North Carolina Immunization Program Transportation Guidance for Vaccines

Transportation of vaccines should be a rare occurrence and expected length of transport should be less than 30 minutes. If *transport* must occur, provider must use a thermometer with a current and valid certificate of calibration. It is strongly recommended that a digital data logger be used to transport vaccine.

Short-dated vaccine may be transferred to another NCIP provider with the approval of the NCIP and if the cold chain can be maintained. Providers must notify the NCIP of any vaccine doses that will expire before they can be administered at least four months before the expiration date to avoid restitution for improper inventory management. Providers must coordinate with the NCIP to transfer and document the transfer of vaccine between providers. Vaccine transfers between providers can occur only after receiving approval from the NCIP.

Transporting Frozen Vaccines

Guidelines for vaccine transport in emergency situations

- Routine transport of varicella– containing vaccine (MMRV and varicella vaccine) is not allowed. These vaccines should only be moved and transported when absolutely necessary.
- Make sure you have a vaccine emergency plan that includes the name and address of the destination site where you can take your frozen vaccine in an emergency.
- If vaccines must be transported, contact your VFC Program Representative or VFC Program.
- Varicella– containing vaccine should preferably be transported under frozen conditions (below 5F or - 15C).
- Vaccines must be placed in a freezer maintaining temperatures below 5F (-15C) immediately upon arrival at the backup storage facility.

Assemble packing supplies and documents

Most emergencies happen suddenly. Be sure you are prepared for emergency transport of frozen vaccine by always having the following supplies ready.

1. **Cooler.** Use hard plastic, Igloo-type coolers.
2. **Frozen cold packs.** Keep enough frozen cold packs in your vaccine freezer to make **2** layers in the transport cooler. You will need **6-8** frozen packs per cooler. NEVER USE DRY ICE
3. **Thermometer.** Keep a **Digital Data Logger** thermometer in your vaccine freezer.

Packing materials. Use any material like bubble wrap to place on top of frozen cold packs and vaccines to prevent contents from shifting, Make sure you DO NOT place bubble wrap between the vaccine and fro-

Pack vaccines and prepare for transport

Prepare for Transport

- Verify that the destination site has enough room for your vaccine and that someone will be there when the vaccine arrives.
- Verify that you have all the packing supplies on the above list.

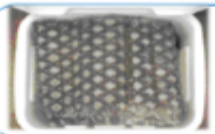
Pack Vaccines

Spread a layer of frozen ice packs to cover the bottom of the cooler.

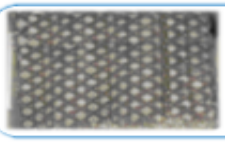
Stack layers of vaccine boxes directly on top of the frozen ice packs.

Place the digital data logger probe with the top layer of the vaccine.

Spread another layer of frozen ice packs to cover the vaccine.



Fill the cooler to the top with insulation material (bubble wrap).



Close the cooler lid and place the digital data logger's display on top of the lid with a temperature log. Transport the vaccine.

Packing Vaccines for Transport during Emergencies

Be ready BEFORE the emergency

Equipment failures, power outages, natural disasters—these and other emergency situations can compromise vaccine storage conditions and damage your vaccine supply. **It's critical to have an up-to-date emergency plan with steps you should take to protect your vaccine.** In any emergency event, activate your emergency plan immediately, and if you can do so safely, follow the emergency packing procedures for refrigerated vaccines.

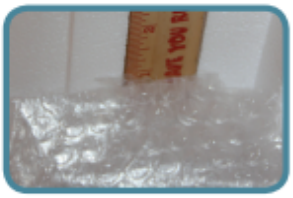
1 Gather the Supplies

Hard-sided coolers or Styrofoam™ vaccine shipping containers

- Coolers should be large enough for your location's typical supply of refrigerated vaccines.
- Can use original shipping boxes from manufacturers if available.
- Do NOT use soft-sided collapsible coolers.

Conditioned frozen water bottles

- Use 16.9 oz. bottles for medium/large coolers or 8 oz. bottles for small coolers (enough for 2 layers inside cooler).
- Do NOT reuse coolant packs from original vaccine shipping container, as they increase risk of freezing vaccines.
- Freeze water bottles (can help regulate the temperature in your freezer).
- Before use, you must condition the frozen water bottles. Put them in a sink filled with several inches of cool or lukewarm water until you see a layer of water forming near the surface of bottle. The bottle is properly conditioned if ice block inside spins freely when rotated in your hand.



Insulating material — You will need two of each layer

- **Insulating cushioning material** – Bubble wrap, packing foam, or Styrofoam™ for a layer above and below the vaccines, at least 1 in thick. Make sure it covers the cardboard completely. Do NOT use packing peanuts or other loose material that might shift during transport.
- **Corrugated cardboard** – Two pieces cut to fit interior dimensions of cooler(s) to be placed between insulating cushioning material and conditioned frozen water bottles.

Temperature monitoring device – Digital data logger (DDL) with buffered probe. Accuracy of +/-1°F (+/-0.5°C) with a current and valid certificate of calibration testing. Pre-chill buffered probe for at least 5 hours in refrigerator. Temperature monitoring device currently stored in refrigerator can be used, as long as there is a device to measure temperatures for any remaining vaccines.

Why do you need cardboard, bubble wrap, and conditioned frozen water bottles?

Conditioned frozen water bottles and corrugated cardboard used along with one inch of insulating material such as bubble wrap keeps refrigerated vaccines at the right temperature and prevents them from freezing. **Reusing vaccine coolant packs from original vaccine shipping containers can freeze and damage refrigerated vaccines.**

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

Distributed by

CS249275-A August 2015

Visit **www.cdc.gov/vaccines/SandH** for more information, or your state health department.

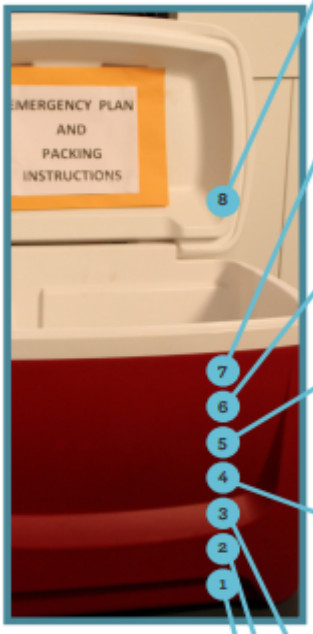
Updated 02/02/2018

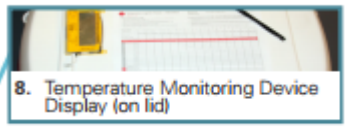
Packing Vaccines for Transport during Emergencies

2 Pack for Transport

Conditioning frozen water bottles

- Put frozen water bottles in sink filled with several inches of cool or lukewarm water or under running tap water until you see a layer of water forming near surface of bottle.
- The bottle is properly conditioned if ice block inside spins freely when rotated in your hand.
- If ice "sticks," put bottle back in water for another minute.
- Dry each bottle.
- Line the bottom and top of cooler with a single layer of conditioned water bottles.
- Do NOT reuse coolant packs from original vaccine shipping container.




8. Temperature Monitoring Device Display (on lid)

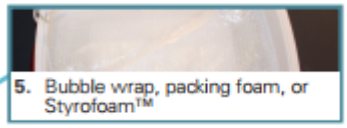
Close lid – Close the lid and attach DDL display and temperature log to the top of the lid.


7. Conditioned Water Bottles

Conditioned frozen water bottles – Fill the remaining space in the cooler with an additional layer of conditioned frozen water bottles.


6. Cardboard Sheet

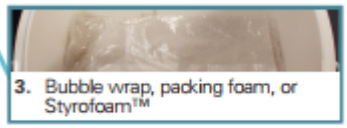
Insulating material – Another sheet of cardboard may be needed to support top layer of water bottles.


5. Bubble wrap, packing foam, or Styrofoam™

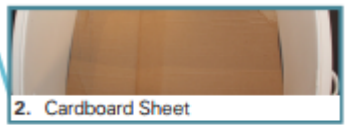
Insulating material – Cover vaccines with another 1 in. layer of bubble wrap, packing foam, or Styrofoam™


4. Vaccines, Diluents, and Temperature Monitoring Device Probe

Vaccines – Add remaining vaccines and diluents to cooler, covering DDL probe.
Temperature monitoring device – When cooler is halfway full, place DDL buffered probe in center of vaccines, but keep DDL display outside cooler until finished loading.
Vaccines – Stack boxes of vaccines and diluents on top of insulating material.


3. Bubble wrap, packing foam, or Styrofoam™

Insulating material – Place a layer of bubble wrap, packing foam, or Styrofoam™ on top (layer must be at least 1 in. thick and must cover cardboard completely).


2. Cardboard Sheet

Insulating material – Place 1 sheet of corrugated cardboard over water bottles to cover them completely.


1. Conditioned Water Bottles

Conditioned frozen water bottles – Line bottom of the cooler with a single layer of conditioned water bottles.

NOTE:
This packout can maintain appropriate temperatures for up to 8 hours, but the container should not be opened or closed repeatedly.

3 Arrive at Destination

Before opening cooler – Record date, time, temperature, and your initials on vaccine temperature log.
Storage – Transfer boxes of vaccines quickly to storage refrigerator.
Troubleshooting – If there has been a temperature excursion, contact vaccine manufacturer(s) and/or your immunization program before using vaccines. Label vaccines "Do Not Use" and store at appropriate temperatures until a determination can be made.