

# ROADMAP TO IMPLEMENTING PANDEMIC INFLUENZA VACCINATION OF CRITICAL WORKFORCE

*Guidance for state and local planners  
in targeting and allocating pandemic  
influenza vaccine for critical workforce*

Based on CDC's Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine during an Influenza Pandemic, 2018



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

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## Overview

A key action of the Department of Health and Human Services (HHS), outlined in the 2017 HHS Pandemic Influenza Plan, is to support production and distribution of pandemic influenza vaccine matched to the circulating pandemic influenza vaccine strain within 12 weeks from declaration of an influenza pandemic.<sup>1</sup> However, early in a response, the vaccine supply may not be sufficient to meet the demand for the entire U.S. population. In this case, decisions about how to target this initial supply of pandemic influenza vaccine will need to be made. These decisions will be based not only on vaccine supply, but also on epidemiology, severity, and assessment of potential for disruption of essential community services in context of publicly articulated pandemic influenza vaccination program objectives and principles. CDC's *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine during an Influenza Pandemic (2018)* outlines this strategy but includes limited information on how state and local planners should plan for implementing and operationalizing pandemic vaccine targeting decisions.<sup>2</sup>

In a severe influenza pandemic, disease can spread rapidly in a community and may result in notable losses in work days, particularly among critical workforce groups who provide response functions and essential basic services to communities. Disease and absenteeism among critical workforce may increase the negative impact of an influenza pandemic on a community. Pandemic influenza vaccine may only be available in incremental, limited supplies during the initial stages of an influenza pandemic. Therefore, it may be necessary to target available pandemic vaccine to protect these critical workforce personnel in both public and private sectors.

Though some groups at high risk for severe disease associated with influenza may also be part of initial pandemic vaccination targeting, this document does not specifically address approaches for targeting these groups. These groups at high risk for severe disease associated with influenza infection are often part of routine immunization outreach. On the other hand, planning for identification and vaccination of critical workforce, especially in the private sector, has been identified as a major gap in operational readiness in many jurisdictions. To address this gap, this document is intended to be used by state and local planners as a guide, or “roadmap,” of proposed steps to planning for and implementing pandemic influenza vaccination of critical workforce personnel in their communities.

## Background

In the last century, there have been four influenza pandemics (1918, 1957, 1968, and 2009). Novel influenza A viruses such as avian influenza A H7N9 and H5N1 viruses, which humans have little or no immunity against, often emerge from animal hosts and cause sporadic illnesses in people. When these viruses acquire the ability to transmit from person to person and spread widely, pandemics occur. When a pandemic is declared, the goal of the United States government (USG) is to develop a safe and effective vaccine against the emerging circulating pandemic strain and ensure that there is enough of this pandemic vaccine for everyone in the U.S. who wants to be fully vaccinated against this emerging virus. However, pandemic vaccine supplies may be limited at the beginning of a pandemic. Critical workforce personnel are likely to be key groups targeted for pandemic influenza vaccination early in pandemic response, depending on vaccine supply and severity of the pandemic.

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<sup>1</sup> U.S. Department of Health and Human Services. Pandemic Influenza Plan: 2017 Update. [www.cdc.gov/flu/pandemic-resources/pdf/pan-flu-report-2017v2.pdf](http://www.cdc.gov/flu/pandemic-resources/pdf/pan-flu-report-2017v2.pdf).

<sup>2</sup> *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic*. See [www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html](http://www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html).

Planning for the protection of critical workforce is an important priority for the USG. The *National Infrastructure Protection Plan* (NIPP), written and developed by the Department of Homeland Security (DHS) with input from stakeholders, outlines, “how government and private sectors should work together to manage risk and achieve security and resilience outcomes.”<sup>3</sup> DHS has included pandemics as one of five evolving threats to critical infrastructure and provides guidance on steps state and local health departments should take to prepare for pandemic responses.

Planning for critical infrastructure and workforce protection is also addressed in guidance developed by CDC. The 2018 *Public Health Emergency Preparedness and Response Capabilities*<sup>4</sup> provides a capability-based framework to help public health agencies structure their emergency preparedness planning. Capability 14, “Responder Health and Safety,” and capability 15, “Volunteer Management,” highlight specific functions to protect individuals in a response, including critical workforce personnel. Furthermore, public health preparedness programs are required by CDC to address plans for critical workforce protection in a program review known as the Operational Readiness Review (ORR). The Operational Readiness Review is a rigorous, evidence-based assessment that evaluates state, local, and territorial planning and operational functions. Historically, the ORR primarily focuses on evaluating a jurisdiction’s ability to execute a large response requiring medical countermeasure (MCM) distribution and dispensing. The intended outcome of this assessment is to identify strengths and challenges facing preparedness programs across the nation and to identify opportunities for improvement and further technical support.

Despite the fact that protection of critical workforce and infrastructure is highlighted by multiple federal guidelines, a 2017 analysis conducted by CDC suggested that less than half of states had operational plans to vaccinate their critical workforce; many states noted this was a local responsibility.<sup>5</sup> Consequently, planning for rapid identification and vaccination of critical workforce, particularly in the private sector, has been identified as a major pandemic influenza planning gap.

DHS has additional information on critical infrastructure, [www.dhs.gov/hsin-critical-infrastructure](http://www.dhs.gov/hsin-critical-infrastructure), that may be shared with partners.

## CRITICAL INFRASTRUCTURE SECTORS

- Chemical
- Commercial facilities
- Communications
- Critical manufacturing
- Dams
- Defense industrial base
- Emergency services
- Energy
- Financial services
- Food and agriculture
- Government facilities
- Health care and public health
- Information technology
- Nuclear reactors, materials, and waste
- Transportation systems
- Water and wastewater systems

DHS has additional information on critical infrastructure, [www.dhs.gov/hsin-critical-infrastructure](http://www.dhs.gov/hsin-critical-infrastructure), that may be shared with partners.

3 US Department of Health and Human Services. *National Infrastructure Protection Plan (NIPP)*, 2018. Available at: [www.dhs.gov/national-infrastructure-protection-plan](http://www.dhs.gov/national-infrastructure-protection-plan).

4 [2018 Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health](#)

5 Moulia, D.L., et al. *Readiness to Vaccinate Critical Personnel during an Influenza Pandemic, United States, 2015*. *Am J Public Health*, 2017;**107**(10):1643-1645.

## Guidance Development Process

In 2016, CDC partnered with the National Association of County and City Health Officials (NACCHO) to identify best practices and develop tools to help jurisdictions plan for a pandemic vaccine response that includes targeting critical workforce.

NACCHO conducted a landscape analysis of existing resources related to pandemic vaccine targeting critical workforce. NACCHO also held a series of in-depth interviews with local public health programs of varying geographic locations, jurisdictional makeup, and planning experience to better understand local planning for a pandemic influenza vaccine response.<sup>6</sup>

*The term **critical workforce** (CW) refers to anyone whose occupation, skills, or license makes them essential to preserving the critical functions of a society or a given jurisdiction.*

CDC's *Interim Updated Guidance on Allocating and Targeting Pandemic Influenza Vaccine (2018)*<sup>7</sup> provides an overview of the principles for prioritization of pandemic influenza vaccines and provides a planning outline of how certain groups may be targeted during a severe influenza pandemic. Included in the list of targeted groups are those who maintain essential community services.

## Purpose

This document is intended to serve as a tool for state and local jurisdictions in planning for targeting pandemic influenza vaccine to critical workforce. This document should be used as a companion to federal resources for pandemic influenza planning that involves protection of critical workforce. Key federal guidance is summarized and referenced throughout. These summaries should not be substituted for a thorough review of original documents.

- **Section I:** Explains and defines critical workforce groups based on federal planning recommendations.
- **Section II:** Provides some proposed approaches for local planning for vaccination of critical workforce.
- **Section III:** Outlines readiness considerations for conducting vaccination clinics for critical workforce.
- **Section IV:** Provides additional information on exercising pandemic vaccination plans for critical workforce groups.

<sup>6</sup> [nacchopreparedness.org/tag/pandemic-influenza/](https://nacchopreparedness.org/tag/pandemic-influenza/)

<sup>7</sup> *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic*. See [www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html](https://www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html).

Influenza pandemics present unique challenges for state and local governments due to their unpredictability and rapid spread, particularly if critical workforce are targeted for early rapid vaccination against the emerging pandemic virus. Therefore, local and state governments, emergency managers, health authorities, and community organizations should identify individuals essential to preserving the critical functions of a community prior to a pandemic. Though the exact makeup of a jurisdiction's critical workforce may vary, federal guidance documents have been developed to ensure state and local planners use similar principles in determining their critical workforce.

## The HHS Pandemic Influenza Plan: 2017 Update

The *Department of Health and Human Services' (HHS) Pandemic Influenza Plan*<sup>8</sup> outlines the federal plan to, “prevent, control, and mitigate the effect of influenza viruses that pose high risks to humans.” The plan provides goals, objectives, and key actions for seven domains of influenza pandemic preparedness:

- Surveillance and laboratory activities
- Community mitigation measures
- Medical countermeasures
- Health care system preparedness
- Communications
- Scientific infrastructure
- Domestic and international response policy, incident management, and global partnerships

The *medical countermeasures* domain calls for the development and maintenance of guidance on targeting pandemic influenza vaccine. In the HHS Pandemic Influenza Plan, “targeted individuals would include those who play critical roles in the response, are critical to maintaining essential functions of society, and those (in the general population) at increased risk of severe disease because of age or underlying medical conditions.”<sup>8</sup> This guidance includes a list of planning assumptions that local health departments should review and consider when planning for vaccine targeting.

A significant proportion of preparedness planning for medical countermeasures has been specific to an anthrax response and included public health responders that are critical to the mission of distributing and dispensing medications and assets needed for the incident. Because anthrax is a bio-terrorist agent, exposure to the agent may be limited to a geographical location, whereas an influenza pandemic, by definition, will spread across an entire community, affecting the entire workforce. This would affect not only those critical to the response, but also workforce personnel who are critical to maintaining basic functions of society outside of the actual response.

Given the difficulty associated with estimating the timing or impact of the next influenza pandemic, pandemic influenza planning is based on basic assumptions about viral epidemiology and human susceptibility. Below is a list of planning assumptions key to pandemic vaccine program planning, particularly for critical workforce in public and private sectors.

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8 U.S. Department of Health and Human Services. Pandemic Influenza Plan: 2017 Update. See [www.cdc.gov/pandemic-resources/pdf/pan-flu-report-2017v2.pdf](http://www.cdc.gov/pandemic-resources/pdf/pan-flu-report-2017v2.pdf).

## PLANNING ASSUMPTIONS

for pandemic influenza vaccination planning

- All ages may be equally susceptible to infection and severe disease.
- Demand for the pandemic influenza vaccination may be high throughout the response; at least 80% of the population may want to be vaccinated.
- Seasonal influenza vaccine production and campaign may be halted, but other routine immunizations will continue.
- Adequate federal funding will be available to implement a large-scale pandemic vaccination response.
- HHS will work with partners, including vaccine manufacturers, to develop pandemic vaccine matched to the emerging circulating strain for the entire US population; however, there may be limited early supply of this matched vaccine.
- Two doses of pandemic influenza vaccine, separated by 21 days, may be recommended for all people ages 6 months and older.
- Pandemic influenza vaccine and ancillary supplies, including needles and syringes, will be provided at no cost to pandemic vaccine providers.
- Most pandemic influenza vaccine will be inactivated, packaged in multi-dose vials, and may require adjuvant, which may need to be mixed at the point of administration by vaccine providers.
- Federally supplied pandemic influenza vaccine may be supplied under an Emergency Use Authorization (EUA).<sup>9</sup>
- CDC will distribute standard communication materials on the EUA for the general public, similar to the vaccine information statement (VIS), and specific communication to vaccine providers on the EUA.
- Public health programs will be required to enroll pandemic influenza vaccine providers (similar to the 2009 H1N1 response) using a template developed by CDC.
- Pandemic influenza vaccine distribution, based on state population or pro-rata, may begin as early as 45 days after the decision is made to make and distribute pandemic influenza vaccine.
- Once developed, pandemic vaccine matched to the emerging pandemic virus strain may become available for approximately 10-15% of the U.S. population per week for distribution to enrolled vaccine providers (i.e., 30-45M vaccines may be available nationally per week once pandemic vaccine is available for distribution).
- HHS has stockpiled a very limited supply of vaccine against influenza A viruses predicted to have pandemic potential. During the early stages of an influenza pandemic response, this stockpiled vaccine may be determined to be useful against the emerging pandemic virus and may be distributed.
- In a scenario where there may be initial limited supply of vaccine, targeted vaccination may be recommended by USG for the first stages of a response for young children, pregnant women, high-risk adults, health care workers, and/or certain other critical workforce groups depending on supply and severity.
- Public health emergency programs will be responsible for coordinating with all federal facilities in their jurisdiction to ensure the workforce and/or populations/patients served by these facilities are considered when allocating the jurisdiction's pro-rata vaccine allocation.

<sup>9</sup> U.S. Department of Health and Human Services. *Emergency Use Authorization*. See [www.phe.gov/Preparedness/planning/authority/Pages/eua.aspx](http://www.phe.gov/Preparedness/planning/authority/Pages/eua.aspx).

# Guidance on Allocating and Targeting Pandemic Influenza Vaccine

CDC's *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic (2018)*<sup>10</sup> provides "strong advice to support planning an effective and consistent pandemic response by states and communities." This guidance establishes a framework for decision-making about how to allocate and target pandemic vaccine when disease is severe and vaccine availability is limited. The guidance divides the population into four broad categories:

- **Homeland and national security**
- **Health care and community support services**
- **Other critical infrastructure**
- General population

A description of and rationale for the population groups targeted for pandemic vaccinations may be found in CDC's *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine during an Influenza Pandemic, Appendix A (2018)*.

The first three categories listed above in bold collectively represent the critical workforce and are divided into occupational target groups. The last category, general population, is divided into target groups by age and/or health status, and is typically a focus of seasonal influenza vaccination plans.

As with any public health emergency, coordination between state and local health departments with homeland and national security agencies in their respective jurisdictions is needed in influenza pandemic response planning and implementation. While the Department of Defense (DoD) may have some pandemic influenza vaccine available directly for a portion of their mission-critical workforce, state and local governments should work directly with all federal facilities, including DoD facilities, in their jurisdictions to ensure that their pandemic vaccination planning takes into account pandemic vaccine supply and allocation for workforce not receiving vaccine from DoD.

Target groups are designated in tiers to determine a vaccination strategy. Tiers range from 1 to 5, where tier 1 includes the highest priority groups. The makeup of a tier depends on the severity of the pandemic and is labeled as "Very High/High Severity," "Moderate," and "Low Severity." Depending on severity, a single target group may shift between tiers. All target groups within a tier should be vaccinated simultaneously. If there is not enough vaccine to simultaneously vaccinate all target groups within a tier, sub-prioritization may be necessary.

## PUBLIC HEALTH EMERGENCY COORDINATION

- Federal, state, and local public health departments
- Emergency Management Agency
- Homeland Security
- Department of Defense Agencies
- State/local law enforcement
- Department of Corrections
- Utility agencies
- Public & private sector organizations
- Health care organizations & providers
- Pharmacies
- Jurisdiction-specific partners

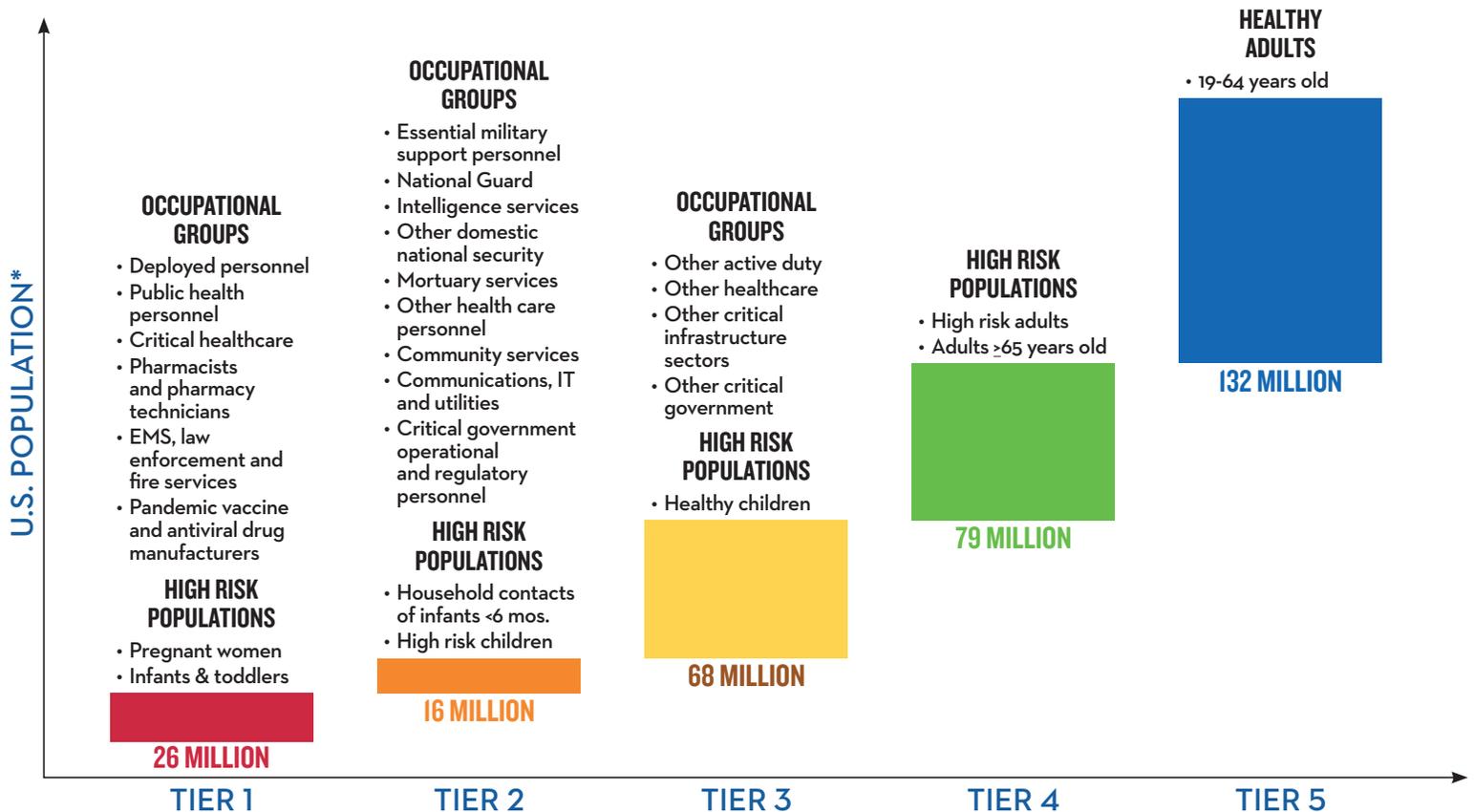
<sup>10</sup> *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic*. See [www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html](http://www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html).

**Population groups in a high or very high severe influenza pandemic include:**

- **Tier 1** includes the highest priority target groups across all four categories. Tier 1 groups are those who serve important societal needs, such as health care providers, emergency services personnel, and vaccine manufacturers. Tier 1 also includes vulnerable populations like pregnant women and infants.
- **Tier 2** includes groups critical to national security such as the National Guard and intelligence services, critical community support personnel such as pharmacists, and other critical infrastructure, such as those that provide just-in-time utility services like electricity and natural gas. This tier also includes high-risk children (3-18 years old) and household contacts of infants <6 months old.
- **Tier 3** includes other critical infrastructure target groups such as those that maintain transportation, financial infrastructure, other health care, and critical government personnel. Tier 3 also includes children ages 3-18 without a high risk condition.
- **Tier 4** includes adults age 19-64 with high risk conditions and adults ≥65 years of age.
- **Tier 5** comprises healthy adults age 19-64 not included in other groups already listed above.

**Figure 1 Vaccination tiers and population groups for a high/very high level of pandemic severity.**

\*from CDC’s *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine during an Influenza Pandemic (2018)*



\* Based on 2015 U.S. population of 321 million people. [factfinder.census.gov/bkmk/table/1.0/en/PEP/2015/PEPAGESEX](https://factfinder.census.gov/bkmk/table/1.0/en/PEP/2015/PEPAGESEX)

**Table 1**

**Category, vaccination population groups, estimated number in population group, and tiers for low, moderate, and high/very high pandemic severity.**

The critical workforce group outlined with the red box is adapted from CDC’s [Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine during an Influenza Pandemic \(2018\)](#).



Category	Population Group	Estimated Number	Low Severity*	Moderate Severity	High/Very High Severity
<b>Homeland and national security</b>	Deployed <sup>5</sup> & mission essential personnel	850,000	TIER 1	TIER 1	TIER 1
	Essential military support & sustainment personnel	450,000	Not Targeted	TIER 2	TIER 2
	Intelligence services	150,000	Not Targeted	TIER 2	TIER 2
	National Guard personnel	500,000	Not Targeted	TIER 2	TIER 2
	Other domestic national security personnel	150,000	Not Targeted	TIER 2	TIER 2
	Other active duty military & essential support	1,500,000	Not Targeted	TIER 3	TIER 3
<b>Health care and community support services</b>	Public health personnel	300,000	TIER 1	TIER 1	TIER 1
	Inpatient health care providers	3,200,000	TIER 1	TIER 1	TIER 1
	Outpatient & home health providers	2,600,000	TIER 1	TIER 1	TIER 1
	Health care providers in long-term care facilities	1,600,000	TIER 1	TIER 1	TIER 1
	Pharmacists & pharmacy technicians	725,000	TIER 1	TIER 1	TIER 1
	Community support & emergency management	600,000	Not Targeted	TIER 2	TIER 2
	Mortuary services personnel	50,000	Not Targeted	TIER 2	TIER 2
	Other health care personnel	350,000	Not Targeted	TIER 2	TIER 3
<b>Other critical infrastructure</b>	Emergency services & public safety sector personnel (EMS, law enforcement, & fire services)	2,000,000	TIER 1	TIER 1	TIER 1
	Manufacturers of pandemic vaccine & antivirals	50,000	TIER 1	TIER 1	TIER 1
	Communications/information technology (IT), electricity, nuclear, oil & gas, water sector personnel, & financial clearing & settlement personnel	2,200,000	Not Targeted	Not Targeted	TIER 2
	Critical government personnel - operational & regulatory functions	425,000	Not Targeted	Not Targeted	TIER 2
	Banking & finance, chemical, food & agriculture, pharmaceutical, postal & shipping, & transportation sector personnel (critical infrastructure with greater redundancy)	3,400,000	Not Targeted	Not Targeted	TIER 3
	Other critical government personnel	400,000	Not Targeted	Not Targeted	TIER 3
<b>General population</b>	Pregnant women	4,000,000	TIER 1	TIER 1	TIER 1
	Infants & toddlers 6–35 months old	11,000,000	TIER 1	TIER 1	TIER 1
	Household contacts of infants <6 months old	4,500,000	TIER 2	TIER 2	TIER 2
	Children 3–18 years old with high risk condition	7,000,000	TIER 2	TIER 2	TIER 2
	Children 3–18 years old without high risk condition	62,000,000	TIER 2	TIER 2	TIER 3
	Adults 19–64 years old with high risk condition	38,000,000	TIER 2	TIER 3	TIER 4
	Adults ≥65 years old	41,000,000	TIER 2	TIER 3	TIER 4
	Healthy adults 19–64 years old	132,000,000	TIER 3	TIER 4	TIER 5

## State and Local Roles and Responsibilities

Planning for targeting critical workforce is a combined state and local responsibility. Depending on the specific state's governance structure, states play a key role in ensuring readiness at all levels. Local jurisdictions that operate under the centralized control of a state may have less responsibility in ensuring vaccine targeting for critical workforce than local jurisdictions that operate under local or shared state governance. Prior to a pandemic, it is essential that both state and local jurisdictions have a clear understanding of each other's roles and responsibilities pertaining to vaccine targeting. Regardless of whether the state is centralized or decentralized, the state health department should have visibility of all local-level preparedness to rapidly identify, mobilize, and vaccinate their critical workforce.

The table below is a suggested framework for defining responsibilities within a jurisdiction. Answers should be based on discussion and consensus between the state and local jurisdictions.

### DEFINING STATE AND LOCAL PUBLIC HEALTH RESPONSIBILITIES

**Instructions:** Mark whether each task is a state or local responsibility.

	State-Led	Locally-Led
Recruits potential pandemic vaccine providers outside of Vaccines for Children <sup>11</sup> network and points of dispensing	<input type="checkbox"/>	<input type="checkbox"/>
Maintains up-to-date points of contact for critical workforce groups	<input type="checkbox"/>	<input type="checkbox"/>
Estimates the population for each critical workforce group	<input type="checkbox"/>	<input type="checkbox"/>
Plans for rapid communication with points of contact of critical workforce groups	<input type="checkbox"/>	<input type="checkbox"/>
Plans for second dose reminders of pandemic vaccine	<input type="checkbox"/>	<input type="checkbox"/>
Ensures plans are in place for vaccination administration data to be submitted to an immunization information system (IIS)	<input type="checkbox"/>	<input type="checkbox"/>
Evaluates and tests pandemic readiness through drills and exercises	<input type="checkbox"/>	<input type="checkbox"/>
Other:	<input type="checkbox"/>	<input type="checkbox"/>

<sup>11</sup> The Vaccines for Children (VFC) program is a federally funded program that provides vaccines at no cost to children who might not otherwise be vaccinated because of inability to pay. See [www.cdc.gov/vaccines/programs/vfc/index.html](http://www.cdc.gov/vaccines/programs/vfc/index.html).

## Monitoring Local Readiness

Despite differences in governance structures, states should take an active role in monitoring pandemic vaccination readiness for the critical workforce among local jurisdictions. State and local health department planners should familiarize themselves with the critical workforce groups listed in CDC's *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic* (2018)<sup>12</sup> and the 16 critical infrastructure sectors in the *National Infrastructure Protection Plan*<sup>13</sup> to assess whether their jurisdiction contains persons who may need to be targeted for vaccine during an influenza pandemic.

Section three, *Pandemic Vaccine Administration Readiness*, of this guidance details elements necessary for a pandemic vaccine campaign that can be used to monitor readiness. There are several tools that can measure pandemic influenza readiness for targeting vaccine at the state or local level. One tool, **Appendix D: Pandemic Influenza Vaccine Targeting Checklist**, is a checklist of planning activities for use by state and local health departments. The items in the checklist include specific activities public health emergency planners and immunization programs can do to prepare for targeted pandemic influenza vaccinations.

Completing these activities will require collaboration between preparedness and immunization programs, emergency planners, and other public health partners. However, states should develop their own measures of local vaccine targeting readiness as needed. Measures developed by the state can be in addition to or completely supplant the measures suggested below.

Another tool that public health emergency planners may use to monitor local public health readiness is found in **Appendix E: Example Local Evaluation of Pandemic Vaccine Readiness for Critical Workforce**. This tool does not replace requirements necessary for other programs.

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12 *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic*. See [www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html](http://www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html).

13 U.S. Department of Health and Human Services. *National Infrastructure Protection Plan (NIPP)*, 2018. See [www.dhs.gov/national-infrastructure-protection-plan](http://www.dhs.gov/national-infrastructure-protection-plan).

## Engaging a Pandemic Vaccine Targeting Planning Team

As noted in the *Community Planning Framework for Healthcare Preparedness*, “planning for an influenza pandemic is applicable to all communities despite size or location, and includes all agencies and organizations represented within the community’s critical workforce. A community-wide planning effort cannot be undertaken by a single individual. Instead, development of this plan needs to include expertise and input from many partners within critical workforce target groups. Bringing these people together is crucial to the success of the planning effort.”<sup>14</sup>

### *Who is on the Planning Team?*

Planning team members are the champions of the overall planning effort. Members of the team should be people who are committed to open communication with stakeholders. Team members should represent the target groups that are part of your community’s critical workforce, be knowledgeable of major sectors, and be well connected within the community, regularly working with state and local public health and emergency management agencies. It may be beneficial to recruit individuals that have participated in other local public health initiatives, such as planning for anthrax, smallpox, or a radiologic/nuclear event.

### *Roles and Responsibilities of the Planning Team*

- Identifies target groups represented within jurisdictions
- Conducts a jurisdiction critical workforce vaccine response assessment
- Lays the framework for developing a critical workforce vaccine plan

## Conduct a Critical Workforce Group Assessment

One of the most important responsibilities of the planning team is to conduct an assessment of critical workforce in the jurisdiction.

### *Critical Workforce Target Group Contacts in Your Jurisdiction*

The first step is to identify critical workforce target groups within the jurisdiction. Agencies that may be helpful in determining the workforce groups in a jurisdiction include, but are not limited to, emergency management agencies, the Department of Labor, the Chamber of Commerce, federal executive boards, and the Association of Continuity Professionals (ACP). Chapters of the Association of Continuity Professionals (ACP) may be found at [acp-international.com/membership/chapters](http://acp-international.com/membership/chapters). When creating a list, include the target groups, names, titles, agencies, and contact information for the emergency planners that represent those target groups. Ensure this contact information is easily accessible in your pandemic flu plan and updated annually. A sample target group contact list can be found in **Appendix A**.

For some target groups, a jurisdiction may only need one emergency planner contact, while others may need more than one. For example, a jurisdiction may have multiple electrical utility companies that would need to be contacted. If you are unsure of emergency planning contacts in a target group, contacting the agencies listed above may be helpful.

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<sup>14</sup> Centers for Disease Control and Prevention, *Community Planning Framework*  
[www.cdc.gov/phpr/readiness/healthcare/communityplanningframework.htm](http://www.cdc.gov/phpr/readiness/healthcare/communityplanningframework.htm)

# Critical Workforce Target Group Estimates

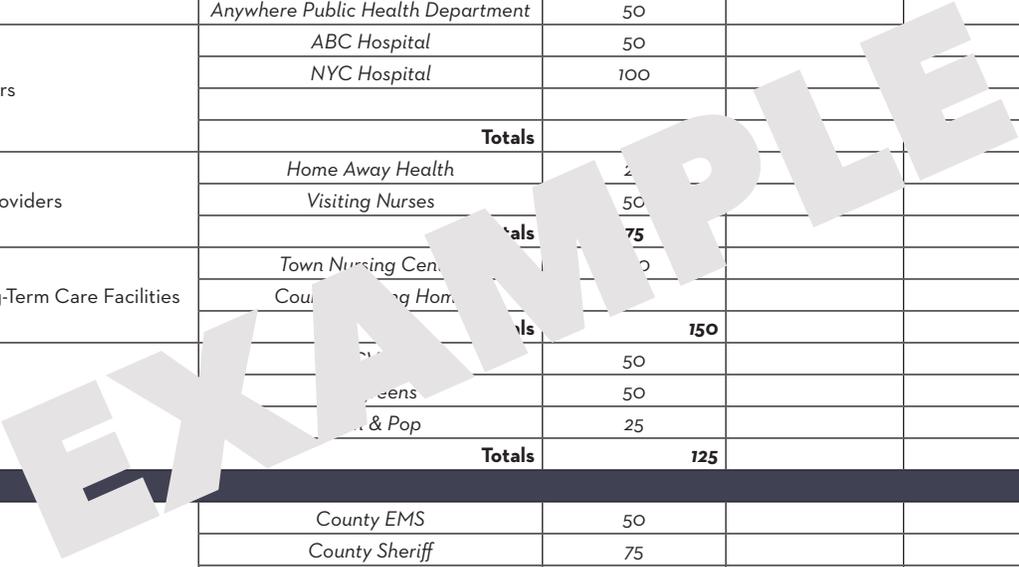
Once emergency planning points of contact have been identified within each organization and agency in the critical workforce target groups, you may estimate the number of key workers. Many, if not all, critical workforce target groups, organizations, or agencies will have already identified their key positions in their Continuity of Operations (COOP) plan. COOP plans identify key personnel responsible for carrying out essential functions of organizations that make up the target group. It is important to remember that only key positions for essential functions be considered in estimates, as the influenza vaccine supply may be limited in the initial phases of the pandemic.

## CATEGORY/TARGET GROUP ESTIMATES

**Appendix B** includes a screenshot of an Excel worksheet that can be used to estimate the number of personnel within each target group represented in a jurisdiction. The document includes a worksheet for each tier with categories and population/target groups in that specific tier. It can also be used to capture the point of contact (POC) and POC information.

Pandemic Influenza Vaccination Targeting  
**TIER 1-HIGH SEVERE**

Population Group	Agency/ Organization	Estimate # in Key Population Group	Point of Contact (POC)	POC Number	Comments
<b>Homeland Security</b>					
Deployed & Mission--Critical Personnel	Fort Army	100	Lt. Jack Smith	123-456-7890	
	<b>Totals</b>	<b>100</b>			
	<b>Health Care &amp; Community Support</b>				
Public Health Personnel	Anywhere Public Health Department	50			
	ABC Hospital	50			
	NYC Hospital	100			
Inpatient Health Care Providers	<b>Totals</b>	<b>200</b>			
	<b>Outpatient &amp; Home Health Providers</b>				
Outpatient & Home Health Providers	Home Away Health	25			
	Visiting Nurses	50			
	<b>Totals</b>	<b>75</b>			
Health Care Providers in Long-Term Care Facilities	Town Nursing Cen.	50			
	County Long Horn	100			
	<b>Totals</b>	<b>150</b>			
Pharmacy & Pharmacy Techs	Pharmacy A	50			
	Pharmacy B	50			
	Pharmacy C & Pop	25			
	<b>Totals</b>	<b>125</b>			
<b>Critical Infrastructure</b>					
Emergency Services & Public Safety Sector Personnel	County EMS	50			
	County Sheriff	75			
	Metro Fire Station	50			
	<b>Totals</b>	<b>175</b>			
Manufacturers of Pandemic Vaccine and Antivirals		0			



The first page of the **Appendix B: Tier Estimates Worksheet**, is a summary of estimated individuals that automatically populates as each of the worksheets for tiers of target groups is completed.

Estimates from the summary worksheet or individual worksheets can be provided to the state, if needed, or used for the jurisdiction's total critical workforce estimates.

**Appendix C** is a Word document that can also be used to illustrate a summary of a jurisdiction's critical workforce. It is outlined similar to **Table 1** in the *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine during an Influenza Pandemic*.

## Critical Workforce Target Group Sub-Prioritization

While the U.S. government continually works with manufacturers to plan for the early production of enough pandemic influenza vaccine for all potentially targeted groups (both critical workforce and medically at-risk), it is likely that jurisdictions will initially receive only a portion of the pandemic vaccine needed for these groups. This may necessitate sub-prioritization of the critical workforce for initial doses of pandemic vaccine. When thinking through sub-prioritization, planning teams should consider a range of pandemic vaccine supply scenarios. *The 2018 Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine during an Influenza Pandemic, Box 1*, outlines a potential scenario of sub-targeting Tier 1 individuals based on availability of vaccine supply.<sup>15</sup>

Early in a pandemic, vaccine may be in extremely short supply such that there is not enough available to vaccinate all members of Tier 1 critical workforce groups. The planning team should be challenged to decide how vaccine will be allocated within Tier 1 critical workforce groups and justify their reasoning.

The table below can assist in determining vaccine allocation to critical workforce within Tier 1 when there is not enough vaccine for the entire population of Tier 1.

How might your jurisdiction sub-prioritize groups with limited vaccine supply?

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<sup>15</sup> *Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic*. See [www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html](http://www.cdc.gov/flu/pandemic-resources/national-strategy/planning-guidance/index.html).

## TARGET GROUP SUB-PRIORITIZATION ESTIMATES FOR DISCUSSION PURPOSES-- THEORETICAL VACCINE SUPPLY

**Instructions:** List the total number of doses available for allocation based on the proportion of Tier 1 population that will be vaccinated in each scenario. Then determine how your jurisdiction would allocate doses of vaccine to each target group given the total number of doses available.

**100% of Tier 1 doses can be carried over from jurisdiction Tier 1 estimates from Appendix B.**

Proportion of Jurisdiction's Tier 1 Population to be Vaccinated (%)	100%	50%	25%	10%
Vaccine Doses Available (#)	500,000	250,000	125,000	50,000

### Homeland and National Security

Target Group	Scenario 1: Vaccine is available for 100% of Tier 1 CW positions (# of doses allocated)	Scenario 2: Vaccine is available for 50% of Tier 1 CW positions (# of doses allocated)	Scenario 3: Vaccine is available for 25% of Tier 1 CW positions (# of doses allocated)	Scenario 4: Vaccine is available for 10% of Tier 1 CW positions (# of doses allocated)
Deployed & Mission-Critical Personnel	100,000	50,000	25,000	10,000 (Deployed)

### Health Care and Community Support Services

Target Group	Scenario 1: Vaccine is available for 100% of Tier 1 CW positions (# of doses allocated)	Scenario 2: Vaccine is available for 50% of Tier 1 CW positions (# of doses allocated)	Scenario 3: Vaccine is available for 25% of Tier 1 CW positions (# of doses allocated)	Scenario 4: Vaccine is available for 10% of Tier 1 CW positions (# of doses allocated)
Public Health Personnel	40,000	20,000	5,000	2,000
Inpatient Health Care Providers	40,000	40,000	20,000	5,000
Outpatient & Home Health Care Providers	50,000	25,000	10,000	2,000
Health Care Providers in Long-Term Care Facilities	70,000	35,000	15,000	3,000
Pharmacists & Pharmacy Technicians	40,000	20,000	5,000	2,000

### Other Critical Infrastructure

Target Group	Scenario 1: Vaccine is available for 100% of Tier 1 CW positions (# of doses allocated)	Scenario 2: Vaccine is available for 50% of Tier 1 CW positions (# of doses allocated)	Scenario 3: Vaccine is available for 25% of Tier 1 CW positions (# of doses allocated)	Scenario 4: Vaccine is available for 10% of Tier 1 CW positions (# of doses allocated)
Emergency Services & Public Safety Sector Personnel (EMS, Law Enforcement, & Fire Services)	100,000	50,000	15,000	5,000
Manufacturers of Pandemic Vaccine & Antivirals	20,000	10,000	5,000	1,000

Local jurisdictions will need to ensure that points of dispensing and vaccination clinics (DVCs) are ready to administer vaccine. Many jurisdictions presently have plans in place to set up points of dispensing (PODs) to rapidly distribute antibiotics. These plans can be adapted to include vaccine administration, but vaccine-specific considerations must be addressed and immunization program subject matter experts are essential in planning.

Local jurisdictions should work with their immunization programs to plan for the following:

- Ordering and receiving pandemic influenza vaccine
- Training and demonstration of competence of persons handling and administering vaccines
- Storing and handling vaccines
- Screening for pandemic vaccination eligibility, critical workforce, or priority status and vaccine contraindications
- Reporting pandemic vaccine administration data through an immunization information system (IIS)
- Finalizing a system or approach for providing reminders and/or recalling specific critical workforce patients for a second pandemic vaccine dose, if needed
- Reporting pandemic vaccine adverse events

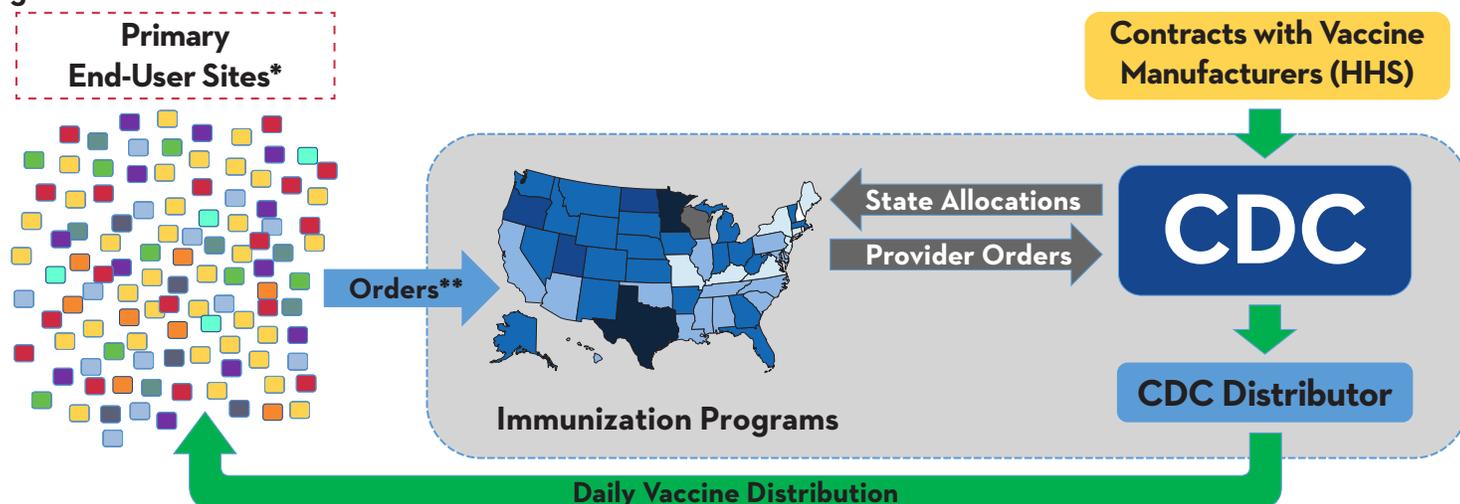
## Ordering and Receiving Pandemic Influenza Vaccine

HHS will work with vaccine manufacturers to develop and produce pandemic influenza vaccine matched to the circulating pandemic influenza virus strain. Each state, in coordination with local health departments, will recruit vaccine providers and sites to be pandemic vaccine providers.

Groups designated to administer pandemic vaccine will need a plan for receiving, storing, administering, and tracking vaccine administration. For some critical workforce groups, the best approach may be to coordinate separate vaccination clinics with the health department or partners. Closed PODs could be leveraged and used for critical workforce groups. The planning team should work to ensure that there are clearly written, up-to-date, and detailed standard operating procedures (SOPs) in place for vaccine administration to critical workforce.

Depending on the governance structure of the state, providers will place orders for pandemic vaccine with either the state or local health department's immunization program. That state or local public health department will allocate pandemic vaccine to recruited providers. As recommendations for use of pandemic vaccine change and pandemic vaccine supply become more available, allocations of pandemic vaccine to different providers may change. **Figure 2** outlines the distribution for pandemic influenza vaccine.

**Figure 2 Pandemic Influenza Vaccine Distribution**



\*Sites includes VFC and non-VFC providers and a mix of provider types and settings (e.g. doctors' offices, pharmacies, local HDs, hospitals).

\*\*Ordering and allocation procedures may differ across states; ordering often occurs through interface with the jurisdiction's immunization information system (IIS) or directly in CDC's publicly funded vaccine program management system (VTrckS)

As a publicly funded asset, it is essential for state and local jurisdictions to ensure accountability of pandemic vaccine, especially early in a response when there may be limited supply. In the next influenza pandemic, HHS plans to leverage the existing system used to manage routine publicly funded vaccine, currently used for the Vaccines for Children (VFC) program, to manage and distribute pandemic influenza vaccine, as it did for the 2009 H1N1 pandemic.

*The exact process for ordering, allocating, and tracking the distribution of pandemic vaccine is specific to a jurisdiction. Contact your state immunization program at [www.cdc.gov/vaccines/imz-managers/awardee-imz-websites.html](http://www.cdc.gov/vaccines/imz-managers/awardee-imz-websites.html) for more information regarding ordering pandemic vaccine.*

## Vaccine Storage and Handling

Because pandemic vaccine is a valuable federal asset, it will be essential to minimize vaccine loss and account for every dose received and used, whether administered, wasted, compromised, expired, or transferred. Once vaccine has been ordered and received, strict storage and handling guidelines must be followed. Vaccines are temperature-sensitive and must be stored and handled correctly to ensure efficacy and maximize shelf-life. The planning team should work closely with each vaccination site to ensure that procedures are followed.

*More information regarding general vaccine storage and handling can be found in CDC's Vaccine Storage and Handling Toolkit at [www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf](http://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf).*

## Administering Pandemic Influenza Vaccine

CDC recommends that vaccine is prepared and administered by the same person. It is crucial that vaccination staff is trained to handle and administer vaccines. Prior to administration, staff must screen patients for contraindications and precautions against the vaccine. A vaccine information statement (VIS) must be provided to every patient, parent, or guardian before each dose of vaccine. The patient should be provided with an immunization record that includes vaccine(s) administered and dates of administration. Since the pandemic influenza vaccine may be issued under an Emergency Use Authorization (EUA), there may be additional paperwork

required for the patient and provider. Consult with the immunization program in your jurisdiction to determine if any additional paperwork is required.

For vaccine to be administered as safely as possible, programs should review CDC's best practice guidelines for vaccine administration at [www.cdc.gov/vaccines/pubs/pinkbook/vac-admin.html](http://www.cdc.gov/vaccines/pubs/pinkbook/vac-admin.html).

## Reporting Vaccine Administration Data to an Immunization Information System

Immunization information systems (IISs), also known as vaccine registries, are confidential, population-based, computerized databases for recording information, including vaccination history and vaccine doses given by participating health care providers. All immunization providers are encouraged to participate and document administered vaccines in an IIS. When vaccine administration is routinely reported to an IIS, the IIS can be used to track vaccine administration data for the jurisdiction. When coordinating vaccination sites, jurisdictions should develop plans for reporting vaccine administration data to the IIS in a timely manner (i.e., within 7 days of vaccine administration). Data reporting may require specific resources such as a computer and Internet access.

During a pandemic, a site-specific operational and data management plan should be developed and circulated among staff and leadership to ensure awareness of the protocol for recording and uploading vaccine administration data. Data submission tasks may require designated staff or allocating resources to systems and tools to rapidly input data on-site. Before a pandemic, public health planners in coordination with preparedness and immunization staff should exercise basic data management plans for a variety of scenarios, specifying how IIS core data elements are recorded, when data are reported to the IIS, and which staff are responsible for reporting. Preparedness programs should work closely with immunization program officials to understand relevant legislation or regulations surrounding inputting patient and provider data into the IIS. For example, IIS regulations may require adult patients to consent or “opt in” to have their vaccine administration data submitted.<sup>16</sup>

## Recalling Patients for a Second Pandemic Vaccine Dose

During a severe influenza pandemic, it is possible that the entire population will need two doses of vaccine, administered at least 21 days apart. This differs from the typical seasonal influenza vaccination where all adults and most children need only one dose each year.

This may require jurisdictions to ensure that vaccine providers or employers of critical workforce have a plan in place to provide potential reminders about timing of and need for second pandemic vaccine doses. A common reminder method is a paper record of vaccinations. Individuals can receive wallet-sized “shot cards” with dates that instruct them when to return for their second dose. Some jurisdictions’ IISs may have a reminder or recall function. Some electronic health records (EHRs) may have systems that have the ability to facilitate vaccine dose reminders to specific

### REMINDERS FOR DOSE 2

- Immunization cards
- Mailer/postcard
- Automated text message or phone call
- Pharmacy-based prescription reminder systems
- Electronic health records

<sup>16</sup> Lehnert, JD, Moulia, DL, Murthy, NC, Parker-Fiebelkorn, A, Vagi, SJ, Dopson, SA, Graitcer, SB. Key Elements for Conducting Vaccination Exercises for Pandemic Influenza Preparedness. *American Journal of Public Health*, Supplement 4, 2018 Vol 108, No 54.

individuals. A short message service (SMS) text-based system for public health messaging may also be available. Jurisdictions may be able to explore use of these systems to send targeted pandemic vaccine dose reminders. Multiple methods should be employed to provide reminders to patients to receive their second dose if required.

*For more information on the functionalities available to you in your jurisdiction's IIS, contact your local immunization staff at [www.cdc.gov/vaccines/programs/iis/contacts-registry-staff.html](http://www.cdc.gov/vaccines/programs/iis/contacts-registry-staff.html).*

## Reporting Vaccine Adverse Events during an Influenza Pandemic

CDC strongly encourages reporting clinically important adverse events following pandemic vaccination to the Vaccine Adverse Events Reporting System (VAERS). VAERS is a national program managed by CDC and the US Food and Drug Administration (FDA) to monitor the safety of all vaccines licensed in the United States. Jurisdictions should ensure that providers and provider sites leveraged during an influenza pandemic understand the requirements and procedures for reporting to VAERS. Adverse events will also be monitored through the Vaccine Safety Datalink.

*More information can be found at [www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-vaers-color-office.pdf](http://www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-vaers-color-office.pdf).*

## Best Practices for Temporary, Off-Site, or Satellite Clinics

Critical workforce vaccine administration may occur at temporary sites that are not traditional health care settings, such as a workplace, cafeteria, or school. The *Checklist of Best Practices for Vaccination Clinics held in Satellite, Temporary, or Off-Site Locations* was developed by the National Adult and Influenza Immunization Summit in coordination with CDC to assist with vaccination clinics held in temporary or non-traditional locations.

The checklist offers step-by-step guidance for activities that need to take place before, during, and after a vaccination clinic to ensure proper vaccine administration and patient safety. An on-site clinic coordinator should complete and sign the checklist each time a vaccination clinic is conducted. Planning teams should familiarize themselves with this checklist and include its guidance in vaccination site planning where pertinent.

*The checklist can be found at [www.izsummitpartners.org/naiis-workgroups/influenza-workgroup/off-site-clinic-resources/](http://www.izsummitpartners.org/naiis-workgroups/influenza-workgroup/off-site-clinic-resources/).*

Exercises are essential to jurisdictional preparedness, as they enable testing and validation of plans, policies and procedures, personnel, organizational structure, equipment requirements, and training. Guidelines for conducting exercises are laid out in detail in the *Homeland Security Exercise and Evaluation Program* (HSEEP). Jurisdictions may have emergency planners with experience conducting and evaluating preparedness exercises according to this framework. When conducting a vaccination exercise that targets critical workforce, jurisdictions should pay special attention to the type of exercise planning, objectives, and after-action report.

More information can be found at [www.fema.gov/hseep](http://www.fema.gov/hseep).

## Exercise Planning Team

An exercise planning team represents the full range of relevant stakeholders. Immunization subject matter experts should be included when planning vaccine targeting exercises. Subject matter experts will make the exercise scenario realistic and plausible. The vaccine subject matter experts included on an exercise planning team will depend on the exercise objectives. Common subject matter experts may include:

- Immunization program managers
- Public health preparedness planners
- Emergency management agency/exercise team
- Immunization information system administrators
- Health care provider group representatives or professional societies
- State or local pharmacy associations
- Critical workforce vaccine response points of contact

## Exercise Types

There are two categories of exercises: discussion-based and operations-based. Discussion-based exercises are used to familiarize participants with current plans, policies, agreements, and procedures or to develop new ones. These include workshops and tabletop exercises (TTX). Operations-based exercises include drills, functional exercises (FE), and full-scale exercises (FSEs). Ideally, exercises should simulate real-world events as much as possible.

The types of exercises that a jurisdiction conducts will depend on a number of factors, including the exercise objectives, participants, resources, and requirements that the jurisdiction may have under grants or cooperative agreements.

CDC-funded Public Health Emergency Preparedness (PHEP) programs are required to conduct one full-scale exercise within a five-year period. Typically, there are specific requirements, objectives, or measurements to fulfill the full-scale exercise requirements. These exercises take at least a full day and include multiple agencies testing multiple functions.

## Exercise Scenario

A pandemic influenza exercise targeting critical workforce should include a scenario with specific objectives the jurisdiction wants to address. A scenario should contain general context or a narrative of the incident.

### SUGGESTED PANDEMIC VACCINE PLANNING EXERCISES

	Exercise Type	Example
<b>Discussion-based</b>	Workshop	Facilitated discussion of pandemic vaccine allocation to targeted groups
	Tabletop (TTX)	Walk through planned decision-making process for allocation of pandemic vaccine depending on various supply and other scenarios
<b>Operation-based</b>	Drill	“Call down drills” to test phone numbers of points of contact
	Functional exercise or full-scale exercise	Use of seasonal influenza clinics or other events to test critical workforce vaccination

## Exercise After-Action Report

After an exercise has been completed, it is essential to write an After-Action Report (AAR) describing findings from your exercise. AAR templates may be found on FEMA’s website at [preptoolkit.fema.gov/web/hseep-resources](https://preptoolkit.fema.gov/web/hseep-resources). An AAR provides feedback to exercise participants and agencies on their performance during the exercise. A complete AAR will include a record of what happened during the exercise, as well as recommendations for improving plans. Depending on the specific exercise, activities related to testing critical workforce plans that should be included in an exercise and AAR are:

- Determining number of persons in each category of critical workforce
- Developing and maintaining a list of POCs for each target or population group of critical workforce
- Rapidly mobilizing the targeted critical workforce groups
- Establishing procedures for ordering and receiving vaccine
- Training and demonstration of competence of persons handling and administering vaccines
- Storing and handling pandemic influenza vaccine
- Screening for pandemic vaccination eligibility, critical workforce, or priority status and vaccine contraindications
- Reporting pandemic vaccine administration data through an immunization information system (IIS)
- Establishing a system for providing reminders and/or recalling patients for a second pandemic vaccine dose, if needed
- Practicing procedures for reporting pandemic vaccine adverse events
- Setting up and safely conducting temporary vaccination clinics

## Conclusion

Preparations for an influenza pandemic, particularly when vaccine may be limited in the early stages of the pandemic, will be invaluable to maintain operational functions of a jurisdiction. By assessing workforce needs and identifying those at risk in a jurisdiction, essential services for the community are more likely to be maintained. Understanding the processes outlined in this document is just the first step to ensuring complete operational readiness for vaccination of critical workforce in a jurisdiction. Even jurisdictions that think they are operationally ready to rapidly identify and vaccinate their critical workforce in a pandemic should continue to use exercise and real-world events to improve and refine their readiness. Preparing and implementing a pandemic influenza vaccination campaign is dependent not on just one group but on all partners at the federal, state, and local levels and the public and private sectors. Only by working together can the nation be ready for the next influenza pandemic.

### Homeland and National Security

Target/Population Group	Agency	Contact Name	Contact Title	Contact Number
<i>Ex: Essential military support &amp; sustainment personnel</i>	<i>Army Base</i>	<i>SGT. Jones</i>	<i>MCM Preparedness Team</i>	<i>123-456-1111</i>

### Health Care and Community Support Services

Target/Population Group	Agency	Contact Name	Contact Title	Contact Number
<i>Ex: Public Health personnel</i>	<i>XYZ Health Department</i>	<i>Sue Smith</i>	<i>Preparedness Coordinator</i>	<i>456-789-2222</i>

### Other Critical Infrastructure

Target/Population Group	Agency	Contact Name	Contact Title	Contact Number
<i>Ex: Emergency Services &amp; Public Safety</i>	<i>ABC EMS</i>	<i>John Jones</i>	<i>EMS Preparedness Coordinator</i>	<i>333-555-6767</i>

The tier estimate worksheet is an interactive Excel document that can be used to assist jurisdictions in estimating numbers of critical workforce in each category and tier for a **high/very high severe influenza pandemic**. The worksheet may be found on CDC's Immunization Service Division's (ISD) SharePoint and the Division of State and Local Readiness' (DSLRL) On-TRAC which are available to those with access. If needed, contact your DSLR or ISD representative to obtain the worksheet.

[Tier estimates on ISD SharePoint](#)

[Tier estimates on DSLR On-TRAC](#)

Category	Population Group	Estimated Number of Persons					TOTALS
		Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	
<b>Homeland &amp; National Security</b>	Deployed & Mission-Critical Personnel	○					
	Critical Military Support & Sustainment Personnel		○				
	Intelligence Services		○				
	National Guard Personnel		○				
	Other Domestic National Security Personnel		○				
	Other Active Duty Military & Critical Support			○			
<b>Health Care &amp; Community Support Services</b>	Public Health Personnel	○					
	Inpatient Health Care Providers	○					
	Outpatient & Home Health Providers	○					
	Health Care Providers in Long-Term Care Facilities	○					
	Pharmacists and Pharmacy Technicians	○					
	Community Support & Emergency Management		○				
	Mortuary Services Personnel		○				
	Other Health Care Personnel			○			
<b>Critical Infrastructure</b>	Emergency Services & Public Safety Sector Personnel (EMS, Law Enforcement, & Fire Services)	○					
	Manufacturers of Pandemic Vaccines & Antivirals	○					
	Technology (IT, Electricity, Nuclear, Oil & Gas, Water Sector Personnel, & Financial Clearing & Settlement Personnel)		○				
	Critical Government Personnel-Operational & Regulatory Functions		○				
	Food & Agriculture, Pharmaceutical, Postal & Shipping, & Transportation Sector Personnel (Critical Infrastructure with Greater Redundancy)			○			
	Other Critical Government Personnel			○			
<b>General Population</b>	Pregnant Women	○					
	Infants & Toddlers 6-35 Months Old	○					
	Household Contacts of Infants <6 Months Old		○				
	Children 3-18 Years Old with High-Risk Conditions		○				
	Children 3-18 Years Old without High-Risk conditions			○			
	Adults 19-64 Years Old with High-Risk Conditions				○		
	Adults ≥65 Years Old				○		
	Old					○	
<b>TOTALS</b>		○	○	○	○	○	○

The jurisdictional estimate worksheet can be used to illustrate a summary of a jurisdiction's critical workforce.



Category	Population Group	Estimated # of Persons	Low Severity	Moderate Severity	High/Very High Severity
<b>Homeland and national security</b>	Deployed & mission essential personnel		TIER 1	TIER 1	TIER 1
	Essential military support & sustainment personnel		Not Targeted	TIER 2	TIER 2
	Intelligence services		Not Targeted	TIER 2	TIER 2
	National Guard personnel		Not Targeted	TIER 2	TIER 2
	Other domestic national security personnel		Not Targeted	TIER 2	TIER 2
	Other active duty military & essential support		Not Targeted	TIER 3	TIER 3
<b>Health care and community support services</b>	Public health personnel		TIER 1	TIER 1	TIER 1
	Inpatient health care providers		TIER 1	TIER 1	TIER 1
	Outpatient & home health providers		TIER 1	TIER 1	TIER 1
	Health care providers in long-term care facilities		TIER 1	TIER 1	TIER 1
	Pharmacists & pharmacy technicians		TIER 1	TIER 1	TIER 1
	Community support & emergency management		Not Targeted	TIER 2	TIER 2
	Mortuary services personnel		Not Targeted	TIER 2	TIER 2
	Other health care personnel		Not Targeted	TIER 2	TIER 3
<b>Other critical infrastructure</b>	Emergency services & public safety sector personnel (EMS, law enforcement, & fire services)		TIER 1	TIER 1	TIER 1
	Manufacturers of pandemic vaccine & antivirals		TIER 1	TIER 1	TIER 1
	Communications/information technology (IT), electricity, nuclear, oil & gas, water sector personnel, & financial clearing & settlement personnel		Not Targeted	Not Targeted	TIER 2
	Critical government personnel - operational & regulatory functions		Not Targeted	Not Targeted	TIER 2
	Banking & finance, chemical, food & agriculture, pharmaceutical, postal & shipping, & transportation sector personnel (critical infrastructure with greater redundancy)		Not Targeted	Not Targeted	TIER 3
	Other critical government personnel		Not Targeted	Not Targeted	TIER 3
<b>General population</b>	Pregnant women		TIER 1	TIER 1	TIER 1
	Infants & toddlers 6-35 months old		TIER 1	TIER 1	TIER 1
	Household contacts of infants <6 months old		TIER 2	TIER 2	TIER 2
	Children 3-18 years old with high risk condition		TIER 2	TIER 2	TIER 2
	Children 3-18 years old without high risk condition		TIER 2	TIER 2	TIER 3
	Adults 19-64 years old with high risk condition		TIER 2	TIER 3	TIER 4
	Adults ≥65 years old		TIER 2	TIER 3	TIER 4
	Healthy adults 19-64 years old		TIER 3	TIER 4	TIER 5

The pandemic influenza vaccine targeting checklist measures readiness for targeting vaccine at the state or local level using a checklist of planning activities.

To download, see [www.cdc.gov/flu/pandemic-resources/pdf/2018-Influenza-Checklist.pdf](http://www.cdc.gov/flu/pandemic-resources/pdf/2018-Influenza-Checklist.pdf).

## Pandemic Influenza Vaccine Targeting Checklist

### Planning Activities for State and Local Health Departments

**T**o assist state and local health departments in planning for targeting vaccine during an influenza pandemic, the Centers for Disease Control and Prevention (CDC) has developed the following checklist. The items in the checklist are based on the [2018 Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic](#), and include specific activities public health emergency planners and immunization programs can do to prepare for targeted pandemic influenza vaccination. In many states these activities will require extensive collaboration between state and local public health departments and with neighboring jurisdictions. This checklist and accompanying guidance are provided for planning purposes and may change as a future influenza pandemic emerges.

For an online version of this document, please visit: <https://www.cdc.gov/flu/pandemic-resources/pdf/2018-Influenza-Checklist.pdf>

**Review key federal guidance documents**

In Progress	Completed	Date Completed	Activity
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Review with key emergency management partners: <ul style="list-style-type: none"> <li>2018 Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic <a href="https://www.cdc.gov/flu/pandemic-resources/pdf/2018-Influenza-Guidance.pdf">https://www.cdc.gov/flu/pandemic-resources/pdf/2018-Influenza-Guidance.pdf</a></li> <li>Critical Infrastructure Sectors <a href="https://www.dhs.gov/critical-infrastructure-sectors">https://www.dhs.gov/critical-infrastructure-sectors</a></li> </ul>

**Identify pandemic influenza vaccine target groups**

Population groups at higher risk of influenza complications, as defined in the [2018 Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic](#).

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Estimate the number of persons in the jurisdiction who may be at higher risk for complications during the influenza pandemic.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure operational plans include use of multiple vaccination settings, such as public health departments, pharmacies, and physicians' offices and clinics, for vaccinating those populations.

Tier 1–3 critical workforce groups, as defined in the [2018 Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic](#)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Develop and maintain a current list of vaccination points of contact for each critical workforce group in the jurisdiction and update annually
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Determine the number of individuals in each Tier 1–3 critical workforce group in the jurisdiction, in collaboration with emergency management partners. Update annually.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lead planning discussions with major critical workforce employers and leaders about pandemic vaccine targeting concepts and plans for rapidly vaccinating Tier 1–3 critical workforce personnel.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Work with critical workforce employers and leaders to ensure plans are finalized to rapidly identify, contact, and mobilize targeted critical workforce personnel.</li> <li>Discuss scenarios and methods for sub-prioritization with major critical workforce employers (e.g., if there is only enough vaccine to vaccinate 10%, 25%, or 50% of the Tier 1 group).</li> </ul>

U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

**Establish plans for pandemic vaccination clinics for critical workforce**

In Progress	Completed	Date Completed	Activity
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ensure the jurisdiction's pandemic influenza vaccine response plan includes targeted pandemic vaccination plans for critical workforce.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Determine the approach(es) and settings for vaccination of each critical workforce group during a pandemic, based on existing resources/staff of critical workforce employers and planners (e.g., occupational health clinics, public health managed closed mass vaccination dispensing and vaccination clinics). See also: <a href="https://www.cdc.gov/flu/business/index.htm">https://www.cdc.gov/flu/business/index.htm</a> .
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Work with employers of critical workforce to ensure plans are in place to identify personnel (either by job category or job duties) who may be eligible for targeted vaccination
<input type="checkbox"/> For employers of critical workforce who will be directly providing immunizations, ensure employers have plans in place to:			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Screen the personnel eligible for vaccination (e.g., checking identification at time of vaccination).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Order, receive, store, and administer vaccine
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Document vaccine administration in the jurisdiction's immunization information system (IIS), as needed and appropriate or by other means (e.g., some states' IIS only include infant and childhood vaccinations).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Provide second pandemic vaccine dose reminders, if needed (e.g., through use of IISs or other reminder systems internal to each critical workforce group).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Follow best practices for vaccination clinics held at satellite, temporary, or off-site locations as outlined in <a href="#">Checklist of Best Practices for Vaccination Clinics Held at Satellite, Temporary, Or Off-Site Locations</a> .

**Develop communication plans for targeting pandemic influenza vaccine**

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Develop a strategy for rapid communication with medical providers who will vaccinate populations at higher risk for complications due to influenza infection.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Develop a strategy for rapid communication with critical workforce employers with personnel in targeted groups. Provide materials these employers can share with their workforce about the purpose, goals, and logistics of targeted vaccination.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Develop a communication strategy directed toward strategic partners and the public to explain why certain groups are targeted for early vaccination.

**Test pandemic influenza vaccine targeting plan**

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Conduct workshops and/or tabletop exercises with critical workforce employers and their immunizers to test command and control procedures/roles and implementation of the pandemic influenza vaccine targeting guidance in collaboration with the jurisdiction's critical workforce organizations, including those outside of public health and health care sectors.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use seasonal influenza vaccination clinics, exercises, or real-world events to test procedures for targeting critical workforce personnel for rapid mobilization, vaccination, and documentation of vaccine administration in IISs. Use these settings/events to practice using CDC's <a href="#">Checklist of Best Practices for Vaccination Clinics Held at Satellite, Temporary, or Off-Site Locations</a> .

**Additional Resources**

HHS Pandemic Influenza Plan 2017 Update: <https://www.cdc.gov/flu/pandemic-resources/pdf/pan-flu-report-2017v2.pdf>  
 Pandemic influenza planning and preparedness resources: <https://www.cdc.gov/flu/pandemic-resources/index.htm>  
 Guidelines and resources for vaccine storage, handling, administration, and safety: <https://www.cdc.gov/vaccines/index.html>

Vaccination of Critical Workforce during an Influenza Pandemic

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LOCAL EVALUATION OF PANDEMIC VACCINE READINESS FOR CRITICAL WORKFORCE

Planning Implementation				Operational Implementation			
Early	Intermediate	Established	Advanced	Early	Intermediate	Established	Advanced
<b>Key documents to review include a) Guidance on Allocating and Targeting Pandemic Influenza Vaccine, 2008; b) Interim Updated Planning Guidance on Allocating and Targeting Pandemic Influenza Vaccine During an Influenza Pandemic, 2018; c) Pandemic Influenza Assumptions; d) Pandemic Influenza Plan: 2017 Update; e) if applicable, state, local, other MCM Guidance</b>				None			
No documents reviewed	One of above documents reviewed (list document)	Two of above documents reviewed (list documents)	Three of above documents reviewed (list documents)				

Updated points of contact (POCs) for Critical Workforce (CW) groups				Annual call-downs for Critical Workforce (CW) groups			
POCs for 0-24% CW groups	POCs for 25-49% of CW groups	POCs for 50-74% of CW groups	POCs for 75-100% of CW groups	Annual call-downs for 0-24% CW groups	Annual call-downs for 25-49% CW groups	Annual call-downs for 50-74% CW groups	Annual call-downs for 75-100% CW groups

Note: Program should note which CW groups do not have estimates

Population size estimated for each CW group				None			
Population Estimates for 0-24% of CW groups	Population Estimates for 25-49% of CW groups	Population Estimates for 50-74% of CW groups	Population Estimates for 75-100% of CW groups				

Note: Program should note which CW categories do not have estimates yet.

Mechanism of vaccination determined for each Tier 1, 2, & 3 occupation group				None			
Mechanism of Vaccination for 0-24% of Tier 1, 2, & 3 CW determined	Mechanism of Vaccination for 25-49% of Tier 1, 2, & 3 CW determined	Mechanism of Vaccination for 50-74% of Tier 1, 2, & 3 CW determined	Mechanism of Vaccination for 75-100% of Tier 1, 2, & 3 CW determined				

Note: Mechanism of Vaccination includes where/how each group will be vaccinated (e.g., closed PODs vs. others).

Note: Program should note which CW categories do not have determined mechanism for vaccination during response.

Planning Implementation				Operational Implementation			
Early	Intermediate	Established	Advanced	Early	Intermediate	Established	Advanced
Rapid communication plan in place for Tier 1, 2, & 3 occupation groups				Plans to rapidly communicate with Tier 1, 2, & 3 occupation groups has been tested in the last year			
0-24% Have a Rapid Communication Plan for Tier 1, 2, & 3 CW groups	25-49% Have a Rapid Communication Plan for Tier 1, 2, & 3 CW groups	50-74% Have a Rapid Communication Plan for Tier 1, 2, & 3 CW groups	75-100% Have a Rapid Communication Plan for Tier 1, 2, & 3 target groups	No rapid communication drill conducted or 0-24% of persons in Tier 1, 2, & 3 CW groups contacted	25-49% of Tier 1, 2, & 3 CW groups contacted by a rapid communication drill	50-74% of Tier 1, 2, & 3 CW groups contacted by a rapid communication drill	75-100% of Tier 1, 2, & 3 CW groups contacted by a rapid communication drill

Note: Program should note which CW categories do not have rapid communication plan.

Plan for submission of vaccination administration data to IIS developed for each CIP category in Tier 1, 2, & 3 within 7 days of administration				Plans submitted for CIP to IIS have been tested in a seasonal influenza or functional exercise in the last x years			
0-24% of Tier 1, 2, & 3 CW groups have plan for how vaccine administration data will be submitted within 7 days of administration	25-49% of Tier 1, 2, & 3 CW groups have plan for how vaccine administration data will be submitted within 7 days of administration	50-74% of Tier 1, 2, & 3 CW groups have plan for how vaccine administration data will be submitted within 7 days of administration	75-100% of Tier 1, 2, & 3 CW groups have plan for how vaccine administration data will be submitted within 7 days of administration	0-24% of Tier 1, 2, & 3 CW groups had data submitted to the IIS, or no seasonal/functional exercise conducted	25-49% of Tier 1, 2, & 3 CW groups had data submitted to the IIS	50-74% of Tier 1, 2, & 3 CW groups had data submitted to the IIS	75-100% of Tier 1, 2, & 3 CW groups had data submitted to the IIS

Plan for second dose reminder for CW vaccinated				Second dose reminder plans have been tested in the last 5 years			
No Plans in Place	Plans Started	Draft Plans	Plans completed	Not tested	Tabletop exercise conducted	Functional exercise conducted	Full-scale exercise conducted or real incident

Note: Program should describe plan and technologies used (e.g., reminder within IIS, stand-alone text reminder).

Planning Implementation				Operational Implementation			
Early	Intermediate	Established	Advanced	Early	Intermediate	Established	Advanced
POCs of PODs intended for vaccination to Tier 1, 2, & 3 CW groups have been briefed on <i>Checklist for Best Practices for Vaccination Clinics held at Satellite, Temporary, or Off-Site Locations</i> <a href="http://www.izsummitpartners.org/naiis-workgroups/influenza-workgroup/off-site-clinic-resources/">www.izsummitpartners.org/naiis-workgroups/influenza-workgroup/off-site-clinic-resources/</a>				Checklist for Best Practices for Vaccination Clinics held at Satellite, Temporary, or Off-Site Locations <i>Checklist for Best Practices for Vaccination Clinics held at Satellite, Temporary, or Off-Site Locations</i> has been used for seasonal influenza or other vaccination in Closed PODs intended for Tier 1, 2, & 3 CW groups			
No POD POCs or 0-24% of POD POCs briefed on checklist	25-49% of POD POCs briefed on checklist	50-74% of POD POCs briefed on checklist	75-100% of POD POCs briefed on checklist	No PODs exist or exist in not Closed PODs	25-49% of Closed PODs used the Checklist	50-74% of Closed PODs used the Checklist	75-100% Closed PODs used the Checklist

EXAMPLE

Early in a pandemic, vaccine may be in extremely short supply such that there is not enough available to vaccinate all members of Tier 1 critical workforce groups. The planning team should be challenged to decide how vaccine will be allocated within Tier 1 critical workforce groups and justify their reasoning. The table below can be used to work through several scenarios where there is only enough vaccine to cover a subset of the jurisdiction’s Tier 1 critical workforce population.

How might your jurisdiction sub-prioritize groups with limited vaccine supply?

**Instructions:** List the total number of doses available for allocation based on the proportion of Tier 1 population that will be vaccinated in each scenario. Then determine how your jurisdiction would allocate doses of vaccine to each target group given the total number of doses available.

**100% Tier 1 doses can be carried over from jurisdiction’s Tier 1 estimates from Appendix B.**

Proportion of Jurisdiction’s Tier 1 Population to be Vaccinated (%)	100%	50%	25%	10%
Vaccine Doses Available (#)				

### Homeland and National Security

Target Group	Scenario 1: Vaccine is available for 100% of Tier 1 CW positions (# of doses allocated)	Scenario 2: Vaccine is available for 50% of Tier 1 CW positions (# of doses allocated)	Scenario 3: Vaccine is available for 25% of Tier 1 CW positions (# of doses allocated)	Scenario 4: Vaccine is available for 10% of Tier 1 CW positions (# of doses allocated)
Deployed & Mission-Critical Personnel				

### Health Care and Community Support Services

Target Group	Scenario 1: Vaccine is available for 100% of Tier 1 CW positions (# of doses allocated)	Scenario 2: Vaccine is available for 50% of Tier 1 CW positions (# of doses allocated)	Scenario 3: Vaccine is available for 25% of Tier 1 CW positions (# of doses allocated)	Scenario 4: Vaccine is available for 10% of Tier 1 CW positions (# of doses allocated)
Public Health Personnel				
Inpatient Health Care Providers				
Outpatient & Home Health Providers				
Health Care Providers in Long-Term Care Facilities				
Pharmacists & Pharmacy Technicians				

### Other Critical Infrastructure

Target Group	Scenario 1: Vaccine is available for 100% of Tier 1 CW positions (# of doses allocated)	Scenario 2: Vaccine is available for 50% of Tier 1 CW positions (# of doses allocated)	Scenario 3: Vaccine is available for 25% of Tier 1 CW positions (# of doses allocated)	Scenario 4: Vaccine is available for 10% of Tier 1 CW positions (# of doses allocated)
Emergency Services & Public Safety Sector Personnel (EMS, Law Enforcement, & Fire Services)				
Manufacturers of Pandemic Vaccine & Antivirals				

AAR	An After-Action Report includes an overview of performance related to each exercise objective and associated core capabilities, while highlighting strengths and areas for improvement.
ACP	Association of Continuity Professionals
CDC	Centers for Disease Control and Prevention
Critical Workforce	Refers to anyone whose occupation, skills, or license makes them essential to preserving the critical functions of a society or a given jurisdiction.
DoD	Department of Defense
Drill	A Drill is a coordinated, supervised activity that is usually employed to test a single, specific operation or function in a single agency.
DVC	Dispensing and vaccination clinics
EHR	Electronic health records
EUA	Emergency Use Authorization
FE	A Functional exercise (FE) is designed to test and evaluate individual capabilities, multiple functions, or activities within a function, or interdependent groups of functions. An FE is conducted in a realistic, real-time environment. However, movement of personnel and equipment is usually simulated.
FEMA	Federal Emergency Management Agency
FSE	A Full-Scale exercise (FSE) is a multiagency, multijurisdictional exercise that tests many facets of emergency response and recovery. An FSE focuses on implementing and analyzing the plans, policies, and procedures developed in discussion-based exercises and honed in previous, smaller, operations-based exercises. Personnel and resources are usually mobilized.
HHS	Health and Human Services
HSEEP	The Homeland Security Exercise and Evaluation Program (HSEEP) provides a set of guiding principles for exercise programs, as well as a common approach to exercise program management, design and development, conduct, evaluation, and improvement planning.
IIS	Immunization Information System
Influenza Pandemic	A global outbreak of a new influenza A virus. Pandemics happen when new (novel) influenza A viruses emerge that are able to infect people easily and spread from person to person in an efficient and sustained way.
MCM	Medical Countermeasures
NACCHO	National Association of County and City Health Officials
Novel Virus	Novel virus refers to a virus not seen before. It can be a virus that is isolated from its reservoir or isolated as the result of spread to an animal or human host where the virus had not been identified before. It can be an emergency virus, one that represents a new strain, but it can also be an existent virus not previously identified.
POC	Point of Contact
POD	Point of Dispensing
Pro Rata	A term used to describe a proportionate allocation. It is a method of assigning an amount to a fraction according to its share of the whole.
SMS	Short Message Service (SMS) is a text messaging service component of phone, web, or mobile communication systems. It uses standardized communication protocols to allow fixed line or mobile phone devices to exchange short text messages.
Tier	Target groups are used to determine a vaccination strategy that are designated in tiers. Tiers range from 1 to 5, where tier 1 includes the highest priority groups.
TTX	A Table Top Exercise (TTX) is intended to generate discussion of various issues regarding a hypothetical, simulated emergency.
USG	United States Government
VFC	Vaccines for Children
VIS	Vaccine information statements (VISs) are information sheets produced by CDC that explain both the benefits and risks of a vaccine to vaccine recipients.  Federal law requires that health care staff provide a VIS to a patient, parent, or legal representative before each dose of certain vaccines. VISs may be found at <a href="http://www.cdc.gov/vaccines/hcp/vis/index.html">www.cdc.gov/vaccines/hcp/vis/index.html</a> .