



Temperature Excursions and Vaccine Emergency Transport



Temperature Excursions

Storage Unit Temperatures

Refrigerator

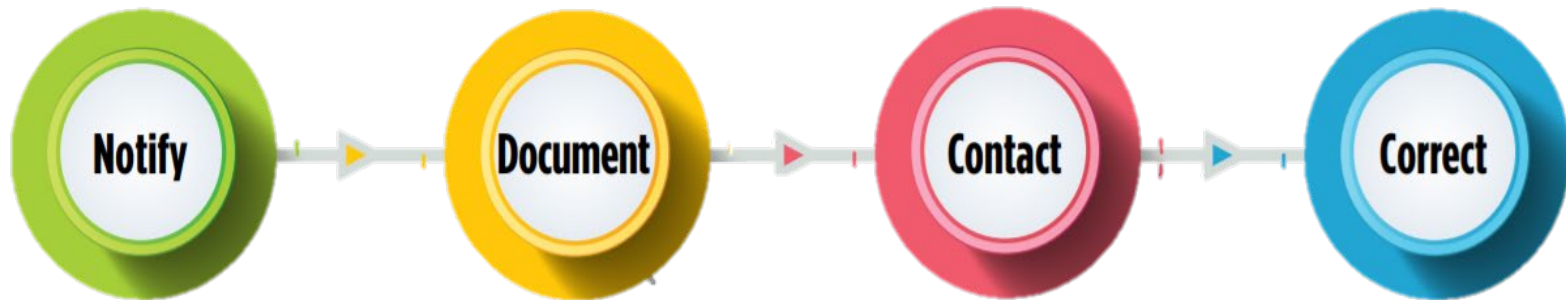
36°F and 46°F (2°C and 8°C)

Freezer

-58°F and +5°F (-50°C and -15°C)

Responding to Temperature Excursions

- Temperature excursions require immediate attention
- Never discard vaccine without contacting the manufacturer or Immunization Program
- Temperature excursion times are cumulative





Notify the Vaccine Coordinator

- Notify the Vaccine Coordinator IMMEDIATELY
- Mark the vaccine(s) “Do Not Use” and separate the vaccine
- Do not discard vaccines until instructed to do so



Document Excursion Information

- Temperature of vaccine and room
- Description of the event
- Storage unit inventory



Contact the Manufacturer or Immunization Program

- Manufacturer - Private vaccine
- Immunization Program - VFC and SCHIP
- Provide excursion information



Correct Storage Unit Issues

- Identify cause of excursion
- Contact service company
- Purchase new storage unit, if needed

Troubleshooting Storage Unit Issues

- Post warning sign
- Before adjusting temp:
 - Plugged in?
 - Door shut?
 - Cooling vent blocked?
- Do Not adjust temps during the workday
- Do not adjust temps during the workday



Adjusting Temps

- Make small adjustments
- Allow temperature 30 minutes to stabilize
- Recheck temperature
- Repeat until stable



Vaccine Emergency Transport

When

When do you transport?

What

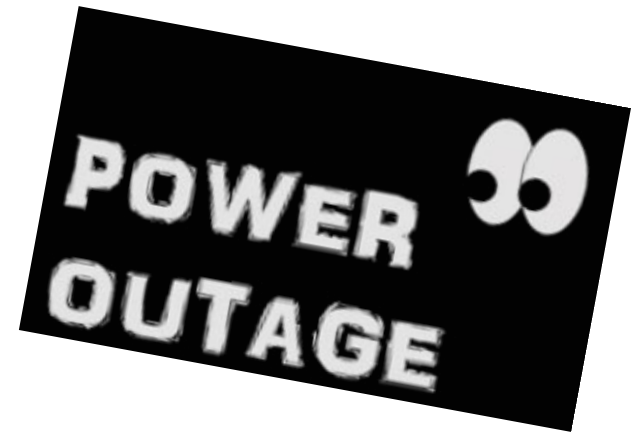
What do you do to prepare?
What supplies do you need?

How

How do you pack the vaccine?

When do you move vaccine??

- Power outage lasting two hours or longer



- Storage unit malfunction

Transporting Vaccines

- Establish a working agreement with at least one alternative storage facility with a back-up generator.



- Contact the alternate vaccine storage site prior to moving vaccine.



- Transport in a hard-sided cooler with at least 2-inch walls, a thick Styrofoam® vaccine shipping container or a specialized vaccine transport cooler.



- Include copy of the vaccine inventory in the transport container.
- Move transport containers directly to a preheated or precooled vehicle.



- Only transport vaccines inside the passenger compartment of a vehicle, not in the trunk.
- Avoid leaving containers in areas where they are exposed to direct sunlight.

- Upon arrival at the alternate storage facility, confirm their vaccine storage unit temperatures are within recommended ranges.
- Record the date, time, and temperature in the transport container upon arrival. Check the temperature prior to opening the transport cooler.
- Store vaccines immediately upon arrival.



Transporting refrigerated vaccines

- Transport and store refrigerated vaccines at 36-46°F.
- “Condition” frozen water bottles prior to use.
- Frozen water bottles that are not conditioned can freeze vaccine.



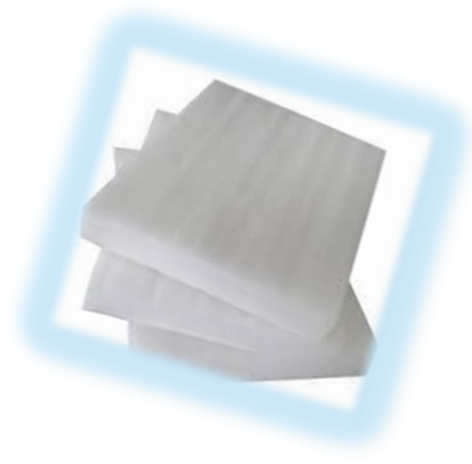
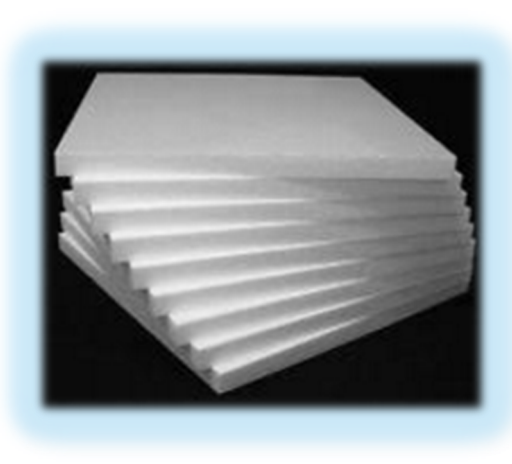
Refrigerated vaccine pack out

1. Line the bottom of the cooler with a single layer of “conditioned” water bottles.



2. Place one sheet of corrugated cardboard over the water bottles





3. Place a layer of insulated material, such as bubble wrap, packing foam or Styrofoam®, at least one inch thick over the cardboard



4. Stack half the boxes of vaccine on the insulated material.



5. Place the thermometer probe in the center of the vaccine.



6. Stack the remaining boxes of vaccine over the thermometer probe.

7. Cover vaccines with a one inch layer of insulated material, such as bubble wrap, packing foam, or Styrofoam® material.
8. Add another sheet of corrugated cardboard to cover the insulating material.
9. Fill the remaining space of the cooler with “conditioned” water bottles.



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

8. Attach the temperature display and temperature log to the top of the container.



Temperature Log for Vaccines (Fahrenheit)

Month/Year: _____

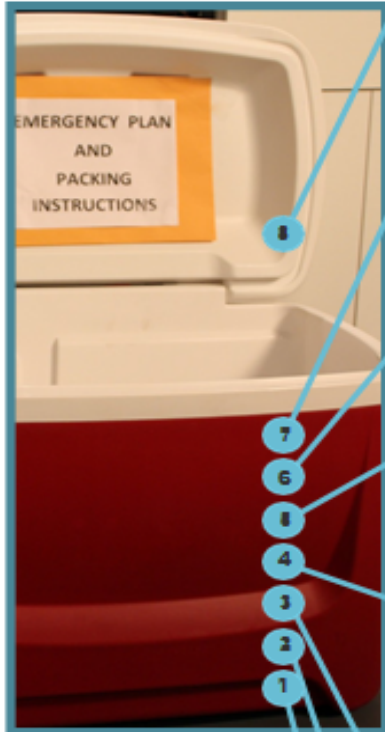
Days 1-15

Day of Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Staff Initials																
Room Temp.																
Exact Time																
°F Temp	am pm	am pm	am pm	am pm	am pm	am pm	am pm	am pm	am pm	am pm	am pm	am pm	am pm	am pm	am pm	
Refrigerator temperature	49°															
	48°	Take immediate action if temperature is in shaded section*														
	47°															
	46°															
	45°															
	44°															
	43°															
	42°															
	41°															
	40°															
Freezer temp	8°															
	7°	Take immediate action if temperature is in shaded section*														
	6°															
	5°															
	4°															
	3°															

Aim for 40



Refrigerated Vaccine Pack out



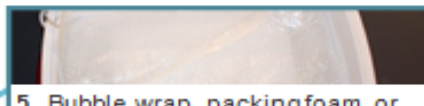
8. Temperature Monitoring Device Display (on lid)



7. Conditioned Water Bottles



6. Cardboard Sheet



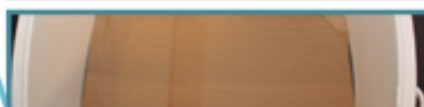
5. Bubble wrap, packing foam, or Styrofoam™



4. Vaccines, Diluents, and Temperature Monitoring Device Probe



3. Bubble wrap, packing foam, or Styrofoam™



2. Cardboard Sheet



1. Conditioned Water Bottles

Close lid – Close the lid and attach the temperature 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 the thermometer probe.

Temperature monitoring device – When cooler is halfway full, place thermometer probe in center of vaccines, but keep temperature 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.

NOTE:

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

Frozen Vaccine Pack Out

1. Place a layer of frozen water bottles to cover the bottom of the container.
2. Layer the frozen vaccine directly on top of the frozen water bottles.
3. Place the temperature probe directly on top of the vaccine.
4. Spread a layer of frozen water bottles over the vaccine.
5. Layer bubble wrap to the top of the container.
6. Close the container and secure the data logger and temperature log to the top of the container.



Frozen vaccine pack out

Pack vaccines

1. Frozen cold packs

Place a layer of cold packs to completely cover the bottom of the cooler. NEVER USE DRY ICE.



2. Vaccines

Layer vaccine boxes directly on top of the frozen cold packs.



3. Buffered probe

Place the buffered probe with the top layer of vaccines.



4. Frozen cold packs

Spread another layer of frozen cold packs to completely cover the vaccines.



5. Bubble wrap

Layer bubble wrap to the top of the cooler.



6. Final steps

Layer bubble wrap to the top of the cooler. Record the temperatures before departure on the transport log. Close the cooler. Carefully attach the digital display and log to the top of the cooler.



TRUE OR FALSE??

Refrigerated and frozen vaccines should never be transported together in the same container?

TRUE

TRUE OR FALSE??

Cold packs should be used when transporting refrigerated vaccines?

FALSE

Emergency Transport Resources

- CDC's Storage and Handling Toolkit
<https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html>
- CDC's Epidemiology and Prevention of Vaccine-Preventable Diseases "Pink Book"
<https://www.cdc.gov/vaccines/pubs/pinkbook/vaccine-storage.html>
- California Department of Health Immunization website
<http://eziz.org/vaccine-storage/>

For any questions on storage and handling of vaccines or vaccine transport, feel free to contact me or your regional VFC Representative!

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THANK YOU