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Abbreviations:
CDC, Centers for Disease Control and Prevention; FEMA, Federal Emergency Management Agency; ICP, infection control and prevention; ICS, Incident Command System; WHO, World Health Organization

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Mass Immunizations: A Pocket Guide

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Abstract

Numerous state, national, and global resources exist for planning and executing mass vaccination campaigns. However, they are disparate and can be complex. The COVID-19 pandemic highlighted the need for clear, easy to use mass vaccination resources. Meanwhile, annual influenza vaccination, as well as outbreaks such as mpox, demonstrates the need for continued emphasis on timely and effective vaccinations to mitigate outbreaks. This pocket guide seeks to combine relevant resources and basic steps for setting up a mass vaccination clinic, utilizing experience from COVID-19 mass vaccination sites.

The COVID-19 pandemic demonstrated the need for quick, effective, and safe mass vaccination sites across the globe. Meanwhile, annual influenza vaccination, as well as outbreaks such as monkeypox, demonstrates the need for continued emphasis on timely and effective vaccinations to mitigate outbreaks. This pocket guide combines relevant resources and basic steps for setting up a mass vaccination clinic, utilizing experience from COVID-19 mass vaccination sites. This is not a replacement for local or institutional policies.

Setting Up a Mass Vaccination Site

Staff

Clinical and non-clinical staff numbers and ratios of clinical to non-clinical staff will be context-specific (eg, site, population, specific vaccine).[1–3] The United States Federal Emergency Management Agency (FEMA) recommends a minimum of 27 clinical staff per 1000 people for a COVID-19 mass vaccination site.[4] In contrast, a rural California clinic successfully vaccinated approximately 1000 people with 14 clinical staff; therefore, the skill of staff, access to resources, and clinic efficiency influence a site.

Considerations

Staffing requirements may be higher for some vaccine clinics due to vaccine storage, handling, preparation, and maintenance of Infection Control and Prevention (ICP) measures at the site.[1–3]

Utilize non-clinical staff for registration, screening, logistics, crowd control, runners, and documentation.[3] The Incident Command System (ICS) is a useful staffing structure for administrative positions.[5] Consider applicable skill partnerships, that is, the military for logistics, technology companies for electronics and Internet connections at the site, and so forth.

For clinical staff shortages, utilize staff with expanded scope of practice, if approved under emergency authorization. For example, in parts of the United States, medical/nursing students, emergency medical technicians, pharmacists, medical assistants, and paramedics administered COVID-19 vaccines.[6]

Training

Blended methodology options for in-person and online training are recommended by the World Health Organization (WHO), while the United States Centers for Disease Control and Prevention (CDC) recommends cross training to permit flexibility.[1,7–9]

Considerations

Despite pre-clinic training and run-through recommendations, many staff arrive on site with little or no training, especially for data entry systems. Have training and key reference materials available on site, and when necessary, conduct just-in-time training.[10]

Direct observation and skills checklists can be utilized on site to ensure competency.[1,8,11]

Daily morning briefings on staffing, operations, vaccine brand, and equipment are imperative.

Supplies

Supplies are dependent on resources and vaccine availability. When possible, keep clinic supplies consistent. Multiple tools for planning and safety are available online and contain a list of potential supplies.[12–14]

Considerations

Cold chain and preparation techniques can be specific for type and brand of vaccine; refer to manufacturer guidelines.[15] Since vaccines are a limited resource, maintaining cold chain and limiting waste are priorities.

Have a plan if the cold chain fails, including logistics for obtaining a backup supply of vaccine and maintaining cold chain during a power outage, or when power is not available.

Keep all packaging used to ship the vaccines, as it may be useful for transport and storage.

Have protocols for the site that include emergency evacuation route, bloodborne pathogen exposure (needlestick), ICP, and vaccine reaction.

Site Selection and Setup

Gymnasiums, schools, stadiums, and event spaces are suitable walk-through sites, particularly if they are outdoors or have large indoor/outdoor spaces.[4] Successful drive-through sites include large parking areas.[4] Examples of ambulatory and drive-through sites include these minimal stations: vaccine preparation, patient registration/screening, vaccine administration, ovservation and reaction treatment areas.[4,16]

Considerations

Community partners can assist in providing sites and logistics; successful partnerships have included sports stadiums and entertainment venues where staff are knowledgeable in managing large-scale crowds and supporting electrical/water/sanitation needs.

Basic ICP measures, including universal masking, are essential.[2] When using an indoor location, ensure adequate ventilation. Use social distancing and 1-way traffic flow.[4]

Community-based organizations, local health departments, and local medical systems/clinics are potential trusted partners that are often able to recruit clients most effectively.[17] Local partners may understand a community's challenges to vaccine equity and may be able to provide interpreters at sites.[18]

Day of Vaccination Clinic Activities

Vaccine Supply, Handling and Preparation

If administering multiple brands or types of vaccine, dedicate separate preparation and administration areas for each brand/type to prevent errors.[19] For safety and efficiency, have experienced staff prepare the vaccines.[3]

Considerations

The number of doses drawn from multi-use vials is dependent on the needle and syringe type. If possible, accurately calculate the number of doses on hand by using the same type of supplies each day. When not possible, use the lowest number of potential doses in a vial to calculate the number of daily doses available.

For efficiency, prepare vaccine in batches after calculating the estimated number of doses for administration and the time doses can be out at room temperature. Utilize runners between preparation and administration areas to communicate the number of pending vaccinations and doses still out.

Maintain vaccines in cold chain and remove only when necessary. Monitor time or set alarms on phones/watches to check cold chain or return vials to cold chain within manufacturer's recommendations.

Clinic Flow

Maintain clinic flow and keep the line moving by using a "leap frog" technique (see below) to administer vaccinations rather than batching clients. Allow clients to track their own observation time.

Considerations

Leapfrog technique (walk-in site): vaccinators signal to the next client by holding up their hand or a paper, clients do not wait for a specific vaccinator. Leapfrog technique (drive-through): vaccinators move to the next car in line and do not wait for a group of cars or a car to come to a specific spot.

Only document needed information once. If you are using online documentation, have a backup paper method ready for rapid implementation for when there are Internet connectivity issues.

Use registration and observation wait time to answer questions and to provide information about vaccine side effect management, vaccine effectiveness, and personal protection.

If possible, have Emergency Medical Services (EMS) on standby to transport clients with adverse reactions or other medical complaints needing a higher level of care.

Post-Vaccination Clinic Activities—Cleanup and Debriefs

Clean the site according to ICP protocol. Unused vaccine kept outside of recommended temperatures and time frames cannot be administered; dispose of these per local regulations.[15] Debriefs are useful tools for critical incidents, clinic quality improvement, and any safety concerns.[20,21] Also, discuss the plan for the next clinic day, including brand of vaccine, type of supplies, and staffing. Simplicity and consistency are key for maximizing the safety and efficiency of the site.

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