MEMORANDUM

TO: North Carolina Immunization Program (NCIP) Providers

FROM: Wendy Holmes, RN, Head Immunization Branch

SUBJECT: Updated Refrigerated Vaccine Transport Guidance

The purpose of this memo is to introduce recent update to the refrigerated vaccine transportation guidance from the Centers for Disease Control and Prevention (CDC). CDC recommends the use of frozen conditioned water bottles for transport of refrigerated vaccines. Please refer to the attached updated guidance for details.

Key points to remember:

- Vaccine transfers may occur with the approval and under the direct guidance of the NC Immunization Branch and only if the cold chain can be maintained.
- Vaccine transfers should be rare.
- Keep transportation materials on hand at all times.
- Keep the NCIP Routine Vaccine Management Plan and Emergency Vaccine Management Plan up to date at all times.
- Transport of frozen vaccine has not changed.

If you have questions or need additional information please contact the Help Desk at 1-877-873-6247. For questions specifically about vaccine storage and handling, please call 919-707-5574.

Attachments

Cc: SMT CO Staff Regional Staff Vaccine Manufacturers Elizabeth Hudgins Peter Graber Jason Swartz Frank Skwara Desiree Elekwa-Izuakor Terri Pennington Taryn Edwards Gregg Griggs Danny Staley
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 transportation must occur, providers 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 vaccines.

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 vaccines (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 the VFC Program.
- Varicella-containing vaccines should preferably be transported under frozen conditions (below 5F or -15C).
- Do not freeze diluent for varicella-containing vaccines.
- 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 two layers in the transport cooler. You will need 6-8 frozen packs per cooler. NEVER USE DRY ICE.
3. Thermometer. Keep a portable MIN/ MAX thermometer in your vaccine freezer even if you normally use a continuous read thermometer for monitoring vaccine freezer temperatures.
4. Packing materials. Use any material like bubble wrap to place on top of the frozen cold packs to prevent contents from shifting. Make sure you DO NOT place bubble wrap between the vaccine and frozen packs.

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

1. Spread a layer of frozen ice packs to cover the bottom of the cooler. Do not use dry ice.
2. Stack layers of vaccine boxes directly on top of the frozen ice packs.
3. Place the thermometer probe with the top layer of vaccine.
4. Spread another layer of frozen ice packs to cover the vaccine.
5. Fill the cooler to the top with insulation material (bubble wrap).
6. Place the thermometer’s display on top of the insulation/packing material. Then close the cooler and transport the vaccine.

Update 10/21/2015
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.**
Packing Vaccines for **Transport during Emergencies**

## 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.

!![Images of conditioned water bottles and packing instructions]

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

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

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

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

**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.

**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).

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

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

### 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.

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