ADDRESSING EARLY CHALLENGES IN COVID-19 VACCINE DISTRIBUTION

State Strategies to Achieve Efficiency and Equity

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for **Health Policy**

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EXECUTIVE SUMMARY

This white paper identifies how states sought to achieve the twin goals of vaccinating adults across the United States as quickly as possible while ensuring an equitable distribution process. States have overcome early challenges in vaccine distribution, having fully vaccinated 45 percent of U.S. adults and increasing daily administration of vaccines to over 2.1 million doses per day on average as of May 13, 2021. With the Biden Administration and states making every adult eligible for vaccination by April 19 and the Biden Administration's goal of reaching 70 percent of the population with at least one dose of COVID-19 vaccine by July 4, understanding and incorporating key lessons learned from early experiences and promising practices for addressing key challenges is essential to prepare for the next phase of increasing uptake by the public.

In February 2021, the Duke-Margolis Center for Health Policy convened senior officials from 20 states, leaders from state trade associations and federal officials to discuss challenges and lessons learned by state officials in the initial rollout of the national vaccine campaign. This white paper summarizes the promising practices raised at this convening and identifies operational strategies to improve the reach and equity of vaccine distribution in the weeks and months ahead. **Figure 1** provides a snapshot of the strategies that will be addressed in more detail in this paper.

FIGURE 1: State Promising Practices for Improving Reach and Equity in COVID-19 Distribution

OPERATIONALIZING EQUITY

- Improve collection and reporting of race and ethnicity data.

- Strategically deploy vaccines and resources in communities with higher social vulnerability, as measured by the CDC's Social Vulnerability Index (SVI) or other measures.

- Understand and work with partners to address barriers to vaccination, including transportation to and from vaccine appointments, ensuring local access and assisting with scheduling.

- Draw on community-based expertise to provide targeted education and outreach through trusted messengers.

IMPROVING REACH AND MANAGING PUBLIC EXPECTATIONS

- Provide strong leadership, oversight, and coordination at the state level to avoid unnecessary confusion and align around a common vision.

- Consider opportunities to partner with the private sector to operationalize key aspects of the distribution process, such as logistic coordination, allocation strategies, targeted outreach, infrastructure support and development, and cross-organizational and agency operational communications.

- Establish a broad and multi-channel distribution process to reach rural and frontier areas through mass vaccination sites and targeted community events.

- Establish processes for currently non-eligible populations to "pre-register" for vaccine appointments and streamline the process for ensuring eligible populations are connected to vaccine appointments, once they become available.

- Analyze epidemiological trends in COVID-19 cases, hospitalizations, and deaths across age groups and sub-populations to develop equity-focused eligibility criteria aligned with disease burden, while supplies remain limited.

- Develop user-friendly registration and scheduling systems to minimize confusion and simplify the process of finding and scheduling vaccine appointments.

BACKGROUND

A critical step to achieving broad immunity to COVID-19 was the development and authorization of vaccines. With three safe and effective COVID-19 vaccines currently authorized for use in the United States,[1] and several more in the pipeline, the focus has turned to getting shots into the arms of millions of Americans as quickly as possible. State governments were at the forefront of the effort — initially charged with executing an operationally complex and logistically challenging distribution process that prioritized vaccines for certain populations, given the limited supply.

States experienced several challenges that resulted in a slow initial rollout of vaccines with disparities in access and increasing pressure to maximize output. With very limited supply of vaccines in December 2020, most states began the vaccine distribution process by vaccinating health care workers and long-term care facility (LTCF) residents and staff, following the recommendations of the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP). In addition, nearly every state participated in the federal Pharmacy Partnership for Long-Term Care (LTC) Program, through which CVS and Walgreens received direct allocations to vaccinate LTC residents and staff. A lack of clarity into forthcoming allotments, the slow pace of the federal LTCF program, reliance on health systems, and data reporting challenges slowed down efforts to vaccinate these populations in many states. Higher degrees of initial reluctance among health care workers at LTCFs and health systems complicated state efforts to administer available supply efficiently and quickly vaccinate this population before expanding to subsequent eligibility groups.

In response to public pressure and encouragement from the federal government, states adopted varying approaches to expanding eligibility from initial health care workers and residents and staff of LTCFs to other priority groups, such as individuals 65 years and older and essential workers. While some states opened eligibility up to younger age groups, demand continued to far outstrip vaccine supply, with ongoing challenges communicating with an anxious public and standing up user-friendly digital systems to connect eligible individuals to vaccine appointments.

In February 2021, the Duke-Margolis Center for Health Policy (Duke-Margolis) convened chief medical officers, immunization managers, state health officials, surgeon generals, health secretaries, and governor's health policy advisors from 20 states, leaders from state trade associations, and federal officials to discuss maximizing the efficiency of the COVID-19 vaccine distribution process and strategies to promote equity through all phases of distribution. This white paper provides a summary of some of the challenges experienced during the initial roll out of the COVID-19 vaccines, lessons learned, and promising practices for addressing emerging challenges as states prepare for the weeks and months ahead with surplus vaccine and reaching populations on the vaccine hesitancy continuum.

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1 Three tested, safe, and effective COVID-19 vaccines have been granted emergency use authorization in the U.S.: Pfizer, Moderna, and Johnson & Johnson.

STATE STRATEGIES TO MAXIMIZE THE EFFICIENCY OF THE COVID-19 VACCINE DISTRIBUTION PROCESS

Building on lessons learned from the initial rollout, states participating in the February convening had the opportunity to reflect on progress made to date and discuss ideas to overcome current and future challenges. Although some of the ideas discussed below have been successfully applied by some or multiple states, state approaches can and will vary significantly based on each state's unique population, public health infrastructure, and local factors.

MAXIMIZING THE EFFICIENCY OF THE COVID-19 VACCINE DISTRIBUTION PROCESS WHILE MANAGING PUBLIC EXPECTATIONS

This section highlights approaches state leaders have taken to manage public expectations with limited vaccine supply, while increasing the efficiency and speed of the distribution process. Lessons learned from this experience can help inform efforts for the months ahead.

Establishing Strong Leadership, Coordination, and Oversight

During the initial weeks of the vaccine roll out, several states demonstrated higher levels of efficiency in vaccinating Phase 1a populations[2]. Those states tended to attribute their success to strong management, coordination, and oversight of distribution and inventory. **Connecticut** emphasized their oversight of providers to ensure that allocations were being efficiently administrated, using real-time data to examine inventory, and shifting allocations to ensure that they are used. The state also built on existing partnerships and leveraged their established testing network to deliver vaccines.

Several states during the convening highlighted the importance of centralizing decision-making, supporting coordination among partners, and clearly defining roles and responsibilities to avoid unnecessary confusion and redundancies. **West Virginia** discussed creating the Joint Interagency Task Force (JITF) led by the West Virginia National Guard, Department of Health and Human Resources, and the Governor's Office. In this model, the state took the task force out of a single agency to pool together local resources and expertise to align around a common vision and ensure all actors that play a role in the distribution process are uniformly communicating from the top-down. In doing so, the state realized half of their pharmacies are independent and decided to opt out of the federal LTC Program. Knowing the population and geography of the state enabled the state to partner with independent pharmacies to vaccinate the majority of residents and staff of LTCFs, becoming the first state in the nation to achieve this goal. As vaccine distribution widens into community settings, ensuring coordination and facilitating information exchange among partners remains critical.

Rural states during the convening discussed navigating their unique challenges reaching smaller, more dispersed populations. **North Dakota**, at the outset, enrolled every provider in the state

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2 On December 1, 2020, the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) recommended that health-care personnel and long-term care facility residents be offered COVID-19 vaccination first (Phase 1a).

who could provide vaccinations, including pharmacies, federally qualified health centers (FQHCs), specialty providers, private providers, and local departments of health. Because shipping quantities are quite large, especially for Pfizer, and the state has a large proportion of rural providers who require smaller allotments, the state stood up a warehouse with ultra-cold storage capacity to break down shipments to small quantities to transport doses to rural areas. Rather than expecting individuals to travel long distances to urban centers, the state brought vaccines to these communities to increase uptake and minimize transportation barriers.

Determining Prioritization of Eligible Populations

Earlier phases of prioritization relied on understanding COVID-19 cases, hospitalizations, and deaths across age groups and subpopulations. For example, while age is an important risk factor for negative COVID-19 outcomes—and many states moved early to expand eligibility to individuals over the age of 65 based on data showing the increased risk of morality—several states reflected the differential impact of race on COVID-19 mortality in eligibility decisions. For example, **North Dakota** lowered the age limit for American Indians to 50+, reflecting lower life expectancy and disproportionate impact of COVID among tribal communities.

In addition, as states began to expand eligibility to individuals with high-risk medical conditions, defining high-risk medical conditions and verifying eligibility raised operational concerns. Given CDC's list of high-risk medical conditions that place individuals at increased of risk of severe illness and death from COVID-19 is broad and represents over 110 million Americans, some states developed approaches for narrowing down this list of conditions to those at most severe risk of COVID-19. Generally, states discussed defining high-risk medical conditions similarly to how states approached other aspects of vaccine distribution — sometimes following existing federal guidance — but often developing definitions and criteria based on their own populations, vaccine supply, and local factors. For example, **Florida** and **Virginia** developed frameworks for defining eligible conditions based on existing COVID-19 cases, deaths, hospitalizations, and at-risk population data in their state.

As another example, **Ohio** narrowly defined eligible conditions to target those at the highest risk of severe outcomes or death from COVID-19 for their Phase 1b populations[3], such as including individuals with developmental disabilities, and partnered with health systems to direct resources and efforts to these populations. In doing so, **Ohio** partnered with county boards of developmental disabilities to serve as care coordinators and assist those qualifying individuals with scheduling appointments at specialized clinics at local health departments and Children's Hospitals and arranging transportation. The state relied on individuals self-attesting to their condition and asked them to confirm their condition at the time of their appointment.

Additionally, states adopted different philosophies and strategies for requiring verification for qualifying high-risk medical conditions. While some states determined requiring verification beyond self-attestation unnecessary, others chose to require verification through a doctor's note. For states that broadened eligibility to include individuals with high-risk medical conditions, they emphasized the challenge of managing expectations and establishing a verification process. **Virginia** decided against requiring attestation, noting the undue burden on both the public and providers to obtain a note verifying their qualifying medical condition. New Mexico's centralized registration system allowed individuals to self-attest to their underlying medical condition(s)

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3 On December 20, 2020, ACIP updated interim vaccine allocation recommendations. In Phase 1b, the committee recommended the COVID-19 vaccine should be offered to people aged 75 years and older and non-healthcare frontline essential workers.

during the pre-registration process. Among those who are eligible, the state randomized registrants to equitably allocate appointments for those with high-risk medical conditions. Other states, such as North Dakota and Vermont, discussed using their health information exchange (HIE) to either passively verify an individual's high-risk medical condition, going a step beyond attestation, or to identify people with a certain condition (i.e., diabetes) and conduct reminder calls for vaccination.

Developing User-Friendly Registration and Scheduling Systems

In addition to establishing clear processes for determining which groups would be prioritized for vaccination, states described challenges developing user-friendly tools for individuals to determine their eligibility, find available vaccines, and secure appointments. Although vaccine scarcity remained an immediate problem, as supply increased and eligibility expanded, human-centered digital tools **(Table 1)** across multiple modalities became essential to increasing vaccine uptake across the broader population.

Data-Driven Outreach. States discussed leveraging their Immunization Information Systems (IIS) systems to address the challenges residents face finding vaccines and confusion over registering for an appointment. In **North Dakota**, providers complete a daily survey to indicate the priority group they are vaccinating and how to access an appointment, whether online or through a call center. The state repurposed their contact tracers to staff a hotline to schedule individuals 65 years and older for a vaccine appointment. Going forward, the state plans to use its IIS to send reminder letters to individuals not yet vaccinated with information to book an appointment and find a vaccine nearest to them.

User-Friendly, Centralized Registration Systems. State officials also discussed the need to create new systems that reduce barriers for accessing vaccines. States such as **Delaware**, **Mississippi**, **New Mexico**, **New Jersey**, and **Oklahoma** established registration systems that allow residents to register for a vaccine, and if eligible, displays state or county-run sites to book an appointment. Notably, **Oklahoma** is leveraging 2-1-1 to allow residents to call for any questions regarding the vaccine scheduler portal or the state's vaccine distribution plan.

Vaccination Provider Locators. For states where implementing a central registration system was not feasible, aggregating vaccine appointments across multiple providers into single "vaccine provider locators" that helped guide eligible populations to nearby vaccination. **Kentucky**'s vaccine eligibility tool allows residents to self-attest to their age, occupation, essential worker classification (e.g., first responders, correctional staff, and K–12 staff), and identify if they live in transient housing. The tool tells the individual which phase of the campaign they fall into and can sign up to receive notifications for when they are eligible. Similarly, **Washington**'s phase finder tool helps residents determine whether they are currently eligible by answering a series of questions. Eligible residents receive confirmation by email with locations to schedule a vaccination appointment. Residents who are not yet eligible can provide contact information to be notified when eligibility expands.

Supplemental Accessibility Approaches. States underscored the fact that digital tools must be supplemented by multi-lingual call centers and direct outreach efforts for individuals without access to the internet or those that may face difficulty in navigating digital systems. For example, **Connecticut** and **Vermont** established multi-lingual vaccine appointment call centers that residents can use to schedule vaccine appointments and assist with filling out the registration form.

TABLE 1. Digital Approaches to Facilitate Equitable COVID-19 Vaccine Registration and Scheduling		
REGISTRATION TOOLS	**DEFINITION**	**STATE EXAMPLES**
Eligibility tools	Web-based platforms that allow users to submit demographic information to determine their prioritization category.	KY, WA
Centralized Registration Systems	Web-based systems that screen individuals to determine their eligibility and proceed with scheduling an appointment, if eligible, or prompts the individual to sign up for an email notification to schedule an appointment when eligible.	NM, CA
Registration Systems for State-and County-Run Sites	Web-based systems that screen individuals to determine their eligibility and proceed with scheduling an appointment, if eligible, with a local vaccinator at a state-or-county run site.	AZ, DE, FL, MS, ND, NJ, OK
Vaccine Provider Locators	Web-based platforms that assist individuals in locating a vaccination site or appointment near them.	AR, CT, MD, ND, NC, NJ, WA
Combined Vaccine Provider Locators and Eligibility Tools	Web-based platforms that combine eligibility screening and vaccination site locator tools.	IN, MA
Supplemental Strategies to Bridge the Digital Divide	To bridge the digital divide, some states are offering supportive services, such as multilingual call centers to schedule appointments or assist individuals using an online registration system, to reduce some accessibility barriers when accessing information or booking an appointment.	CT, NE, ND, VT

▶ APPLYING LESSONS LEARNED

As states are now opening up vaccine eligibility to all adults and supply has significantly increased, states are no longer limiting vaccine eligibility to priority groups. However, lessons learned from earlier phases of vaccine distribution will be useful as states should identify individuals in these early groups who have not yet been vaccinated and ensure that outreach and access to them is prioritized.

To reach those populations who may not be asking for the vaccine, states will need to design easy access and ready education strategies. A key part of these strategies will be to simplify the registration process and broadening access by transitioning from appointment-based vaccination sites to non-appointment based local sites such as primary care providers, mobile vans, and other community-based vaccinators. Data sharing and the use of common platforms also will

be critical to building one-stop, easy-to-use registration sites that allow individuals to access multiple vaccination sites. In addition, states will need to build new partnerships with employers, schools, health systems, health plans, and community groups who can reach populations not yet vaccinated. In order to target populations they touch, however, these entities will need information about who has not been vaccinated. That will require new ideas around data sharing and how that can be accomplished between immunization information systems, electronic health records, health information exchanges, Medicaid information and other data sources.

Finally, as states establish new partnerships and strategies to reach populations, states will move to a more decentralized system — where multiple partners will work to vaccinate the public. Applying the lessons learned from a centralized process to ensuring coordination in a more decentralized system will be critical. But emerging issues around ensuring there is a complete data set from different vaccinating providers, providing vaccine allotments to sites that may have more limited speed in delivery (such as primary care doctors), and effective partnering with local communities will require increased coordination at the federal, state and local level.

OPERATIONALIZING EQUITY

States implemented a variety of approaches to improve vaccination rates in underserved and at-risk communities. Preliminary data indicates that Black and Hispanic communities were not receiving COVID-19 vaccines at the same rate as white populations. Central to identifying disparities and surfacing practical solutions to this inequity relies on high quality, comprehensive data. During the February meeting, states noted the challenge of collecting data by race and ethnicity at the provider level, which undermines states' abilities to understand coverage gaps or efficiently deploy targeted efforts. A lack of visibility on race and ethnicity data from vaccines administered at federal sites, including Indian Health Service, Veterans Affairs, FEMA mass vaccination facilities, and pharmacies, has hindered states from having a full and accurate picture of state demographic data. However, the primary challenge remains incomplete reporting from vaccine providers. In addition to strategies for improving the collection and reporting of racial and ethnic data to drive decision-making, states discussed approaches for targeting vaccines to underserved communities, reducing barriers to vaccination, and promising community-based approaches for engaging at-risk communities. A more complete analysis of state equity strategies can be found in a paper recently released by Duke-Margolis and the National Governors Association.

Improving the Collection and Reporting of Race and Ethnicity Data

Incomplete and inconsistent collection and reporting of race and ethnicity data throughout the pandemic – beginning with cases, hospitalization, and mortality rates – has extended to the reporting of race and ethnicity for COVID-19 vaccination rates. States have been challenged to collect complete and accurate demographic data from providers, with providers frequently reporting "unknown" or "other" for race and ethnicity categories as they move through the administration process. During the convening, states detailed their ongoing work to establish a culture of collecting and reporting these data. While states have steadily improved the transparency of this data, with 47 states and Washington D.C. publicly reporting racial and ethnic data as of May 11, the completeness and quality of the data vary considerably.

States are taking several approaches to improve the consistency and completeness of race and ethnicity data at the provider-level. **New Mexico** took a deliberate approach to contact every vaccinator in the state and required reporting of race and ethnicity within its immunization information system, which led to 100 percent of all vaccinators reporting race and ethnicity. To encourage accurate reporting and appropriately serve diverse communities, **North Carolina** is allocating an "equity bump" to providers that vaccinate historically marginalized populations at the proportion or higher than the proportion of the population in the county. Additionally, the state built their own immunization system that requires race and ethnicity data to be reported for each vaccination, and providers cannot submit without reporting this data field. The state reviews race and ethnicity data for each vaccinator and provides a weekly report so every vaccinator knows where there are gaps in vaccination coverage and enable more informed prioritization.

Strategically Deploying Vaccines and Resources

States are using a variety of data and analytical tools to identify and target efforts at areas that have experienced a disproportionate impact of COVID-19 or may face additional barriers to access. To intentionally shore up the response to disparities among hardest hit communities, some states are strategically allocating doses to areas with high rates of social vulnerability using the CDC's Social Vulnerability Index (SVI) or other indices. **New Mexico** decided to use race, ethnicity, and poverty data to guide allocation decision-making. Through the registration app, state officials could sort registrants by age, ethnicity, underlying medical conditions, zip code and occupation. This information gave the DOH the ability to identify categories of eligible people to be prioritized, such as people 75 and older or people living in zip codes with high SVI. The state prioritized up to 20 percent of their allocations to increase distribution to those communities with higher social vulnerability. To support access within these communities, the state partnered with the CDC to conduct rapid community assessments to identify barriers and facilitators for COVID-19 vaccines, adapt key messages from local data to develop local communications plans and strategies, train networks of community health workers (CHWs) to communicate messaging in local communities, and deploy CHWs in areas with high social vulnerability, including door-to-door home visits and development of mobile teams for vaccination sites closer to where people live and work.

To further refine efforts and respond to gaps in vaccination access, Geographic Information System (GIS) mapping is a powerful tool to identify areas that lack COVID-19 vaccination sites and ensure populations have convenient access to vaccine providers, such as federally qualified health centers (FQHCs), pharmacies, and other locations where communities currently receive health care services. A recent analysis by the RUPRI Center for Rural Health identified 111 counties that have no eligible pharmacy to provide COVID-19 vaccines, complicating state efforts to utilize pharmacies as vaccine distribution sites. A separate analysis conducted by the University of Pittsburgh and the West Health Policy Center identified 69 counties where Black residents had a significantly higher risk than White residents of having to drive a distance greater than one mile to the closest potential COVID-19 vaccine administration facility. Some states, such as **Maryland**, produced publicly available GIS maps that display COVID-19 vaccination sites to assist the public in locating vaccines within their communities. Notably, **Michigan** adopted a distance and time performance measure to track whether all residents are within a 20-minute drive to a COVID-19 vaccination site. To broaden community access, **North Carolina** discussed prioritizing enrolling pharmacies in areas that are higher on the social vulnerability index.

Drawing on Community-Based Expertise to Drive Equity

Many states described partnerships with community-based organizations (CBOs) as critical to operationalizing equity strategies. As trusted organizations with deep knowledge and roots within the communities that they serve, these organizations are often best positioned to understand and address vaccine barriers to access, such as inadequate transportation or distrust in the health system. To overcome many of the structural inequities that may create barriers to vaccine access, states are developing community-led distribution models that partner with community and faith leaders in the communities that they serve. For example, **Colorado** partnered with trusted community organizations including federally-qualified health centers (FQHCs), CBOs, and faith-based organizations to host weekly events that address the specific concerns among communities of color and organize COVID-19 vaccination events with leaders from the communities these events intend to serve.

To support these partnerships and empower community groups, states discussed funding CBOs and CHWs to execute a community-oriented approach. **Rhode Island** directed $10 million to community-based COVID-19 response efforts in each health equity zone established at the beginning of the pandemic to increase collaboration between CBOs and the Rhode Island Department of Health. Similarly, **Oregon** directed $9 million to more than 170 CBOs using CARES Act dollars to provide culturally and linguistically accessible testing services through community engagement, education, and outreach; contact tracing; and social services and wraparound supports. The state is now leveraging this infrastructure to provide funding to increase COVID-19 vaccinations atcommunity-based sites. **California** announced it will set aside 40 percent of vaccine doses for the most impacted communities and established a vaccine equity metric, which aims to deliver a minimum of two million doses to the hardest-hit quarter of the state as measured by the Healthy Places Index. Additionally, the state is reserving appointments for members of communities severely impacted by the pandemic and increasing funding for safety net providers to cover startup costs and for navigation assistance. **Florida** discussed launching faith-based events with closed pods capable of vaccinating entire congregations and involving Black and Hispanic churches in scheduling to help ensure that a substantial number of appointments are filled by people of color. Moreover, the state is providing grants to community and faith-based organizations to work with partners to improve the health of racial and ethnic populations, eliminate barriers, increase vaccination rates, and achieve optimal health.

▶ APPLYING LESSONS LEARNED

As vaccine supply is increasing, states are starting to shift to decentralized models of distribution to ensure the reach of the vaccine effort will be effective for those who may not be coming forward to get a vaccine. These strategies require states to bring vaccine to the people — through local communities, mobile vaccination sites, primary care providers, schools, and other trusted locations. Applying geospatial mapping to identify communities with lower vaccination rates, with additional analyses of SVI and other factors, will be critical to ensuring that outreach efforts are targeted effectively. In addition, improving the quality of race and ethnicity data is needed to understand where vaccination disparities continue to exist and ensure that strategies can be appropriately targeted. Partnerships with CBOs also will be important to successfully engage individuals in communities in education and easy access to vaccines, toimprove uptake. Using CBOs will enable targeted outreach for different groups of people — using trusted messengers and incentives that can appeal to particular populations.

STRENGTHENING THE FEDERAL-STATE VACCINE PARTNERSHIP

During the convening, states engaged with federal officials to identify opportunities to strengthen the federal-state partnership. States identified the following federal recommendations as immediate priorities, while acknowledging the dynamic nature of the national vaccine campaign and the required continued engagement between federal and state partners:

- Improved forecasting and visibility of anticipated state vaccine allotments has significantly improved states' abilities to deploy available vaccines strategically and coordinate with partners. To further support state planning, improved transparency of entities receiving Federal allocations (Federal Retail Pharmacy Program, Federally qualified health centers, FEMA vaccination sites, etc.) would help ensure that state efforts are efficiently targeting areas of highest need.

- Encourage all entities receiving federal allocations to provide comprehensive demographic data for each person receiving a vaccine and support improved information sharing in state immunization information systems.

CONCLUSION

States are moving from a vaccine supply constrained environment to one with enough vaccines available to innoculate every adult in the United States. Partnerships and collaboration with stakeholders at every level, along with simplifying access, at the community-level will be essential to reaching the population who may not be seeking out vaccines. States also need to build capacity, with the expectations of moving the vaccination effort to traditional settings, such as pediatric offices for vaccinating children and primary care offices and pharmacies for booster shots, if are needed. In addition, states may set numerical targets for vaccinated populations and will need to plan on how to address those who may remain unvaccinated as states reopen during the weeks and months ahead. Such planning will require coordination of vaccine education and access, testing, providing incentives, and other measures to ensure that states will be able to identify and guard against potential outbreaks.

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