Instruction for routine transport of some vaccine may vary. Carefully review manufacturer guidance for each vaccine product to ensure the cold chain is maintained.

Transport, as described in this section, involves the movement of vaccine between providers or other locations over a short distance and time frame and is appropriate for events such as off-site clinic or to ensure vaccines that are about to expire can be used rather than wasted.

General Principles of Transport

Vaccine transport to off-site or satellite facilities is different from both shipping and emergency transport. Shipping usually involves a professional carrier and a longer distance and time frame for moving vaccines between locations.

Vaccine Transport

Vaccines from your supply should not be routinely transported. In instances where the transport of vaccine from your supply is necessary, take appropriate precautions to protect your supply. Vaccines should only be transported using appropriate packing materials that provide the maximum protection.

- **The total time for transport alone or transport plus clinic workday should be a maximum of 8 hours† unless guidance from the manufacturer differs (e.g., if transport to an off-site clinic is 1 hour each way, the clinic may run for up to 6 hours).**
- **Use a transport temperature monitoring log to document temperatures and how long the vaccine is in the portable storage container.**
- **Transport diluents with their corresponding vaccines to ensure there are always equal amounts of vaccines and diluents for reconstitution.**
- **Your facility should have a sufficient supply of materials needed for vaccine transport of your largest annual inventory. Appropriate materials include:**
  - Portable vaccine refrigerator/freezer/ultra-cold freezer units (preferred option)
  - Qualified containers and packouts
  - Coolant materials such as phase change materials (PCMs) or frozen water bottles that can be conditioned between 4° C and 5° C (39° F and 41° F)
  - Insulating materials such as bubble wrap and corrugated cardboard—enough to form two layers per container TMDs for each container between 4° C and 5° C (39° F and 41° F)

Protecting Your Vaccine Supply

BEST PRACTICES

- Vaccine that will be used at an off-site or satellite facility should be delivered directly to that facility.
- When delivering to a specific site, adequate storage equipment and staff should be in place to provide appropriate oversight.
- If the facility doesn't have the capacity to refrigerate the vaccines, then a portable vaccine storage unit or qualified container and packout may be used with a DDL.
- If delivery to the specific site is not possible, then vaccine can be transported in a stable storage unit and monitored with a TMD.
- If the facility doesn't have the capacity to refrigerate the vaccines, then a portable vaccine storage unit or qualified container and packout may be used with a DDL.
- Develop an emergency plan or SOPs for transporting vaccines and include procedures and protocols for packing and transport.

Partially used vials cannot be transferred between providers OR across state lines.**

* Contact your immunization program for details about specific state or local regulations impacting this activity.

† COVID-19 vaccine transport times may be different. Refer to product inserts for vaccine specific information.

Soft-sided containers specifically engineered for vaccine transport are acceptable. Do not use commercially available soft-sided food or beverage coolers because most are poorly insulated and likely to be affected by room or outdoor temperatures.

The same shipping materials the vaccines were initially shipped in should rarely, if ever, be used as they are not meant for reuse. This could put the cold chain and, ultimately, the viability of the vaccine, at risk.

Transport of Vaccines

It is always safest to have vaccines delivered directly to a facility with a vaccine storage unit ready to receive the shipment, but this is not always possible. If necessary, vaccines may be transported using a portable vaccine refrigerator with a temperature monitoring device placed with the vaccines. If a portable vaccine refrigerator is not available, qualified containers and packouts with a TMD in each container can be used. For transport to an off-site clinic, bring only what is needed for the workday.

Routine Transport System Recommendations

Container	Transport for Off-Site Clinic, Satellite Facility, or Relocation of Stock
Portable Vaccine Refrigerator or Freezer	Yes
Qualified Container and Packout	Yes
Conditioned Water Bottle Transport System*	No
Manufacturer's Original Shipping Container	No
Food/Beverage Coolers	No

Coolants for Transport

PCMs between 4° C and 5° C (39° F and 41° F) can also be purchased to maintain proper temperatures. Follow the manufacturer's instructions† for use to reduce the risk of freezing vaccines during transport.

Do not use frozen gel packs or coolant packs from original vaccine shipments to pack refrigerated vaccines. They can still freeze vaccines even if they are conditioned or appear to be "sweating."

Transport Planning and Preparation

Improper packing for transport is as risky for vaccines as a failed storage unit.

Include vaccine packing and transport protocols in your routine and emergency storage. At a minimum, include the following procedures and protocols:

For all staff-facilitated transport:

- Identify trained staff to pack vaccines as well as primary and backup vehicles and drivers for transport in advance.
- Consider renting a refrigerated truck if you have a large quantity of vaccines or need to transport vaccines an extended distance.
- Take an inventory of your vaccines and record actions to protect the vaccines during transport.
- Open unit doors only when necessary and only after completing all preparation for packing and moving vaccines.
- If using a company or personal vehicle, only transport vaccines inside the passenger compartment (not in the trunk or bed of a truck, which may be too hot or too cold).
- Move transport containers directly to a vehicle that is already at a comfortable temperature, neither too hot nor too cold.

Transporting mRNA Vaccines

- » Transport vials in the tray/carton whenever possible.
- » Protect vials as much as possible from drops, shocks, and vibration.
- » Secure storage containers during transport.
- » Protect from light. Avoid exposure to direct sunlight and ultraviolet light.

If individual vials must be transported:

- » Place vials with padding materials like bubble wrap or similar materials to prevent breaking.
- » Keep vaccine vials upright whenever possible.
- » Label the container and vials, appropriately including beyond-use date/time.
- » Transport vaccine in vials.
- » Refer to the manufacturer package insert for additional guidance.

* Packing Vaccines for Transport during Emergencies: www.cdc.gov/vaccines/hcp/admin/storage/downloads/emergency-transport.pdf
† Manufacturers' vaccine package inserts: www.fda.gov/vaccines-blood-biologics/vaccines/vaccines-licensed-use-united-states

- Avoid leaving containers in areas where they are exposed to direct sunlight.
- Check vaccine temperature upon arrival at the alternative vaccine storage facility and store vaccines at recommended temperatures immediately.
- Check with your immunization program* for additional guidance and resources on emergency transport of vaccines, particularly in major emergencies.

Transporting Opened Multidose Vials

If absolutely necessary, a partially used vial may be transported to or from an off-site/satellite facility operated by the same provider, as long as the cold chain is properly maintained. However, **a partially used vial cannot be transferred from one provider to another or across state lines.**

Transporting Predrawn Syringes

CDC recommends transporting vaccine in vials. However, there may be instances when the only option is to transport predrawn vaccine in a syringe. For example, MFSs are recommended for large vaccination clinics, however, there may be rare instances when the only option is to predraw vaccine for off-site clinics.

Transporting Diluents

Transport diluents with their corresponding vaccines so there are always equal amounts of vaccines and diluents for reconstitution. Follow the manufacturer's guidance† for specific temperature requirements.

If diluents stored at room temperature (20° C to 25° C [68° F to 77° F]) are going to be transported with refrigerated vaccines, they should be refrigerated in advance for as long as possible so they do not raise the container temperature when placed with refrigerated vaccines.

Never freeze diluents—not even during transport.

Place an insulating barrier like bubble wrap between the diluents and conditioned water bottles or phase change materials.

Transporting Frozen Vaccines

If frozen vaccines must be transported, use a portable vaccine freezer unit or qualified container and packout that maintains temperatures between -50° C and -15° C (-58° F and +5° F) or -90° C and -60° C (-130° F and -76° F) for ultra-cold transport.

Follow these steps for transporting frozen vaccines:

- Place a TMD (preferably with a buffered probe) in the container as close as possible to the vaccines.
- Immediately upon arrival at the destination, unpack the vaccines and place them in a freezer at a temperature range between -50° C and -15° C (-58° F and +5° F) or -90° C and -60° C (-130° F and -76° F) for ultra-cold freezer storage. Any stand-alone freezer that maintains these temperatures is acceptable.
- Record the time that vaccines are removed from the storage unit and placed in the transport container, the temperature during transport, and the time at the end of transport when vaccines are placed in a stable storage unit.

Do not use dry ice, even for temporary storage‡. Dry ice might expose the vaccines to temperatures colder than -50° C (-58° F).

* Immunization programs: www.cdc.gov/vaccines/imz-managers/awardee-imz-websites.html
† Manufacturers' vaccine package inserts: www.fda.gov/vaccines-blood-biologics/vaccines/vaccines-licensed-use-united-states
‡ The only exception to this is for transport of COVID-19 Vaccine (Pfizer) which can be transported at ultra-cold temperatures using dry ice.

Temperature Monitoring During Transport

Regardless of how the vaccine is moved (i.e., car, professional carrier, snowmobile, boat, small plane), if vaccines are packed by health care provider, the BUD should be applied using manufacturer guidance.

Use a continuous TMD, preferably a DDL with the capability to measure minimum/maximum temperatures, for monitoring and recording temperatures while transporting vaccines:

- The TMD should have an accuracy of +/-0.5° C (+/-1° F).
- Place buffered probe material in a sealed vial directly with the vaccines.
- Keep the TMD display on top of vaccines so you can easily see the temperature.
- Record the time and minimum/maximum temperature at the beginning of transport.

Temperature Monitoring after Transport

Immediately upon arrival at the destination, vaccines should be stored in an appropriate storage unit with a TMD. Be sure to follow these guidelines for monitoring and recording storage unit temperature:

- If the device displays minimum/maximum temperatures, this information should be checked and recorded.
- If the device does not display minimum/maximum temperatures, then the current temperature should be checked and recorded a minimum of two times (at the start and end of the workday).

If vaccines cannot be stored in an on-site storage unit, they should be kept in the portable vaccine storage unit using the following guidance:

- If using a DDL that records minimum/maximum temperatures, only check and record temperatures each time the portable vaccine storage unit is opened. If the TMD measures current temperatures only, place the probe as close as possible to the vaccines, and check and record temperatures hourly.
- Keep the container closed as much as possible.
- For off-site clinic use, remove only one multidose vial or 10 doses at a time for preparation and administration by each person administering vaccines.