to reflect on societal responses to the COVID-19 pandemic, prompting more purposeful consideration of how public health ought to be envisioned and executed.

Public-private partnerships (PPPs) are by no means a new component of public health interventions. However, the challenges and opportunities related to public health PPPs that were exposed and amplified during the COVID-19 pandemic were novel.

In the following report, the Center for Public Health calls for a new model of partnerships focused on public good to create and sustain value in public health. Analysis of COVID-19 lessons learned uncovered three thematic areas where partnerships for public good presented opportunities for future focus to strengthen public health: **1) human capital, 2) logistics, and 3) data infrastructure.** Case studies of each opportunity area demonstrate tangible benefits from employing a partnership model that emphasizes accountability for the public good.

In the US and around the globe, we must capitalize on the shared sense of mission and partnership focus that the pandemic engendered. We need leadership and efforts to uplift our public-health system to achieve shared goals. This leadership must include private- and public-sector partners with aligned goals and defined roles and responsibilities that foster collaboration and accountability to achieve systems-level impact. The Center for Public Health is committed to driving this partnership and systems-level impact so that all individuals and communities are able to build meaningful lives.

Esther Krofah
Executive Director
FasterCures and the Center for Public Health, Milken Institute

# CONTENTS

# INTRODUCTION

The COVID-19 pandemic presented the most significant public health challenge in decades in the United States and globally. Nearly all facets of society scrambled to respond to the crisis while navigating the multitude of existing and emergent complex public-health challenges. Chronic underfunding of our outdated public-health infrastructure, the lack of seamless political coordination, a swirling infodemic, and a strained response all further exacerbated the crisis. As a result, as of December 2021, about 505 million cases have been reported and nearly 800,000 individuals lost their lives to COVID-19 in the United States alone.[1] Furthermore, wide-ranging disparities in COVID-19 experiences, impacted by race, income, gender, and physical environment, underscored the inextricable link between social and structural determinants of health and health equity.[2]

Though the pandemic is by no means over, an increased understanding of prevention measures, the availability of effective vaccines, and promising therapeutic treatments allow us to reflect on the lessons learned up to this point. In the words of Zeynep Tufekci in her *Atlantic* article "5 Pandemic Mistakes We Keep Repeating," "… it is time to imagine a better future, not just because it's drawing nearer but because that's how we get through what remains and keep our guard up as necessary."[3]

Lessons from public-private partnerships strengthened or newly formed during pandemic response are bright spots in imagining a better future. The Milken Institute Center for Public Health leveraged our network of thought leaders to maximize learnings from this unique moment in time, focused on examining the private sector's role and responsibility in supporting public health. This report uncovers and spotlights innovative and collaborative partnerships that emerged in response to the crisis and offers lessons to promote and protect public health so that they can be leveraged for the future, both in times of crisis and non-emergencies.

Given the COVID-19 pandemic demonstrated how public health touches nearly all facets of society, this report will assist policymakers, private-sector leaders, and all those looking to craft sustainable, impactful partnerships.

The Milken Institute has examined COVID-19 lessons learned within the context of several different sectors. For lessons learned from COVID-19 within the biomedical ecosystem, FasterCures, a center of the Milken Institute, published a report, *Lessons Learned From COVID-19: Are There Silver Linings for Biomedical Innovation?*, focused on research collaboration, acceleration of product development, clinical trial design and execution, collection and use of real-world data and evidence, and racial and ethnic disparities in health care and research. For private funders looking for opportunities to create more resilient health and research systems, the Milken Institute Center for Strategic Philanthropy developed *Infrastructure, Readiness, and Resilience: Giving Smarter to Create a Long-Term, Biomedical Systems-Based Response to COVID-19*.

# BACKGROUND

Public-private partnerships (PPPs) are by no means a new component of public health interventions, so much so that one discussant interviewed for this report remarked that the "triple P has almost become trite." However, consensus on their definition, utility in public health, and best practices are continually evolving. Though there is no single, internationally accepted definition of a PPP, the World Bank's reference guide defines them as a "long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance."[4] Most of these traditional partnerships involve government agencies contracting with the private sector for specialized skills, including infrastructure construction or services like IT support and food distribution. However, these contracts are often bound by arduous procurement processes. There is an inherent tension between public-sector health officials prioritizing the public good and strict budgets and the private sector's need to maximize profit. This tension is exacerbated by the cultural divide between public health and the private sector, something repeatedly emphasized throughout our discussions with thought leaders. Beyond culture clash, stakeholders often aren't aligned on exact goals, implementation plans, nor how success and accountability will be measured. The challenges and opportunities related to public health PPPs were amplified during the COVID-19 pandemic as every sector scrambled to respond.

**Figure 1: The 10 Essential Public Health Services describe the public health activities that all communities should undertake, serving as a well-recognized framework for carrying out the mission of public health.**

*Source: Adapted from Public Health National Center for Innovations (2020)*
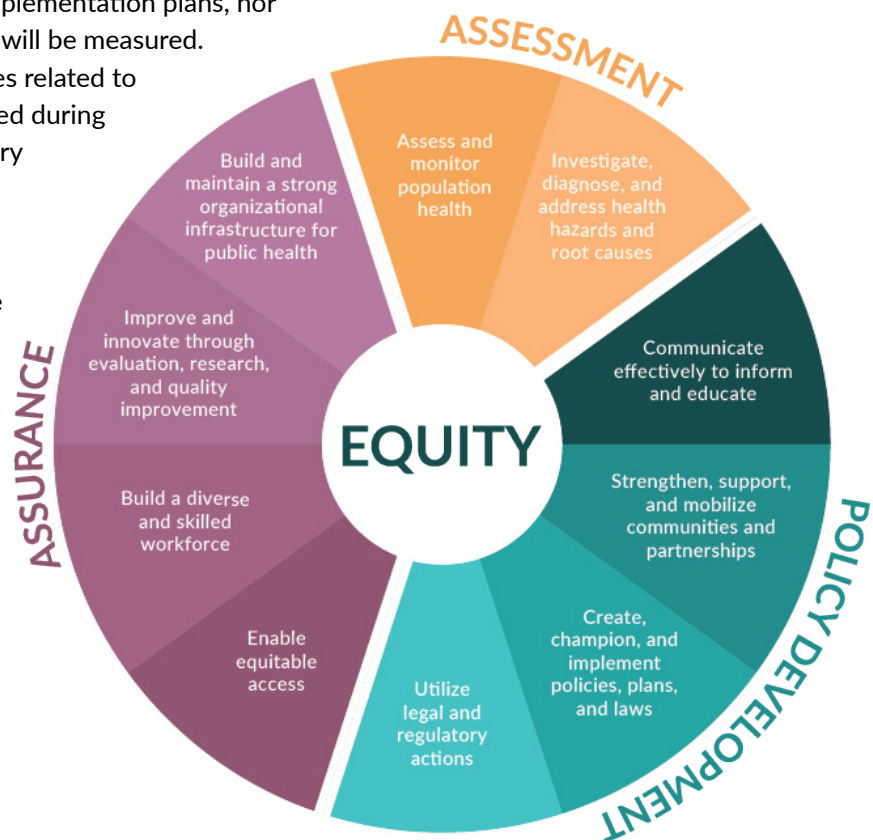
While the *10 Essential Public Health Services* are often thought of as being spearheaded by the public sector, the COVID-19 pandemic emphasized that all sectors are agents of public health working to promote policies, systems, and environments that protect and promote the health of all people in all communities. PPPs were integral to COVID-19 response, the most famous being Operation Warp Speed, the partnership between the US Department of Health and Human Services and the Department of Defense with vaccine companies that successfully accelerated the development of multiple vaccines. This multi-sector response underscores how a patchwork of strategic collaboration ultimately uplifts public health. A recent Harris Poll and Milken Institute Listening Project demonstrated most individuals surveyed felt businesses proved themselves as critical leaders throughout the parallel health and economic crises, with 75 percent of respondents agreeing that large companies with resources, infrastructure, and advanced logistics are even more vital now to their country's future than before COVID-19.[5] The Listening Project further emphasized the need for policies that empower collaboration across sectors while equipping leaders with the skills to address social issues, economic prosperity, and a more equitable society. In line with the conclusion, "the aperture of responsibility for business leaders has widened, but so too has the opportunity," these trends support the need for a new type of public-private partnership.[6] An evolved PPP model must extend beyond the traditional call to merely exchange resources across sectors toward a model that emphasizes accountability for the public good.

This brief discusses key learnings from the COVID-19 pandemic and opportunities for future focus that support an evolution from traditional PPPs toward **Partnerships for Public Purpose.** This new partnership model, a concept originally proposed by The Brookings Institution, emphasizes sustainable, systemic public impact over the collaborators' sectors.

This focus builds on the Milken Institute Center for Public Health's previous work to identify learnings for resilient food system partnerships with a focus on building long-term resilience, putting the most vulnerable at the center of partnership efforts, and making structural commitments to bolster infrastructure. Partnerships for Public Purpose are poised to prepare for and respond to future emergencies while also strengthening our public health system in times of non-emergency.

# METHODS

In the summer of 2021, the Milken Institute Center for Public Health conducted a landscape analysis to narrow the scope of work and focus area of this COVID-19 lessons learned report. Identifying collaborative public-private partnerships as a major opportunity for further investigation, stakeholder discussions with 32 thought leaders (see Acknowledgements) across sectors focused on uncovering different types of partnership models, identifying promising examples, and cataloging scalable best practices. Insightful comments from these thought leader discussions are included throughout the case studies that follow. In addition to the overwhelming call for a new model for public-private partnerships, throughout these discussions, three thematic areas of focus emerged for partnerships for the public good to create value in public health:

1.  Human Capital
2.  Logistics
3.  Data Infrastructure

The following case studies spotlight each of these opportunity areas. All demonstrate an evolution toward Partnerships for Public Purpose and tangible benefits from them. Though the case studies predominantly focus on the US context, the role of public-private partnerships in response to COVID-19 at the global level deserves equal attention. Many of the changes we note in infrastructure, supply chain, and data are applicable globally, and many other such partnerships were formed to solve for that.

# HUMAN CAPITAL

**The underfunded and understaffed public health workforce was unable to keep pace with increased public health service demand.**



According to the World Bank Human Capital Project, "human capital consists of the knowledge, skills, and health that people invest in and accumulate throughout their lives, enabling them to realize their potential as productive members of society."[7] Human capital in the United States public health system has been underfunded and understaffed for decades. Despite inflation, population growth, and the increasing complexity of public health challenges, the nation's public health workforce has shrunk by 20 percent since 2008, with 62 percent of local health departments seeing their budgets reduced.[8] Since 2014, there has been a 41 percent increase in public health workers planning to leave their jobs.[9]

The pandemic placed massive pressure on the public health infrastructure, exacerbating vulnerabilities of an already under-resourced, understaffed, and overburdened workforce. Even though public health departments pivoted swiftly to address immediate needs, the supply for public health workers could not keep pace with the increased demand for public health services and technical assistance, the latter of which was especially acute during peak periods of the pandemic response.

That void in public health human capital prompted the Fairfax County Health Department in Virginia to join forces with the Institute for Public Health Innovation (IPHI) in May 2020. Formed a decade earlier, IPHI is one of 50 member public health institutes within the National Network of Public Health Institutes[10] working in conjunction with a myriad of public and private partners to protect and improve public health by adding capacity for functions ranging from training to research and evaluation. Officially serving the District of Columbia, Maryland, and Virginia, IPHI acts as an important partner at the state and local levels across the region.[11]

The partnership between the IPHI and the Fairfax County Health Department was forged when Fairfax County foresaw that it did not have sufficient, long-term capacity for the scope of contact tracing needed for Virginia's phased reopening. IPHI has since hired 800 people for the health department over the last 14 months. The hires filled positions such as investigators, contact tracers, community health workers, epidemiologists, data and environmental health specialists, and supervisors/managers, all addressing critical human capital gaps that require a range of public health skills and expertise.[12] Realizing the short- and long-term impact, Fairfax County has since elevated close to 100 of the IPHI's surge hires into senior-level roles at the local health department.

## *"Public health institutes and other groups are in communities layering funding in a way to maximize public health impact."*

The IPHI-Fairfax County partnership exemplifies the essence of the Public Health National Center for Innovations' *Essential Public Health Service #8: Build and support a skilled and public health workforce.*[13] By fostering leadership at all levels, IPHI and Fairfax County increased skills, empowered responsibility, and ensured accountability while deploying high-demand expertise. The caliber of public health talent IPHI sought and quality training provided throughout the COVID crisis were key drivers in achieving an immediate and lasting impact on public health human capital.

## *"The more people are trained to understand [public health] problems, collect data, and evaluate data to determine what to do, the better we can set priorities."*

This approach aligns with a recommendation by the Centers for Disease Control and Prevention (CDC) for quality standards in training and training decision tools and access as strategies for public health workforce development.[14] The Virginia Department of Health promoted IPHI to a bona fide agent in a statewide COVID-19 grant. Now, IPHI is viewed as a part of Virginia's public health infrastructure because of the delivery, execution, and outcomes stemming from the partnership with Fairfax County.

The continuous success of IPHI's and Fairfax County's partnership is in part due to IPHI's operational elasticity allowing for agility and flexibility. The institute was able to re-assign people as the health department stretched for surges and then contracted based on demand for diverse managerial and technical assistance roles to support existing county staff. Evaluating the entirety of the partnership, both the nonprofit and health department had closely aligned, cross-cutting missions, role clarity in the partnership, trust in the relationship, and a similar level of risk-taking involved. The collaboration became a growing and sustainable partnership between a nonprofit, public health institute, and a public-sector health department that offered expertise for the public good.

# LOGISTICS

**Supply chain and last mile logistics required innovative public-private strategic planning and coordination to distribute vaccines efficiently and avoid operational redundancies.**



Whether it is toilet paper, personal protective equipment (PPE), computer chips, video games, and more, the pandemic has disrupted global supply chains and the availability of goods, highlighting the need for more resilient logistics services. The supply chain consists of manufacturing, transportation, and logistics that move goods from where they are made to where they are needed by the consumer.[15] Logistics refers to the overall process of managing how resources are acquired, stored, and transported to their destination.[16] Supply chain and logistics disruptions can be traced back to the beginning stages of the pandemic. Factories all over the world were shut down because workers were sick or in lockdown. As a result, shipping companies followed suit and reduced their schedules due to the anticipated drop in demand for moving goods around the world.[17]

Factories all over the world were shut down because workers were sick or in lockdown. As a result, shipping companies followed suit and reduced their schedules due to the anticipated drop in demand for moving goods around the world.[17]

This was the first of many logistics mistakes made in the supply chain during the pandemic. The demand for household goods boomed because of stay-at-home orders and an influx of money from stimulus funds because China was shipping PPE worldwide, but countries weren't shipping products back.[18] This container scarcity led to a delay in PPE distribution to other countries and 10 times the regular shipping price surge.[19] As containers arrived in the US, there were not nearly enough docks for the number of ships coming into port. While ships were forced to anchor offshore for weeks at a time, the already short supply of dockworkers and truck drivers were often sick or in quarantine. On top of that, countries started hoarding supplies and ceased exports of critical medicines to grow their own stockpiles.[20] Though this supply chain crisis rippled throughout all sectors, and continues to do so, due to a lack of existing infrastructure and fall safes, public health stakeholders and communities acutely felt the lack of resources.

From operationalizing emergency funding to obtaining quality PPE, the public sector had several disadvantages in coordinating this logistical nightmare. Fortunately, the private sector, with its relative nimbleness and experience in innovative logistics, became a strategic partner early in the pandemic. Public-private partnerships were especially essential in ensuring scalable operational efficiency for vaccine distribution. Several states were struggling to operationalize public distribution of the COVID-19 vaccine and were falling short of vaccination goals. In early 2021, Washington Governor Jay Inslee announced a goal to increase vaccination rates from 15,000 to 45,000 vaccinations per day.[21] To help meet this goal, Inslee formed the Washington State Department of Health (DOH) Vaccine Action Command and Coordination System (VACCS) Center, a statewide public-private partnership comprising companies including Starbucks, Microsoft, Costco, Kaiser Permanente, health-care groups, and government organizations.[22] This collection of industry expertise was integral to safely, efficiently, and reliably delivering COVID-19 vaccines to millions of people across Washington state.

Starbucks is the world's largest coffeehouse chain and one of the most visible and well-known brands in the world, serving 100 million customers each week. Unsurprisingly, its over 33,000 global locations[23] were greatly affected by the COVID-19 pandemic, both on an enterprise and operational level. However, Starbucks' unique role in the global logistics landscape positioned itself to help inform public health operational decisions during the pandemic. In many ways, Starbucks is a logistics company with an intricate and vast supply chain translated to quality products, public infrastructure, and human experiences that are culturally relevant to the communities each location serves. Even with its far-reaching global presence, Starbucks is strategic in opening each location to reflect the community and its specific needs. This local footprint and international expertise mirror much of Starbucks' beneficial contributions to the COVID-19 pandemic.

*"The US did not have the necessary experience to improve [the pandemic response]... [Government officials] did not know how to do this, but the private sector did... [Government officials] came to the realization that they do not know how to do this and understood they needed supply chain distributors, hospitals, and the private sector."*

Headquartered in Seattle, Starbucks was one of the key public-private partnerships a part of VACCS in Washington state tasked in January 2021 with increasing daily vaccination rates among a population of 7.6 million residents. As a part of the VACCS Center, Starbucks' primary role was to "assist with operational efficiency, develop models for vaccination centers that can be standardized and reproduced across the state, and help improve the patient experience."[24] Leveraging Starbucks' existing infrastructure as well as logistics services and expertise was most valuable to this task.

The Tryer Center, which serves as Starbucks' test kitchen for new beverages, store designs, and systems, was used to inform "operational efficiency, scalable modeling, and human-centered design to Washington state's vaccine distribution efforts."[25] Starbucks-Tryer partners would observe multiple vaccine centers and then retrofit a portion of the Tryer Center as a mock vaccination site. They then worked with community health workers and discussed issues in the site itself. The largest bottleneck issue was the post-vaccine observation area in mass vaccination sites, where people sat for 15 minutes after their vaccine to ensure they did not have an adverse reaction.[26] It was the largest limiting factor in vaccine site logistics because once that area was filled, the process of admitting people into the site halted due to capacity requirements. There was also the issue of people extending their time in self-monitored observation rooms because they were distracted by their phones, forgetful of when they received their vaccine, or hesitant to leave medical care after receiving the vaccine.[27] This issue was mitigated by providing cards with the time of vaccine as a reminder to patients or cohorts of people admitted and released together. Starbucks' partners also saw language barriers as a logistical issue, so they designed signage with symbols instead of words.[28] They created slow lines for people who want to ask staff questions and fast lines for people without questions to streamline the process further.[29] And in rural communities that lacked larger physical infrastructure sites, they modeled and created drive-through clinics and mobile pop-ups in the Tryer Center.[30] Similar to the way customers place an order at Starbucks, it was important for Starbucks to think about and execute a logistics method for each unique recipient.

*"We need to map out barriers and what is in our sphere to assist true logistical access."*

These findings were published in "Vaccine Playbook for Public Private Partnerships" by Challenge Seattle in March 2021.[31] Therefore, other states and government leaders may leverage the learned knowledge, scale the efficiencies for vaccination sites, and meet their vaccination goals across the country. Starbucks' global insight and knowledge of cultural and contextual nuances, coupled with their breadth of technical expertise, ultimately led to

the success of this public-private partnership. In short, Starbucks' ability to get something important to someone quick was the most valuable transferrable skill to this partnership. Whether the task is to sell a cup of coffee or provide a lifesaving vaccine to someone, human-centered design is where it starts.

The original goal for Washington to increase daily vaccination rates and move "from idea to action in 100 days," according to Starbucks CEO Kevin Johnson, was quickly reached.[32] The goal to help triple the number of vaccines delivered to Washingtonians was met in fewer than 10 days.[33] As previously mentioned, the major reasons why this public-private partnership was such a success were existing global expertise, infrastructure, and matching needs and resources. But the aspects that activated these key areas were the people and the data. Without either of these entities, neither Starbucks nor any other logistics company could understand digital supply networks, find optimal destination routes, anticipate delays, suggest alternative approaches, or track progress. The overall concerted effort and commitment from the Washington State Department of Health, Starbucks, and other stakeholders made it all possible.

As it did for other aspects of our society, the pandemic shed light on many imbalances within our world. Supply chain and logistics management was a concern long before the first case of COVID-19. But it has been shown that public-private partnerships in the logistics sector are valuable, necessary, and successful. The public sector particularly requires private-sector leadership if the goal is to deliver a good or service to the public, especially because the public interacts more with private entities on a daily, monthly, and yearly basis. Although "the government may be purchasing, allocating, and distributing the vaccine...last-mile logistics depend heavily on the private sector."[34] Therefore, ensuring equitable management, building trust, and matching population wants and needs across the public and private sectors are key. This can draw novel connections and contribute to the future successes of these logistical partnerships.

# DATA INFRASTRUCTURE

**Existing public health data systems lack interoperability and function in fragmented silos preventing coordinated response.**



Data infrastructure is essential to public health research, practice, and application. To understand and address public health concerns and support better health outcomes across communities, we must understand what is occurring in communities to inform our decision-making on how to solve complex public health challenges. For the public health data infrastructure to work most effectively, it requires a multisectoral approach aligned for public purposes.

*"Without the data, we can't have structure to determine our immediate needs that should be addressed. We work from the top-down, and that is only possible by collecting the right kinds of data."*

During the beginning of the COVID-19 pandemic, the United States quickly realized the government was struggling to collect real-time, accurate, and integrated data on vaccinations, infections, hospitalizations, deaths, and more. There was no standardization in data infrastructure, with existing systems lacking interoperability and functioning in fragmented silos. Several discussants noted public health departments were still using fax machines for case reporting and data sharing at the peak of the pandemic. While discussing the topic of data infrastructure with thought leaders, the need for interoperability and modernization of data was validated repeatedly. Discussants recalled the struggles prior to and during the COVID-19 crisis with data infrastructure and the need for integrated, comprehensive, real-time data that can be measured and monitored. One discussant shared the cautious tale of federal partners requesting the private sector to provide additional data throughout the COVID-19 pandemic without acknowledging where they will go or how they will be used. Capacity, capability, and coordination were all hampered without real-time data.

*"A fire needs to be lit for making data systems and procurement better for states in a way that can be faster and not cost so much. State governments are far behind; we should modernize and prepare—we need better systems."*

Beginning in April 2020, the Federal Emergency Management Agency (FEMA) at the National Response Coordination Center, the US Department of Health and Human Services (HHS), and private-sector distributors were in coordination with the jurisdictional partners and hospitals to create the Supply Chain Data Tower, a new public-private partnership that began in an informatics storage and processing application. Now coined the Data Tower, it grew throughout the pandemic to include pharmaceutical distribution, COVID-19 testing equipment, and hospital inventory. FEMA's Supply Chain Task Force also developed hot zone analysis to inform resource allocation decisions in the most vulnerable areas experiencing the COVID-19 crisis. This was brought to life by folding the consolidated information from the task force into HHS Protect, whose resources were previously used to produce prioritizations for supplies. This new data infrastructure tool allocates critical resources to the hot zones by using an algorithm that includes private-sector supply data, public-health data from the CDC, resource request forms/frequency of requests, and historical supply information available.[35] This type of information technology is needed to manage a vaccine site's appointment system, workforce, supply repository, and administrative procedures. However, it is often missing in state and local public health infrastructure.[36]

While FEMA was coordinating the supply chain, private-sector distributors, such as AmerisourceBergen, were initially challenged with how to address and achieve fair and equitable allocation to their existing customers. In executing its response plan of action in mid-March 2020, AmerisourceBergen leveraged Johns Hopkins and CDC public-health data on transmission and ICU bed capacity to move inventory in such a way to target hot zones.[37]

The first hot zones were New York City, California, and Washington state. Public health data were used in a unique way to determine how supplies reached the communities hardest hit by COVID-19. The idea was to have a clearer picture of where supply needs were emergent and crucial. This allocation tool was separate from the Data Tower. Although the government was integrating similar factors in the Data Tower, it was not always visible to the private-sector distributors.

Initially, FEMA, HHS, and the private-sector partners operated under these parallel, unconnected systems, which led to operational challenges. Barriers in communication led to insufficient cooperation, duplicative reporting, and confusion. The existing pandemic plans had information requirements for the public sector but lacked guidance on data collection and reporting.[38] As pandemic response evolved, AmerisourceBergen opted into data sharing in the Data Tower, recognizing it had essential information to share to ensure communities were supported. Similarly, AmerisourceBergen used a tool within the Data Tower to have a bird's eye view of federal and regional inventory, which allowed the distributor to counsel its customers and partners on where to move product to the most critical regions during the pandemic.

*"Advisors were needed to advise how to move products through the process. It was an epic public-private partnership that the US government could not have done without the private sector. The collaboration was phenomenal."*

The Data Tower multisector collaboration identifies inventory movement and supply chain through the centralization and modernization of data, including allocation predictions using public-health data. Existing and longstanding relations between distributors, such as Amerisource Bergen, and the government play a role in integrating data across sectors.

*"Public health had been preparing for years but when COVID hit, they tossed all those plans out of windows. FEMA was involved, feds were doing things in localities and not communicating about it. The information was not getting where it needs to go, all while states [were setting up their own infrastructure] are doing their own things."*

The public-private partnership behind the genesis of the Supply Chain Data Tower is a powerful example of data-driven decision-making. The Data Tower model emphasizes the effectiveness of using quality informatics through a multisector approach and commitment to drive decision-making in response to a public health crisis. The viable lesson about this collaboration and something leaders can take note of is the ability to leverage data sources, consolidate data, fold data into historically siloed systems to be able to inform how to meet the country's most vulnerable and critical needs, therefore impacting public health of the hardest hit communities. This learning is further emphasized in conversations around streamlining social determinants of health-related data, currently the wild west of health data. As stakeholders consider gold-standard approaches to measuring, collecting, storing, and using social determinants data ethically, collaboration and silo-busting are key. Thematic recommendations are communication and coordination for role clarification and goal alignment and a push for high-tech data that is nationally led and collaborative.

# LESSONS LEARNED, RECOMMENDATIONS, AND OPPORTUNITIES FOR FUTURE FOCUS

The lessons learned from our landscape scan, key stakeholder discussions, and the highlighted case studies on human capital, logistics, and data infrastructure underscore the importance of evolving public health public-private partnerships toward a focus on public purpose. The 32 thought leader discussions conducted for this report contributed the following best practices, insights, and key questions to consider to actualize this evolved model. We recommend that those looking to craft sustainable, impactful partnerships for public purpose consider the following:

## GOALS AND PARTNERSHIP DRIVERS

### Recommendation 1: Maintain equity—a central tenet of public health—as a primary and explicit goal when strategizing partnerships.

Equity is at the core of the *10 Essential Public Health Services* framework that was updated in 2020 to bring it in line with current and future public health practice to foster the promotion of policies, systems, and overall community conditions that enable optimal health *for all people in all communities*. Discussants emphasized how our ability to be prepared for the next public health emergency is dependent on addressing health disparities and their drivers. To address these disparities, the disproportionately affected populations need to be a part of policy conversations and strategic planning at the beginning versus enlisted to engage at later stages of implementation.

### Recommendation 2: Define partnerships goals collaboratively with community and holistic stakeholder input.

Discussants stressed rampant partnership fatigue and the need to avoid partnerships without clearly defined goals or purpose. To prevent this fatigue, collaborators should map how they are leveraging strengths in service of the common good. The public sector should reflect on the gap it is trying to fill, how it defined this gap, and why it will be effective to collaborate with a private-sector partner. The private sector can reflect on its willingness to look beyond how it normally does business.

*"Not all public-health partnerships are authentic—some are box-checking."*

## Recommendation 3: Approach partnership and problem-statement formation with empathy and curiosity.

Discussants emphasized how this mindset during problem identification sets the partnership tone. For example, assuming a community's low vaccination rates are due to vaccine hesitancy instead of widespread inability to take time off work to recover from side effects could lead to drastically different interventions. Leveraging tools, like needs assessments and human-centered design, allow partners to investigate their assumptions and whether those assumptions can be validated or not. Often public health challenges are not working well from multiple sides, so a multisector approach might pivot collective response and allow for more impactful policy change. This curiosity extends to the need for partnerships to remain flexible and nimble, iterating approaches and goals based on evolving needs.

*"Partnerships have to have an alignment of interests, competent authorized people who have a vision, strategy, and metrics of success. Most times those are missing because people are focused on smaller events or tactics."*

# PARTNERSHIP ROLES, RESPONSIBILITIES, AND LEADERSHIP COORDINATION

## Recommendation 4: Define leadership roles clearly in coordination with government and non-governmental collaborators.

Lack of shared understanding of partnership roles and responsibilities was a commonly identified barrier that results in day-to-day implementation fraught with conflict and misalignment. Though this is equally important with public-private partnerships, coordination within government was filled with this misalignment during the pandemic. Many discussants mentioned that major pain points throughout the pandemic were a lack of federal leadership coordination with cohesive planning and the need for states to be brought in much earlier in the planning process since they were implementing the response. A clearer understanding of what is within each agency's sphere of control would also improve coordination. Similarly, the emphasis on health-care system response, especially early with hospital-bed capacity concerns, overshadowed public health planning and led to plans being abandoned. Discussants underscored how we have put health care and public health in conflict with each other in terms of role clarity and coordination, often expecting health care to play the role of public health.

## Recommendation 5: Empower the whole-of-society as public health agents by investing in partners who can translate between sectors and staff who bridge cultural divides.

As a result of the public sector's lack of role and responsibility clarity, the private sector was tasked with taking on major public health roles at the forefront of pandemic response. While COVID-19 emphasized how all members of society are public health agents, not all businesses were equipped with the tools or knowledge to fill the necessary response gaps. In experiencing the pandemic, the private sector acquired a deeper appreciation of the value proposition of involvement since their success was based on community health impact. In parallel, public health leaders have become more attuned to providing information and clear guidance to support businesses as an extension of health and safety for their workforce and the community they serve in the long term. One barrier to overcome is to decrease the use of public health jargon so that important, timely communication is accessible to wide audiences.

*"Many traditionally public-health roles fell to health care at the start of the pandemic. Then when it came time, public health had expectations health care would be the one to stand up vaccines, but that is public health's work. We need to work on expectations and give an appropriate level of attention to both sets of roles and responsibilities."*

## Recommendation 6: Invest in longstanding public-private partnerships developed to solve community-level challenges.

Some of the most successful partnerships and collaborations were those that existed before the first case of COVID-19 was detected. These existing relationships meant partners already had built trust, put legal contracts in place, were aligned on larger strategic goals, and were ready to hit the ground running. One such example is Healthcare Ready, whose philosophy emphasizes preparedness centers on the need to strengthen health-care systems holistically, rather than building contingencies that may or may not ever be needed. During the pandemic, Healthcare Ready's longstanding relationships and cemented their role as a connector and translator among public health officials, supply chain and private sector operators, and emergency management officials.[39]

*"Those who expanded their public-private partnerships most successfully had those relationships in place prior and were a step ahead."*

# INNOVATIVE FUNDING MECHANISMS AND INFRASTRUCTURE

## Recommendation 7: Evaluate current funding mechanisms and explore new models showing success in other sectors, such as performance-based block grants and impact bonds.

Given the historic disinvestment in public health in periods of non-emergency, or "boom and bust funding cycles," all 32 discussants mentioned the need for stable, strategic financing. This is complicated by the nuances of siloed public health funding and the strict limits on how funding is moved from the federal to state and local levels. For example, certain large cities receive funding for specific interventions directly from the federal government based on population and disease incidence. This direct funding allowed for some flexibility in COVID-19 response in select cities, but there should be an evaluation of where those dollars went, what difference they made, and if this direct funding model should be scaled. There is little current evaluation of spending because of fears of risking already limited funding. In addition to evaluating existing funding mechanisms, exploring new models showing success in other sectors, like performance-based block grants and impact bonds, may increase flexibility and allow for more creative, time-sensitive collaborations.

*"By the time funding gets to localities, it has so many requirements and limits on how a dollar can be spent that they may not be able to use it effectively. How can we get funding at the local and state level so they can use it for what they need it for? Accountability with flexibility can drive things forward."*

## Recommendation 8: Conduct an inventory of existing and needed human and non-human infrastructure for urgent public health goals to build adaptable playbooks that can be ready and fit for purpose.

Several discussants mentioned the private sector is wary of partnerships that are just monetary philanthropy instead of leveraging their unique expertise or other resources the business community can offer. One of the greatest strengths is the private sector's ability to leverage its existing infrastructure (both physical and human). However, because of lack of coordination, many parallel, redundant systems were stood up, including attempts to build separate supply and distribution chains for medicine, vaccines, and PPE.

*"It is easy to say we can take a system and expand it for COVID contact tracing, but now [we must reflect on] to what extent people took advantage of expanding their systems ... It was a complicated hodge-podge. Nationalized solutions were also complicated. Regardless, we have to meet people where they are rather than coming in from outside."*

# ACCOUNTABILITY FOR SYSTEMS-LEVEL IMPACT

## Recommendation 9: Focus partnership efforts on upstream impact, recognizing the importance of primary prevention and the social determinants of health at the individual, relationship, community, and societal levels.

Nearly all discussants emphasized the importance of upstream, systems-level impact to break the all-too-familiar public health cycle of jumping from crisis response to crisis response. Though many partnerships in COVID-19 pivoted toward secondary and tertiary prevention measures like increasing testing capacity or ensuring access to health care, there is renewed interest in the importance of primary prevention and the social determinants of health. Life expectancy in the United States declined by 1.5 years from 2019 to 2020, the largest one-year drop since World War II. This decline was even steeper when stratified among gender and racial/ethnic groups, with Hispanic populations experiencing a three-year decline in life expectancy. COVID-19 caused 74 percent of the decrease in life expectancy with largely preventable chronic diseases such as diabetes, heart disease, and kidney disease also contributing significantly to the decreased life expectancy.[40] Though medical care contributes to about 20 percent of our health, it receives 90 percent of health spending, with the remaining going toward the social, behavioral, and environmental determinants of health. The partnership infrastructure and momentum built in response to the pandemic should be preserved and leveraged to drive impact in the root causes of poor health outcomes. This same energy should be channeled globally.

*"It is not just about funding public-health infrastructure but our response of getting to the root causes of the problems."*

## Recommendation 10: Evaluate partnership impact strategically with metrics of success related to longer-term public health outcomes instead of delivery of services.

Evolving from the need to define goals, responsibilities, and roles, partnerships for public purpose create the opportunity to center impact metrics beyond the simple delivery of services. Discussants mentioned that partnerships often fail because they are focused only on small tactics instead of impactful results and measures of success. Strategic evaluation must be a component of partnerships from initial planning to ensure accountability and allow for growth. Though this requires long-term, sustainable investments, with all the lessons learned from the pandemic, we have the momentum to overhaul the public health system, investing in the systems and people for the future.

*"This is an opportunity to redesign health departments, where the boxes on flow charts go and who needs to be aware of how to invest in people and systems … There is this big-picture recognition that we cannot go back to what it was; we need to learn and push forward."*

# CONCLUSION

Though we continue to grapple with the ever-evolving stages of the COVID-19 pandemic, public health public-private partnerships strengthened and/or newly formed during the response are a bright spot in imagining a better future. Embracing lessons learned from a new partnership model—Partnerships for Public Purpose—offer opportunities to reinforce and sustain our public health system now and in the future. The recent appreciation and responsibility of all sectors, industries, and communities as agents of public health must carry far past the pandemic while coming together to tackle public health challenges from root causes instead of waiting for a symptomatic crisis. Addressing health disparities and their drivers should be a central tenet of partnership formation, goal setting, and alignment. Partners must work collaboratively early on to envision creative solutions and build implementation roadmaps so that they are ready when a crisis hits, and public health decision-makers and executors have a foundational playbook to work from that can be adapted and tailored to address the needs at hand. The Center for Public Health is eager to leverage our cross-sector network and the broad themes identified in this report to construct effective partnerships that will strengthen, promote, and sustain public health well beyond the COVID-19 pandemic.

# ENDNOTES

1.  "COVID Data Tracker," Centers for Disease Control and Prevention, accessed December 16, 2021, https://covid.cdc.gov/covid-data-tracker/#datatracker-home.

2.  Elissa M. Abrams and Stanley J. Szefler, "COVID-19 and the Impact of Social Determinants of Health," *Lancet Respir Med.*, 8(7):659-661, (July 2020), https://doi.org/10.1016/S2213-2600(20)30234-4.

3.  Zeynep Tufekci, "5 Pandemic Mistakes We Keep Repeating," *The Atlantic*, February 26, 2021, https://www.theatlantic.com/ideas/archive/2021/02/how-public-health-messaging-backfired/618147/.

4.  "What Is a PPP: Defining 'Public-Private Partnership,'" PPP Knowledge Lab, accessed November 8, 2021, https://pppknowledgelab.org/guide/sections/3-what-is-a-ppp-defining-public-private-partnership.

5.  "The Listening Project: Global Perspectives on a Post-Pandemic Future," Milken Institute, accessed November 9, 2021, https://milkeninstitute.org/report/listening-project-global-perspectives-post-pandemic-future/.

6.  Ibid.

7.  "About the Human Capital Project," The World Bank, accessed November 9, 2021, https://www.worldbank.org/en/publication/human-capital/brief/about-hcp.

8.  "NACCHO's 2019 Profile Study: Changes in Local Health Department Workforce and Finance Capacity since 2008" (National Association of County and City Health Officials , May 2020), https://www.naccho.org/uploads/downloadable-resources/2019-Profile-Workforce-and-Finance-Capacity.pdf.

9.  "Public Health Workforce Interests and Needs Survey" (de Beaumont Foundation, 2017), https://debeaumont.org/wp-content/uploads/2019/04/PH-WINS-2017.pdf.

10. "About the National Network of Public Health Institutes," National Network of Public Health Institutes, accessed November 9, 2021, https://nnphi.org/about-nnphi/.

11. "Our Mission," Institute for Public Health Innovation, accessed November 9, 2021, https://www.institutephi.org/who-we-are/our-mission/.

12. Meghan Wolfe and The Public Health Learning Network, "IPHI: Capacity Building for the Public Health Workforce," National Network of Public Health Institutes, March 10, 2021, https://nnphi.org/iphi-capacity-building-for-the-ph-workforce/.

13. "10 Essential Public Health Services," Centers for Disease Control and Prevention, March 18, 2021, https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html.

14. Public Health Workforce Development," Centers for Disease Control and Prevention, August 12, 2021, https://www.cdc.gov/csels/dsepd/strategic-workforce-activities/ph-workforce/action-plan.html.

15. Peter Goodman, "How the Supply Chain Broke, and Why It Won't Be Fixed Anytime Soon," *New York Times*, October 31, 2021, https://www.nytimes.com/2021/10/22/business/shortages-supply-chain.html.

16. Will Kenton, "Logistics," *Investopedia*, December 29, 2020, https://www.investopedia.com/terms/l/logistics.asp.

17. Peter Goodman, "How the Supply Chain Broke, and Why It Won't Be Fixed Anytime Soon."

18. Ibid.

19. Ibid.

20. Scott Gottlieb, *Uncontrolled Spread: Why COVID-19 Crushed Us and How We Can Defeat the Next Pandemic* (New York: HarperCollins, 2021).

21. "Inslee Announces State Plan for Widespread Vaccine Distribution and Administration," *Medium*, January 18, 2021, https://medium.com/wagovernor/inslee-announces-state-plan-for-widespread-vaccine-distribution-and-administration-62196dcf5ecf.

22. Ibid.

23. "Number of Starbucks Stores Globally, 1992–2021," Knoema, April 16, 2021, https://knoema.com/infographics/kchdsge/number-of-starbucks-stores-globally-1992-2021#:~:text=(29%20March%202021)%20Today%20Starbucks,with%20nearly%201%2C700%20stores%20worldwide.

24. Linda Dahlstrom, "Offering to Serve: Starbucks Joins Effort to Help Speed COVID-19 Vaccination Delivery," Starbucks Corporation, January 19, 2021, https://stories.starbucks.com/stories/2021/offering-to-serve-starbucks-joins-effort-to-help-speed-covid-19-vaccination-delivery/.

25. "Starbucks Support of Safe and Equitable Vaccine Distribution," Starbucks Corporation, April 19, 2021, https://stories.starbucks.com/press/2021/starbucks-support-of-safe-and-equitable-vaccine-distribution/.

26. "Starbucks Support of Safe and Equitable Vaccine Distribution."

27. Ibid.

28. Ibid.

29. Ibid.

30. Ibid.

31. "Vaccine Playbook for Public-Private Partnerships" (Challenge Seattle, March 2021), https://www.doh.wa.gov/Portals/1/Documents/1600/VaccinePlaybookForPublicPrivatePartnerships.pdf.

32. Linda Dahlstrom, "Offering to Serve: Starbucks Joins Effort to Help Speed COVID-19 Vaccination Delivery."

33. Ibid.

34. Thomas H. Lee and Alice H. Chen, "Last-Mile Logistics of Covid Vaccination—The Role of Health Care Organizations," *The New England Journal of Medicine* 384:685-687, (January 2021), https://doi.org/10.1056/NEJMp2100574.

35. "Pandemic Response to Coronavirus Disease 2019 (COVID-19): Initial Assessment Report: FEMA Operations January through September 2020" (FEMA, January 2021), https://www.fema.gov/sites/default/files/documents/fema_covid-19-initial-assessment-report_2021.pdf.

36. Jennifer Smith, "Mass Vaccination Sites Will Mean Scaling Up Logistics Coordination," *The Wall Street Journal*, January 30, 2021, https://www.wsj.com/articles/mass-vaccination-sites-will-mean-scaling-up-logistics-coordination-11612004400.

37. "Five Lessons from the Healthcare Supply Chain's Response to COVID-19," AmerisourceBergen, accessed November 8, 2021, https://www.amerisourcebergen.com/pharmaceutical-distribution/coronavirus-covid-19-information/five-lessons-from-covid-19-response.

38. "Pandemic Response to Coronavirus Disease 2019 (COVID-19): Initial Assessment Report: FEMA Operations January through September 2020."

39. "Approach," Healthcare Ready, accessed November 9, 2021, https://healthcareready.org/approach/.

40. Elizabeth Arias et al., "Provisional Life Expectancy Estimates for 2020" (National Center for Health Statistics, July 2021), https://www.cdc.gov/nchs/data/vsrr/vsrr015-508.pdf.
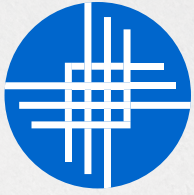
# ACKNOWLEDGMENTS

# ABOUT THE AUTHORS

**Sarah Wells Kocsis** is a director at the Milken Institute Center for Public Health, where she leads a portfolio of work focused on prevention, chronic disease, infrastructure, and other timely issues that are critical to advancing the role of public health in supporting healthy and productive communities. For the past two decades, she has helped organizations at the nexus of science, innovation, business, and philanthropy drive public-policy solutions to optimize patient access to care. Wells Kocsis has held senior-level positions at Boston Scientific, Amgen, Hologic, and the Society for Women's Health Research. She holds a Master in Business Administration from the University of Virginia's Darden Graduate School of Business and a BS in biology from Tulane University.

**Athena Rae Roesler** is an associate director at the Milken Institute Center for Public Health. Her work champions and evaluates public-health policies, solutions, and partnerships to build a more equitable world. Most recently, she led a partnership with the DC government to understand better how cities can leverage food procurement to support nutrition, the environment, and equitable local economies. Roesler's experience in public health started literally from the ground up, teaching thousands of students about nutrition as a farm-based educator in Arizona, Washington, DC, and South India. Her graduate research centered on the human right to food, a dignified emergency food system, and strategies to reduce health disparities. She was part of a research team evaluating California's sugary drink tax and warning label policies. At Leah's Pantry, a nonprofit supporting California SNAP-Ed, she furthered behavioral economics-based and trauma-informed nutrition security initiatives. Roesler holds a Master of Public Health in public health nutrition from the University of California, Berkeley and a BA in public health and educational studies from American University.

**Jessica Marshall** is an associate at FasterCures, a center of the Milken Institute. In her role, she conducts daily in-depth research for the COVID-19 Vaccine and Treatment Tracker, contributes to ongoing health-equity issues occurring across the biomedical ecosystem, and facilitates the development of trust within the health technology and data sector. Prior to FasterCures, Marshall was a graduate fellow at the Veterans Health Administration, where she aided studies focused on identifying veteran groups experiencing health disparities in the US and building trust to advance veteran health equity and knowledge of the COVID-19 virus. She holds a BS in biochemistry from The George Washington University and a Master of Public Health in global health policy from the Milken Institute School of Public Health at The George Washington University.

**Anita Totten** is an intern at the Milken Institute Center for Public Health, focused on reimagining partnerships in public health. Before joining the Milken Institute, Totten served in nonprofit management positions in the social and human services field, where she gained expertise in streamlining activities by building and leading plans in disaster preparedness, federal nutrition programs, child abuse prevention, workforce development, and anti-poverty programming with various organizations. Totten is driven by impacting communities through grassroots and equitable change while providing individuals and teams with the tools and resources to advance healthier communities. She is completing a Master of Public Health from the University of West Florida and has received a BS in health science from the University of West Florida.