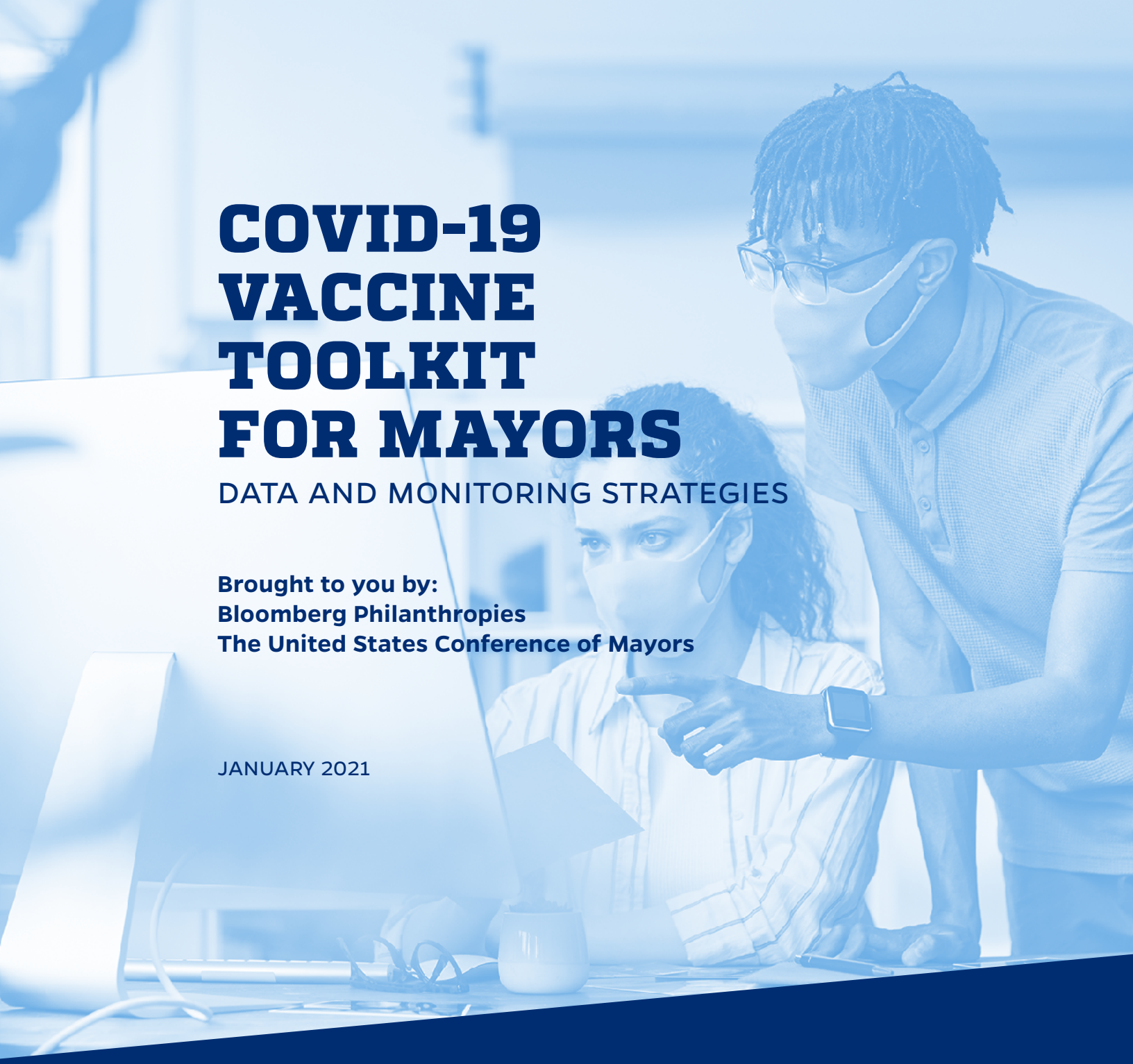

COVID-19 VACCINE TOOLKIT FOR MAYORS

DATA AND MONITORING STRATEGIES

Brought to you by:
Bloomberg Philanthropies
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Context

The COVID-19 vaccine, developed in record time, is the path forward for ending the current pandemic and reopening cities around the world. However, **effective and equitable vaccination** is an unprecedented logistical and public education challenge. Mayors and city leadership play a critical role in responding to this challenge, given their strong connection to residents and deep understanding of local context.

Purpose

The COVID-19 Vaccine Toolkit provides Mayors and their teams the guidance and resources they need to help facilitate the largest vaccination program ever seen in the United States. This toolkit is grounded in extensive research and interviews with leading experts and city leaders across the country with significant experience in public health, municipal emergency management, and crisis response.

Acknowledgments

Special thanks to our partners at Johns Hopkins University, Delivery Associates, and The Behavioral Insights Team for sharing their expertise.

For **more information** please visit bloombergcities.jhu.edu/vaccine.
For any **questions or feedback,** please email coronavirusresponse@bloomberg.org.

TABLE OF CONTENTS

INTRODUCTION: DATA AND MONITORING STRATEGIES

To achieve an effective and equitable vaccination rollout, Mayors need meaningful, high-quality, and timely data. The sheer scale of the vaccination rollout challenge, including its complexity and constantly evolving nature, requires that cities have access to quality data to meet this challenge and protect residents from the virus that has inflicted profound damage, particularly among vulnerable populations. If they haven't done so already, cities need to invest now in their data capabilities to set ambitious targets, track progress, and effectively diagnose and solve problems in real-time.

Ensuring that the vaccination rollout process is effective and equitable is not easy. It requires managing substantial, rapidly changing vaccination data, public health data, and other data across local, county, state, and federal levels while respecting individuals' privacy rights. While data for some suggested metrics may be publicly available, other data may require cities to coordinate with sources beyond city government. However, if Mayors don't invest now, they will not have the tools to effectively and equitably roll out vaccinations and advocate for their cities.

The federal government is also preparing to play a larger role in vaccine distribution. In the Biden administration's newly established "National Strategy for the COVID-19 Response and Pandemic Preparedness," the President issued a number of executive orders to support an effective and equitable national vaccination rollout. As described in "Executive Order on Ensuring a Data-Driven Response to COVID-19 and Future High-Consequence Public Health Threats," the Biden administration is committed to providing transparent data to support vaccination rollout nationwide, standardizing reporting metrics, and supporting states and localities struggling with public health data infrastructure. Cities should keep abreast of new federal resources as they are developed and shared.

This module outlines an effective data strategy for vaccination rollout. It guides readers through three key questions Mayors should ask to assess the effectiveness and equity of vaccination rollout in their city. For each question, we provide a list of metrics and data to consider. Finally, we explain the role of the Data Champion and provide additional resources for municipal data governance.

THREE KEY QUESTIONS MAYORS SHOULD ASK TO DRIVE EFFECTIVE AND EQUITABLE VACCINATION ROLLOUT

A well-constructed data strategy covers three essential aspects of vaccine rollout—administration, supply, and demand. Mayors and their teams should ask three key questions to understand the state of vaccinations in their city. For each question, there are sub-questions and associated metrics Mayors should actively monitor. It is also important to disaggregate data at a granular level to understand what is happening among different population groups. Each metric includes potential sources where the data may be found.

Are vaccines being administered effectively and equitably to priority populations?

To what extent is COVID-19 still spreading in our communities?

To what extent have eligible populations been vaccinated?

Are vaccines being supplied effectively and equitably?

Do we have sufficient vaccination sites in the right locations?

Do we have sufficient personnel to staff vaccination sites and support demand?

Do we have sufficient equipment to support demand?

Do we have sufficient vaccine supplies to support demand?

Is there sufficient resident demand, particularly among priority and vulnerable populations?

Are we meeting our targets for vaccination demand by priority groups?

Do our residents intend to get vaccinated?

Are our communication efforts reaching target populations?

To answer the above questions, cities need a solid understanding of their target populations.

UNDERSTANDING TARGET POPULATIONS

To assess progress and best direct resources, Mayors need to have a solid understanding of target populations: For example, who are the residents that comprise each priority group and where in the city do they live? It is critical to identify specific challenges these populations face (e.g., lack of transportation); tracking the following metrics will help inform solutions to these challenges.

Who is at increased risk for severe COVID-19 illness?	• # of long-term care facility (LTCF) residents (e.g., residents of nursing homes and assisted living facilities) • # of people with underlying medical conditions that are risk factors for severe COVID-19 illness • # of people 65 years of age or older
Who is at increased risk of acquiring or transmitting COVID-19?	• # of people from tribal communities • # of people from racial and ethnic minority groups • # of people experiencing homelessness/living in shelters • # of people attending colleges/universities* • # of people in prisons
Who is likely to have limited access to routine vaccination services?	• # of people living in rural communities • # of people with disabilities • # of people who are under- or uninsured
What groups are considered critical infrastructure workforce?	• # of healthcare personnel (e.g., paid and unpaid personnel working in healthcare settings) • # of other essential workers (e.g., law enforcement officers and first responders, educators and other school personnel, food manufacturer and supply workers, grocery workers, etc.)†

DISAGGREGATE DATA BY:
Geographic area (e.g., zip code)
See this guide for disaggregation best practices

SOURCE(S):
Local (city or county) Public Health Department, US Census, Centers for Disease Control and Prevention (CDC) and other federal resources as made available
*Local Department of Education
†Multiple local agencies (e.g., emergency management, education) and relevant businesses (e.g., grocery stores)

KEY QUESTION 1: ARE VACCINES BEING ADMINISTERED EFFECTIVELY AND EQUITABLY TO PRIORITY POPULATIONS?

To assess whether residents are receiving vaccines effectively and equitably, Mayors need to understand how COVID-19 is impacting different populations in their city and track vaccination progress across multiple communities.

1A To what extent is COVID-19 still spreading in our communities?

Metric 1.1 7-day average # of new cases

Metric 1.2 Daily positivity rate

Metric 1.3 Daily # of confirmed hospitalizations

Metric 1.4 Daily # of confirmed deaths

DISAGGREGATE DATA BY:
Geographic area (e.g., zip code), demographics (e.g., race, gender, age, ethnicity)

SOURCE(S):
Local (city or county) Public Health Department, Health and Human Services Hospital Capacity Dataset (open to the public), CDC and other federal resources as made available

1B To what extent have eligible populations been vaccinated?

Metric 1.5 Daily # of vaccines administered

Metric 1.6 Daily # of first (not final) doses administered

Metric 1.7 Daily # of final doses administered

Metric 1.8 % of first dose recipients who have received second dose within 6 weeks of initial dose

Metric 1.9 % of population vaccinated

DISAGGREGATE DATA BY:
Geographic area (e.g., vaccination site), priority group (e.g., healthcare workers, seniors, essential workers, fire/rescue/police, teachers, etc.), demographic (e.g., race, gender, age, ethnicity)

SOURCE(S):
State Immunization Information System (IIS), CDC and other federal resources as made available

KEY QUESTION 2: ARE VACCINES BEING SUPPLIED EFFECTIVELY AND EQUITABLY?

To assess the effectiveness and equity of vaccine supply, Mayors need to track whether there are sufficient vaccination sites, personnel, personal protective equipment (PPE) supplies, and other necessities to support local demand.

2A Do we have sufficient vaccination sites in the right locations?

Metric 2.1 # of registered vaccination sites

Metric 2.2 Average wait time

Metric 2.3 Administration site capacity utilization

Metric 2.4 % of population within 20 minutes of a vaccine center*†

DISAGGREGATE DATA BY:
Geographic area (e.g., neighborhood), type of site (e.g., pharmacy, primary care provider [PCP], government or nongovernment community-based site)
*By transportation mode (e.g., driving, taking public transit, walking)

SOURCE(S):
Local (city or county) Public Health Department, vaccination sites, CDC and other federal resources as made available
†Census data or local transportation department

2B Do we have sufficient personnel to staff vaccination sites and support demand?

Metric 2.5 # of trained vaccinators

Metric 2.6 # of support staff

Metric 2.7 Average reporting time to the state*

DISAGGREGATE DATA BY:
Geographic area (e.g., vaccination site), role (e.g., nurse, doctor, other), CDC and other federal resources as made available
*By vaccination site only

SOURCE(S):
Vaccination sites

2C Do we have sufficient equipment to support demand?

Metric 2.8 PPE burn rate*

Metric 2.9 PPE supply

Metric 2.10 PPE runway†

Metric 2.11 Vaccination storage capacity

DISAGGREGATE DATA BY:
Geographic area (e.g., vaccination site)

SOURCE(S):
Vaccination sites, local (city or county) Public Health Department, CDC and other federal resources as made available
*Facilities can use the CDC PPE Burn Rate Calculator to determine the average rate at which they use PPE. Calculating this rate helps facilities gauge the amount of PPE they need to order and when their current supply will be depleted.
†PPE runway = PPE supply/PPE burn rate, i.e., the number of weeks' worth of PPE supply vaccination sites have on demand.

2D Do we have sufficient vaccine supplies to support demand?

Metric 2.12 # of available vaccine kits*

Metric 2.13 # of expected vaccine kits†

Metric 2.14 # of available administration supplies (e.g., syringes, bandaids, alcohol prep pads)

Metric 2.15 # of expected administration supplies (e.g., syringes, bandaids, alcohol prep pads)

DISAGGREGATE DATA BY:
Geographic area (e.g., vaccination site)

SOURCE(S):
Vaccination sites, CDC and other federal resources as made available
*State Public Health Department
†Local (city or county) Public Health Department

KEY QUESTION 3: IS THERE SUFFICIENT RESIDENT DEMAND, PARTICULARLY AMONG PRIORITY AND VULNERABLE POPULATIONS?

Residents' intent to receive vaccinations will be particularly challenging to monitor; however, Mayors can leverage resident surveys, as well as direct outreach to community leaders, to infer likely demand. Tracking the metrics below will provide insight about whether demand targets are being met and if communication strategies are reaching target populations. The Public Engagement module is a tool cities can use to drive resident engagement.

3A Are we meeting our targets for vaccination demand by priority groups?

Metric 3.1 Vaccination rate vs. target rate (as determined by county or state)

DISAGGREGATE DATA BY:
Priority group (e.g., healthcare workers, seniors, essential workers, fire/rescue/police, teachers, etc.), demographic (e.g., race, gender, age, ethnicity)

SOURCE(S):
Local (city or county) Public Health Department

3B Do our residents intend to get vaccinated?

Metric 3.2 Residents' likeliness to obtain a vaccine (estimate through surveys), # of individuals registered

DISAGGREGATE DATA BY:
Priority group (e.g., healthcare workers, seniors, essential workers, fire/rescue/police, teachers, etc.), demographic (e.g., race, gender, age, ethnicity)

SOURCE(S):
Survey data

3C Are our communication efforts reaching target populations?

Metric 3.3 # of target populations reached via community engagement (e.g., social media campaigns, information sessions, and engagement with community networks such as churches, schools, senior centers, daycares, homeless shelters, COVID testing sites, etc.) compared to city's goal

DISAGGREGATE DATA BY:
Priority group (e.g., healthcare workers, seniors, essential workers, fire/rescue/police, teachers, etc.), demographic (e.g., race, gender, age, ethnicity)

SOURCE(S):
Public outreach data

THE ROLE OF THE DATA CHAMPION

Good data is a critical component of a city's ability to assess the effectiveness and equity of their vaccination rollout strategy—and ensure positive outcomes across all communities. However, the vast amount of potential data sources (e.g., the census, state IIS, vaccination sites, state and local public health departments) makes data management exceptionally challenging. Cities will likely need to establish new data flows, data sharing agreements, and partnerships, all while respecting residents' privacy rights. Cities also need to be aware of new data collected, analyzed, and published by the federal government as it becomes available.

A Data Champion sits on an established vaccination task force and oversees data management across the entire vaccination program. This person should be someone who is familiar with the city's existing data sources (e.g., public health, transportation, housing) and has a background in data analytics. An experienced analyst from the city's public health department would likely be a good fit.

The Data Champion is responsible for i) ensuring data availability; ii) managing timely data analysis and visualization; and iii) establishing data governance models and any necessary data sharing agreements that include provisions to protect resident data. As cities are likely already aware from monitoring COVID-19 data, data may come from non-government sources and require new data governance models and data sharing agreements. The Data Champion also ensures that dashboards and data visualizations are used regularly in decision-making meetings and for public communication and education. Though the role of the Data Champion varies slightly among cities, the Data Champion provides cities with timely access to data, helps cities appropriately utilize data to inform public health decisions, and ensures sufficient privacy protections on data used.

RESOURCES FOR CITIES

In addition to the guidance and sources noted above, this section includes resources and case studies to help cities develop their own data-management strategies. Every city should have a data governance plan or policy that dictates data storage, use, and sharing in a way that protects residents' data.

	Resources	Summary
Privacy Tools and Resources	City of Tempe Security and Privacy Worksheet	The City of Tempe developed a self-assessment tool to determine whether datasets can be shared openly or require a deeper legal review.
	GovEx Privacy Matrix	This matrix can be used to indicate which data fields, when combined with other data fields, are considered open for public release, sensitive and potentially private, or private.
	Johns Hopkins and GovEx Privacy and Open Data Module	This module explores a case study to better understand the importance of data privacy concerns. This module also explores how to manage private, confidential, and sensitive data and how to embed these approaches while drafting a data protection plan.
Data Governance Resources	Importance of Establishing a Data Governance Plan and Team	This document provides a brief overview of data governance plans and their importance in vaccine distribution planning and evaluation. This document also outlines Mayors' role in the implementation of a data governance plan.
	GovEx Webinar: Data Sharing in Times of Crisis	This virtual workshop aims to help government and public health officials navigate some challenges of data governance during a crisis. Sections include understanding the importance of data sharing, identifying elements of a data sharing agreement, and demonstrating challenges and best practices in implementing data sharing agreements during a crisis.
	Best Practices for Data Quality	This document provides a brief overview of the major milestones needed to improve data quality and summarizes best practices for achieving each milestone.

RESOURCES FOR CITIES, CONT'D.

	Resources	Summary
Case Studies	King County Health Disparities Dashboard	This dashboard provides a great example of how to share information with the public on health disparities while upholding strong data governance and privacy concerns.
	Kentucky Center for Education and Workforce Statistics: Data Access and Use Policy	This example of a data access and use policy models how to outline rules to access, use, and re-disclose data collected, stored, and/or maintained by the Kentucky Center for Education and Workforce Statistics.
	District of Columbia Data Policy	This order describes the District's comprehensive data policy and governance plan which appropriately identifies data as a valuable asset needing to be managed.
Data Resources	Health and Human Services Hospital Capacity Dataset	This publicly-available dataset is updated on a weekly basis and provides facility-level data including, but not limited to, ICU capacity, available beds, and COVID-19 hospitalizations.
	PPE Burn Rate Calculator	Facilities can use the CDC Burn Rate Calculator to determine the average rate at which they use PPE. Calculating this rate helps facilities gauge the amount of PPE they need to order and when their current supply will be depleted.
	Johns Hopkins University Vaccine Tracker	This dashboard visualizes state-level COVID-19 testing and vaccination data.
	Minnesota Compass - Race Data Disaggregation: What Does It Mean? Why Does It Matter?	This article summarizes the importance of disaggregating data by race and ethnicity. It also includes steps on how to disaggregate data.
	GISAID Tracking of COVID-19 Variants	This dashboard visualizes confirmed cases of COVID-19 variants across the globe.
CDC and Other Federal Resources (updated as made available)	National Strategy for the COVID-19 Response and Pandemic Preparedness	The National Strategy outlines the federal government's plan to address the COVID-19 pandemic, and includes executive orders relevant to local government plans and strategies.

We want to hear from you. What other resources would you like to see? Do you have any questions? Email us at coronavirusresponse@bloomberg.org.