

COVID-19 Vaccine Distribution Security Concerns in the Last Mile



Last Mile Overview

The Cybersecurity and Infrastructure Security Agency (CISA) encourages organizations involved in the final stages of the vaccination distribution process to carefully consider the vulnerabilities and associated mitigation measures identified in this document. CISA is focused on the security and resilience of the vaccine supply chain in the Last Mile that connects manufacturing with temporary storage sites, local delivery mechanisms, and points of dispensing of the vaccine. This document provides general guidance and recognizes that important differences in the Last Mile will exist across jurisdictions.

DISTRIBUTION STAGES



Temporary Storage Sites:

Vaccines and related supplies are first delivered to temporary storage and handling locations where they are redistributed to local vaccination sites. These can include centralized inventory hubs for healthcare systems, logistics depots, or hospitals/pharmacies. These sites require appropriate storage and temperature management.

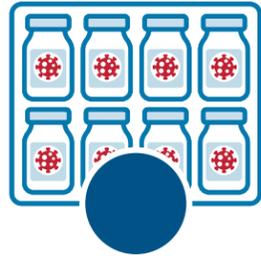
Local Delivery:

Transportation of vaccine and related supplies range from large national logistics companies to local logistics providers. Once the vaccine has been delivered locally, it may be reshipped to another location for use.

Points of Dispensing (POD):

Vaccinations are provided in a diverse array of settings ranging from large stadiums to small rural clinics. PODs can operate in areas such as a community center, and Mega-PODs can service large-scale dispensing by using stadium and convention-center-type parking lots in drive-through configurations.

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Unique Concerns by Sector

While the Last Mile can apply to all sectors, the most common are in Healthcare, Government, and Commercial Facilities. Vaccinations were initially provided at large hospitals and long-term care sites but are increasingly provided in a diverse array of settings. For example, they range from large stadiums to small rural clinics. These different facility types create a corresponding diversity in the vulnerabilities, consequences, threats, and the types of potential protective measures needed to mitigate risks in the Last Mile.



Healthcare:

Many of these sites critical to the Last Mile are publicly accessible by design, with little or no ability to physically limit entry or screen those seeking access. The diversity in physical security measures and facility types also complicates efforts to assess and mitigate risk. The infrastructure also varies from community to community especially in rural or urban environments. (e.g., hospitals or clinics)



Government:

Government facilities are often points of dispensing or storage in the Last Mile. They represent attractive and strategically important targets for both terrorist groups as well as criminals. These assets are often targeted because they provide a wide array of vaccination services, conduct registration and track vaccine administration and these facilities contain and store large amounts of vaccinations and medical supplies. Their prominence in serving the Last Mile for vaccinations only increases this level of visibility. (e.g., National Guard centers, federal or state buildings)



Commercial Facilities:

Vaccinations can be provided in a wide variety of facilities and sites that are diverse in size, function, operating principles, and security risks. Nearly all commercial facilities are privately owned and operated with minimal regulations. As a result, vaccination dispensing in the Last Mile is more incumbent upon the individual owners and operators who take responsibility for assessing facility risks and implementing risk management and mitigation actions. (e.g., retail outlet stores or sporting venues)

The next pages provide those considerations for enhancing security and resilience across these three sectors and Last Mile nodes.

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Temporary Storage Sites Vulnerability and Protective Measures

- Health
- Commercial
- Government

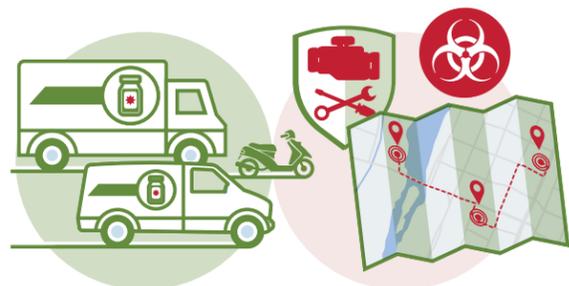
Potential Vulnerabilities

- Limited vehicle control, transporter delivery areas, unloading and unpatrolled parking areas; parking policies not enforced
- Confirmation of ID for vaccine supply delivery drivers not enforced
- Driver insider threat concern with vaccine transport and delivery
- Delivery transporter vehicles not screened prior to loading
- Staged transporter cargoes, waiting for departure, susceptible to tampering, especially vaccines and other critical process medical supplies
- Vaccine supply delivery transporters are not separated from routine delivery trucks. Vaccines and non deliveries unloaded and processed in the same area, creating potential for theft, sabotage or other issue
- Vaccines susceptible to temperature fluctuations and spoilage
- Open access to vaccine storage areas
- Communication plan not in place in case of accident, theft, transporter hijacking or other emergencies
- No backup storage plan for vaccine in place if sustained power outage occurs or other emergency
- Suspicious activity in or around of storage site not reported to authorities
- Limited or minimal POD emergency response and security forces in place

Protective Measures to Consider

- Monitor transporter loading, unloading and parking areas; enforce parking policies
- Enforce and verify ID for vaccination delivery transporters accessing storage sites or at Points of Distribution (POD)
- Ensure driver background checks are conducted and verified
- Inspect transporter vehicles with use of under carriage mirrors, K9's (if available) prior to entering and loading vaccines and medical supplies.
- Monitor staged cargo awaiting departure to deter tampering of vehicle
- Establish vaccination supply transporter vehicle marshaling area to restrict all other vehicles from area and loading docks. Immediately unload and move vaccinations and medical supplies to restricted controlled areas and receive non vaccine deliveries in another area separate from vaccine unloading/storage areas
- Ensure personnel check temperature control devices for functionality after loading, prior to delivery and every 4 hours
- Ensure authorized personnel access to vaccine storage areas lists are reviewed, updated appropriately and enforced
- Develop, distribute and exercise notification protocols among transport vehicles, dispatchers, carriers, and shippers that outline who should be contacted in emergencies
- Develop plan for moving fragile medical supplies and vaccination materials to another storage site in case of sustained power outage or other emergency
- Encourage personnel and medical suppliers to report any suspicious activity
- Ensure adequate POD support staff for emergency response and security duties; normal ops and surge needs

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Local Delivery Vulnerability and Protective Measures

- Health
- Commercial
- Government

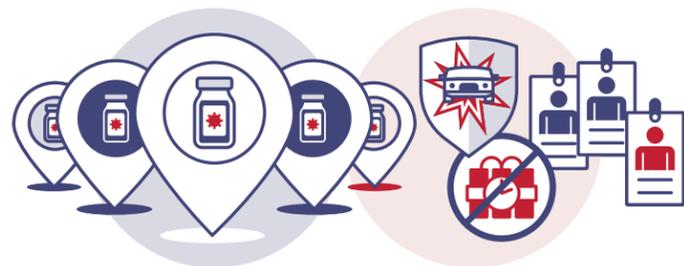
Potential Vulnerabilities

- Limited vehicle control, transporter loading, unloading and unpatrolled parking areas; parking policies not enforced
- Confirmation of ID for vaccine supply delivery drivers not enforced
- Driver insider threat concern with vaccine transport and delivery
- Delivery transporter vehicles not screened prior to loading
- Staged transporter cargoes, waiting for departure, susceptible to tampering, especially vaccines and other critical process medical supplies
- Vaccine supply delivery transporters are not separated from routine delivery trucks
- Local transporter vehicle is hijacked or held hostage by criminals
- Communication plan not in place in case of accident, theft, transporter hijacking or other emergencies
- Vaccines susceptible to temperature fluctuations and spoilage
- Suspicious activity in or around delivery sites and not reported to authorities
- Insider threat for theft of vaccines

Protective Measures to Consider

- Monitor transporter loading, unloading and parking areas; enforce parking policies
- Enforce and verify ID for vaccination delivery transporters accessing storage sites or POD's
- Ensure driver background checks are conducted and verified
- Inspect transporter vehicles with use of under carriage mirrors, K9's (if available) prior to entering and loading vaccines and medical supplies. Verify ID of driver and personnel conducting searches
- Monitor staged cargo awaiting departure to deter tampering of vehicle
- Establish vaccination supply transporter vehicle marshalling area to restrict all other vehicles from area and loading docks
- Ensure transporter GPS is activated; conduct active surveillance while vehicle is on the road
- Develop notification protocols among transport vehicles, dispatchers, carriers, and shippers that outline who should be contacted in emergencies
- Ensure personnel check temperature control devices for functionality after loading, prior to delivery and every 4 hours
- Encourage all personnel to report any suspicious activity
- Ensure vaccine inventory is checked on a regular basis and all security procedures are in place and enforced

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Points of Dispensing (POD) Vulnerability and Protective Measures

- Health
- Commercial
- Government

Potential Vulnerabilities

- Limited vehicle control, transporter delivery areas, unloading and unpatrolled parking areas; parking policies not enforced
- Confirmation of ID for vaccine supply delivery drivers not enforced
- Limited vehicle control and delivery transporter vehicles not screened prior to loading
- Staged transporter cargoes, waiting for departure, susceptible to tampering, especially vaccines and other critical process medical supplies
- Vaccine supply delivery transporters are not separated from routine delivery trucks
- Communication plan not in place in case of accident, theft, transporter hijacking or other emergencies
- Minimal or no emergency response preparations processes, or procedures in place for PODs
- Limited or minimal POD emergency response and security forces in place
- Open access to vaccine storage and dispensing areas without authorization
- Vaccines susceptible to temperature fluctuations and spoilage
- No backup storage plan for vaccine in place if sustained power outage occurs or other emergency
- Insider threat for theft of vaccine

Protective Measures to Consider

- Monitor transporter delivery areas, unloading and parking areas; enforce parking policies
- Enforce and verify ID for vaccination delivery transporters accessing storage sites or POD's
- Inspect transporter vehicles with use of under carriage mirrors, K9's (if available) prior to entering and loading vaccines and medical supplies. Verify ID of driver and personnel conducting searches
- Monitor staged cargo awaiting departure to deter tampering of vehicle
- Establish vaccination supply transporter vehicle marshalling area to restrict all other vehicles from area and loading docks
- Develop notification protocols among transport vehicles, dispatchers, carriers, and shippers that outline who should be contacted in emergencies
- Develop emergency response plans and train all POD personnel
- Ensure adequate POD support staff for emergency response and security duties; normal ops and surge needs
- Ensure authorized personnel access to the vaccine areas lists are reviewed, updated appropriately and enforced
- Ensure personnel check temperature control devices for functionality after intake, prior to setup and every 4 hours
- Develop plan for moving fragile medical supplies and vaccination materials to another storage site in case of sustained power outage or other emergency
- Ensure vaccine inventory is checked on a regular basis and all security procedures are in place and enforced

COVID-19 Vaccine Distribution Security Concerns in the Last Mile



Additional Resources

- **Community Vaccination Centers Playbook**, DHS FEMA, April 2021
www.fema.gov/disasters/coronavirus/governments/community-vaccination-centers-playbook
- **COVID-19 Vaccine Distribution Physical Security Measures**, January 2021
www.cisa.gov/publication/covid-19-vaccine-physical-security
- **COVID-19 Vaccine: Security, Storage and Handling Resource Guide**, American Society of Health Systems Pharmacists, January 2021
www.ashp.org/-/media/assets/pharmacy-practice/resource-centers/Coronavirus/docs/Vaccine-storage-handling-safety-security-guidance
- **Mass Gatherings: Security Awareness for Soft Targets and Crowded Places**, DHS CISA
www.cisa.gov/publication/active-assailant-security-resources
- **Securing Public Gatherings**, DHS CISA
www.cisa.gov/securing-public-gatherings
- **Physical Security for COVID-19 Vaccination Points of Distribution**, DHS CISA, February 2021
www.cisa.gov/publication/covid-19-vaccine-physical-security
- **Insider Threat Mitigation Guide**, DHS, CISA
www.cisa.gov/insider-threat-mitigation
- **Protecting Infrastructure during Public Demonstrations**, DHS, CISA
www.cisa.gov/businesses-and-critical-infrastructure
- **Vehicle Ramming: Security Awareness for Soft Targets and Crowded Places**, DHS, CISA
www.cisa.gov/publication/active-assailant-security-resources
- **Cold Storage Custodial Care**, DHS CISA, December 2020
www.cisa.gov/publication/cold-storage-cyber-custodial-care
- **Critical Questions and Considerations for Cold Chain Storage, and Dry Ice Operations**, DHS, CISA
www.cisa.gov/publication/physical-security-cold-storage-locations
- **Physical Security for Cold Storage Locations**
www.cisa.gov/publication/physical-security-cold-storage-locations