Establishing a COVID-19 vaccination site

A set of key considerations for determining the optimal type of COVID-19 vaccination clinic to launch
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Vaccination site selection playbook: Document overview

Purpose
This document outlines the key considerations for organizations and stakeholders in the public and private sectors hoping to set up small- and large-scale vaccination clinics to serve the public. It was developed through discussions and engagements with state and federal organizations currently considering the best approach for launching vaccination sites.

Contents
It includes the following material:

**Key stakeholders:** An overview of all the types of actors involved in the vaccination ecosystem that should be considered when launching a vaccination site.

**Site archetypes:** A summary of different types of vaccination sites, the criteria for deciding which site is optimal, and essential information for engaging the population and planning out site logistics.

**Vaccinator journey and key challenges:** A view of the steps that vaccinators and patients must take in launching and operating a vaccination site, as well as the known challenges that might exist in planning and operating a vaccination site of any type.

**Patient journey and population engagement:** A view of the patient vaccination journey regardless of site archetype and key considerations for engaging different parts of the population based on vaccine confidence.
Vaccinator value chain and key stakeholders

Enabling a vaccination site will require coordination between public and private sector stakeholders and an understanding of key elements across the vaccination value chain.

**Monitoring and adverse event reporting**
Follow up with vaccinated patients and record and report any adverse events stemming from vaccination.

**Cohort and individual management**
Identify eligible cohorts for vaccination and work with the individual to schedule and confirm appointment.

**Revenue cycle and billing**
Work with public and private stakeholders to cover vaccine expenses with no cost to the patient.

**Procurement**
Coordinate with public sector stakeholders to send vaccine order based on supply and current inventory levels.

**Vaccine administration**
Manage patient intake process and deliver vaccine and key information to patient.

**Logistics and distribution**
Prepare for vaccine shipment and track order from the manufacturer to the administration site.

**Site management**
Set up vaccination site to enable an efficient and effective vaccination process and patient experience.

**Value chain enablers**

<table>
<thead>
<tr>
<th>General and administrative services</th>
<th>Technology and informatics</th>
</tr>
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<tbody>
<tr>
<td>Talent and HR; Finance; Legal; Compliance; and Regulatory; Marketing and PR; Facility Maintenance</td>
<td>Standing up and maintaining site systems; access and interface with state and federal immunization systems</td>
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</tbody>
</table>
Distribution site archetypes

There are at least seven distribution site archetypes that prospective vaccinators can consider

**Mass vaccination site**
These can be based at race courses, sports stadiums, convention centers, or other large buildings. Ideally, they should provide easy access, parking, sufficient toilets, and other facilities to be able to cater for large crowd gatherings. They may already have freezer and storage capacity in place for crowd catering, but may require additional ultra-cold storage capabilities, depending on vaccine type.

**Pop-up clinic**
They can be both short- and long-term structures that are put in place at critical geographical locations, based on demand. Similar to PCR testing stations, they are mobilized when and where needed based on available space. Some jurisdictions deliberately colocate these with temporary testing sites—although, of course, it is important to keep participant flows segregated.

**Hospital site**
These sites benefit from all of the clinical and equipment infrastructure already in place or nearby and at hand. Cryogenic capabilities are typically higher, as is the ability to provide broader clinical interventions. Crowd and movement controls are put in place, depending on physical access and building locations, to ensure that normal patient flow is not interrupted.

**Community clinic**
These may be suburban or urban and use existing provider facilities where at least some medical equipment and cold storage capabilities are in place. These clinics can help extend the reach of the vaccination program, but are unlikely to have ultra-cold storage capabilities.

**Primary care**
These delivery models are typically based on general practice (GP), pharmacy, or other retail provider–based delivery locations and sites. Again, basic medical equipment and cold storage capabilities would need to be in place, and such sites are unlikely to have ultra-cold storage capabilities.

**Mobile unit**
Several jurisdictions are also mobilizing vans and other mobile units to bring the vaccine to the participants or relevant neighborhoods. Where such capability is already in place from other vaccination programs, it can potentially be leveraged to also deliver COVID-19 vaccines—subject to cold storage capabilities.

**Group-based**
Where a vaccine needs to be delivered to a clearly defined group, this can be done in partnership with the private sector, similar to how flu vaccines, for example, are delivered by employers. It requires setting up at the respective place of work or congregation setting (subject to cold storage requirements and logistics). A vaccine can then be delivered to border workers at airports and ports, to students at a school, staff at their office, etc.
### Key decision-making criteria for distribution archetypes

In determining which type of vaccination site to create, the key inputs are population eligibility, urgency of vaccination need, and the size of the population that needs to be served.

<table>
<thead>
<tr>
<th>Archetype</th>
<th>Key decision criteria</th>
<th>Engaging citizens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eligibility</td>
<td>Urgency</td>
</tr>
<tr>
<td>Mass vaccination site</td>
<td>By appointment only based on prioritized invitations</td>
<td>Low urgency for vaccination</td>
</tr>
<tr>
<td>(e.g., race course, stadium, concourse)</td>
<td></td>
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<tr>
<td>Pop-up clinic</td>
<td>By appointment only based on prioritized invitations OR open if responding to outbreak</td>
<td>High or low urgency for vaccination</td>
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<tr>
<td>(e.g., parking lot, camping ground, etc.)</td>
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<tr>
<td>Hospital site</td>
<td>By appointment only based on prioritized invitations</td>
<td>High urgency for vaccination</td>
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<tr>
<td>(e.g., main block, outpatient clinic)</td>
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</tr>
<tr>
<td>Community clinic</td>
<td>By appointment only based on prioritized invitation OR open if responding to outbreak</td>
<td>High urgency for vaccination</td>
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<tr>
<td>(e.g., public health agency clinic)</td>
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<tr>
<td>Primary care</td>
<td>Open</td>
<td>Low urgency for vaccination</td>
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<tr>
<td>(e.g., GP clinic, retail pharmacy)</td>
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<tr>
<td>Mobile unit</td>
<td>Open</td>
<td>High urgency for vaccination</td>
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<tr>
<td>(e.g., screening trucks, dental nurse campers, etc.)</td>
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</tr>
<tr>
<td>Group-based</td>
<td>Restricted based on group membership</td>
<td>High urgency for vaccination</td>
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<tr>
<td>(e.g., corporate, employer, church, school, residential care)</td>
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</tbody>
</table>
# Operations considerations for distribution archetypes

Logistics, storage, operating model, and other related questions must also be considered when selecting a distribution archetype.

<table>
<thead>
<tr>
<th>Archetype</th>
<th>Logistics and operations considerations</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Setting</td>
</tr>
<tr>
<td><strong>Mass vaccination site</strong> (e.g., race course, stadium, concourse)</td>
<td>Repurposed building</td>
</tr>
<tr>
<td><strong>Pop-up clinic</strong> (e.g., parking lot, camping ground, etc.)</td>
<td>Tent/temporary structure</td>
</tr>
<tr>
<td><strong>Hospital site</strong> (e.g., main block, outpatient clinic)</td>
<td>Provider site and building</td>
</tr>
<tr>
<td><strong>Community clinic</strong> (e.g., public health agency clinic)</td>
<td>Provider site and building</td>
</tr>
<tr>
<td><strong>Primary care</strong> (e.g., GP clinic, retail pharmacy)</td>
<td>Practice site or shop</td>
</tr>
<tr>
<td><strong>Mobile unit</strong> (e.g., screening trucks, dental nurse campers, etc.)</td>
<td>Vehicle or trailer</td>
</tr>
<tr>
<td><strong>Group-based</strong> (e.g., corporate, employer, church, school, residential care)</td>
<td>Place of congregation</td>
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</tbody>
</table>
Vaccinator journey

Prospective vaccinators will have similar journeys regardless of the distribution archetype they choose

1. Cohort and individual management
   - Engage with employers, govt. agencies
   - Assign individual to vaccination cohort
   - Align cohort with public health allocation plan
   - Determine cohort eligibility (i.e., sequencing)
   - Notify individual of vaccination eligibility
   - Map patient to vaccination site
   - Send medical questionnaire and consent form to patient
   - Confirm vaccination appt. and patient consent

2. Procurement
   - Determine site storage capacity and current vaccine inventory (by vaccine brand or type)
   - Calculate order amount based on vaccine demand
   - Determine and calculate ancillary supplies required (5% overage suggested)
   - Place vaccine order by vaccine brand or type and ancillary supply order
   - Approve site (administering provider) vaccine order
   - Send vaccine order approval and shipping info to site or provider

3. Logistics and distribution
   - Forecast vaccine and supplies demand on ongoing basis
   - Coordinate logistics and warehouse operations
   - Track order from manufacturer to warehouse
   - Confirm order receipt and validate cold-chain integrity
   - Manage and track daily distribution to administering sites

4. Site management
   - Identify, contract, and certify administering site
   - Determine site governance and oversight
   - Determine staffing reqs based on site capacity, projected vaccine allocations, and planned number of vaccines administered per day
   - Develop emergency response plan (EMS and hospital relationships)
   - Devise site security and personnel safety plan
   - Maintain site (daily sanitizing, daily setup)
   - Manage on-site supply and inventory
   - Process inbound vaccine shipments

5. Vaccine administration
   - Manage patient intake and initial health screening
   - Thaw doses according to specified instructions
   - Scan and validate vaccine dose for patient appt.
   - Verify patient consent and administer vaccine
   - Monitor patient for adverse or allergic reaction
   - Log administration data and capture adverse events
   - Deliver vaccine certification to patient
   - Schedule second dose appt. (if applicable)

6. Revenue cycle and billing
   - Determine health insurance status and info
   - Submit claims and manage collection process
   - Invoice separate administration fee (if applicable)
   - File with govt. agencies for reimbursement of uncompensated care

7. Monitoring and adverse event reporting
   - Send reminder to patient for second appt. (if required)
   - Report total vaccines administered by first and second dose
   - Report adverse events daily and in summary (to manufacturer, to regulator)
   - Track any long-term adverse events in coordination with PCPs
   - Track and report number of no-shows; create stand-by policy; adjust following day as applicable
**Potential site planning challenges**

From previous immunization efforts and lessons learned from testing, there are key challenges that vaccinators will have to strategize around and mitigate in order to build public confidence and avoid disruption at the vaccination site.

### Vaccination risk areas – Site planning

<table>
<thead>
<tr>
<th>Technology infrastructure stand-up</th>
<th>Inventory visibility</th>
<th>Storage capacity and cold chain considerations</th>
<th>Site staffing and training</th>
<th>Promotion and community outreach</th>
<th>Site footprint management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depending on the site archetypes and stakeholders, additional tools and systems might have to be procured or developed to meet data reporting requirements and enable the site to run efficiently.</td>
<td>It is important for sites to have advanced knowledge about its jurisdiction's allocation process and data flow, as that will drive the site's vaccine allocation. The ability to effectively track and forecast inventory will enable a site to maximize its daily throughput.</td>
<td>Variable cold chain requirements across manufacturers leads to increased complexity for vaccination sites to track and manage the unique storage, handling, and administration requirements of the different vaccines. Inadequate preparation could lead to administration errors or wastage.</td>
<td>The appropriate mix of clinical support, volunteers, and other staff will be needed at scale based on the size of the vaccination site to enable an efficient vaccination process and maximizing throughput. Additionally, the speed at which this process is moving and the relative lack of expertise means that comprehensive training is recommended.</td>
<td>Vaccination sites should prioritize key community leaders and communication channels for outreach programs. Communications is expected to become increasingly important as a tool to battle vaccine hesitancy once supply increases and outstrips vaccine demand.</td>
<td>Site operators should optimize available space to maintain adequate social distancing and enable patient accessibility while maximizing patient throughput while maintaining adequate social distancing measures for staff. These considerations will hold true for both drive-through and walk-up clinics and will need to be set up in a way to decrease the risk of bottlenecks and impact on surrounding businesses.</td>
</tr>
</tbody>
</table>
Potential site operations challenges

From previous immunization efforts and lessons learned from testing, there are key challenges that vaccinators will have to strategize around and mitigate in order to build public confidence and avoid disruption at the vaccination site.

**Vaccination risk areas – Site operations**

<table>
<thead>
<tr>
<th>Planning for no-shows and overflow</th>
<th>Technology failure or system breach</th>
<th>Adverse event management and investigation</th>
<th>Queue management and crowd control</th>
<th>Personnel management and constraints</th>
<th>Supply issues and shortages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given delicate cold chain requirements and high demand for the vaccines, it will be <strong>important for vaccination sites to plan for no-shows</strong>, as well as for those individuals who show up without an appointment or with additional individuals (such as their children) who want to be vaccinated.</td>
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<tr>
<td>The speed at which organizations are setting up vaccination sites, as well as the possibility of needing to procure additional tools, could lead to a <strong>system failure or security breach</strong> during the vaccination process, and organizations will need to have backup plans in place to continue operating according to CDC requirements.</td>
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<tr>
<td>Vaccination sites should plan to have access to proper emergency management personnel and equipment in order to quickly and effectively care for individuals with adverse events and ensure it was not an administrative error.</td>
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<tr>
<td>In order to <strong>avoid potentially long lines and wait times</strong> for patients, sites should be flexible and agile in setting up their process flows to prevent bottlenecks.</td>
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<tr>
<td>Varying levels of skills could be necessary to adequately staff each site depending on the scale. Constraints brought about by <strong>COVID-19 surges or other reasons could harm site effectiveness</strong> and lead to additional vaccination issues.</td>
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<tr>
<td>The <strong>complexity of the COVID-19 supply chain and last-mile challenges</strong> currently taking place in certain jurisdictions could create delays or shortages in the vaccine, PPE, or other supplies critical for a vaccination site to function.</td>
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Patient vaccination journey

Vaccinators must account for each step of the patient journey as they launch their clinics.
Engaging across population groups with different levels of vaccine confidence

When engaging with prospective vaccination patients, it is critical to be aware that willingness and ability can affect participation in the vaccination program.

 Execute media and communications to manage impact of citizen resistance-based personal decisions about whether and how to engage with vaccination.

 Create targeted and tailored media and communications (e.g., use of celebrities, influencers, science communications, existing community networks, confidence in the vaccination) to influence engagement.

 Directly remove or mitigate barriers through operating model (e.g., community locations, employers mandated to allow time off, travel vouchers).

 Offer streamlined patient experience that enables high level of self-service and autonomy, supported by “nudge” and technology enablers to maximize attendance and minimize tailored engagement needed.

 Communications through tailored channels to provide clarity on eligibility and course of action.

The end-to-end “patient” journey starts long before the scheduling process and continues beyond the administration of the vaccine.

Engagement is driven by a range of experiences, behaviors, motivations, and characteristics. These can be meaningfully clustered around “willingness” and “ability” to engage. An individual or cohort may be associated with multiple factors.

In the middle of the triangle, understanding the drivers of hesitancy or challenge to engagement is critical to tailoring the delivery model and communications to target populations. This will be critical to addressing equity of access and outcomes.
Approach to engaging across different levels of vaccine confidence

Each group can be engaged with different vaccination site archetypes

<table>
<thead>
<tr>
<th>Distribution site archetypes and levels of empowerment</th>
<th>Critical enablers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistant (e.g., distrustful of efficacy or safety)</td>
<td>Monitoring, analysis, and reporting of access and outcomes for key populations.</td>
</tr>
<tr>
<td>Hesitant (e.g., undervalues vaccine)</td>
<td>Sensing and analysis to track hesitancy sentiment and impact</td>
</tr>
<tr>
<td>Challenged (socioeconomic, physical, and health barriers)</td>
<td>Capture, analysis, and action of the patient experience throughout</td>
</tr>
<tr>
<td>Willing and able (motivated citizens with means to participate)</td>
<td>Behavioral “nudges” increasing uptake and first-time commitment through behavioral interventions</td>
</tr>
</tbody>
</table>

- Strategy and process to countering mis-, dis-, and malinformation throughout the rollout to engage and influence resistant citizens and manage the impact on the wider population
- Tailored and targeted communication plans
- Including science-based communications, nonpolitical and community channels, and use of influencers
- Community-based delivery models (e.g., mobile clinic, community clinic)
- Investment in delivery (from awareness through to follow-up) via community and local partners
- Greater degree of participant empowerment (and choice of how to engage)
- Equity support (and capability): funding, services, and policy to mitigate barriers for individuals and the capability to process and monitor additional support
- Flexibility in timing, location, facility, and vaccine to mitigate the barriers to vaccination at a cohort and individual level
- Mass vaccination delivery models supported by digital and technology-enabled self-services to vaccinate at high numbers and create capacity within the wider system
- Reduce complexity and cost through a defined and constrained choice architecture that meets the needs of the majority
In developing this playbook, we built our knowledge base through discussions with teams on the ground at vaccination sites, as well as third-party research from the following sources:


**University of Minnesota Center for Infectious Disease Research and Policy (CIDRAP),** “Mobile vaccination clinic reaches rural areas,” [https://www.cidrap.umn.edu/practice/mobile-vaccination-clinic-reaches-rural-areas](https://www.cidrap.umn.edu/practice/mobile-vaccination-clinic-reaches-rural-areas).

**Darin E. Reid,** *What are the Efficiencies of a Mass Vaccination Drive-Through Clinic compared to a Walk-In Clinic?* Stanwood Camano (Camano Island, WA) Fire Department, 2010, [https://www.hsdl.org/?view&did=804516](https://www.hsdl.org/?view&did=804516).

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