



Department  
of Health

# Vaccines for Children (VFC) Program Training:

## Monitoring Vaccine Storage Temperatures, Excursion Reporting, and Vaccine Transport

Division of Vaccine Excellence  
Bureau of Vaccine Programs



SERIES 9

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Hello and welcome back. This next training is intended to provide guidance to New York State Vaccines for Children (VFC) providers on monitoring vaccine storage temperatures, excursion reporting, and vaccine transport.

# DEFINITIONS



- **Minimum (MIN) temperature:** The coldest temperature inside of the storage unit recorded by the temperature monitoring device within the last 24 hours\*.
- **Maximum (MAX) temperature:** the warmest temperatures inside of the storage unit recorded by the temperature monitoring device within the last 24 hours\*.
- **Temperature Excursion:** any temperatures outside of the recommended range found in the vaccine package insert for **any duration of time**.

\*or since the last time the temperatures were checked i.e., holidays or weekends



Let's start with some basic definitions.

The minimum or min temperature is the coldest temperature inside the storage unit that was recorded over a certain period of time. The maximum or max temperature is the warmest temperature inside the storage unit that was recorded over a period of time.

For VFC purposes, we are looking for the min and the max for the previous 24 hours, but min/max temps must also be checked and recorded after other longer office closures such as holidays and weekends.

A temperature excursion is any temperatures outside of the recommended range found in the vaccine package insert for any duration of time.

# MIN/MAX FEATURE ON THE DIGITAL DATA LOGGER (DDL)



- The minimum/maximum feature on Digital Data Loggers (DDLs) detects excursions that are not within the alarm parameters after hours and weekends.
- Some devices automatically clear the previous min/max while others must be manually cleared.
- Read the DDL instructions to understand how to read the previous 24-hour min/max readings.
- If the minimum or maximum readings are not within the acceptable temperature range, an excursion has occurred and must be reported!
  - Refer to the training section on reporting temperature excursions for further information



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Min/max temperature readings on DDLs can detect excursions that can occur after hours and weekends.

Some temperature monitoring devices will clear the min and max temperatures automatically after you check them, and some require a manual clearing process. Refer to the product manual or consult the vendor for instructions that are specific to your device.

Minimum and maximum values are actual temperatures measured in your storage unit, therefore they should read within acceptable temperature ranges. If either the minimum or the maximum temperature is not within the acceptable temperature range, an excursion has occurred and must be reported the VFC program the day it is discovered.

# VACCINE TEMPERATURE MONITORING



- All NYS Vaccine Providers must use a calibrated, continuous temperature monitoring device known as a Digital Data Logger (DDL)
- Each storage unit housing publicly-funded vaccine must have a DDL
- CDC's [Vaccine Storage and Handling Toolkit](#) outlines VFC Program requirements for DDLs
- NYS VFC Program provides one freezer and one refrigerator Fridge-Tag® 2L Data Logger to each enrolled VFC provider once every two years. Providers may choose to use as a backup DDL if using another brand as primary device.
  - [Daily Monitoring Procedure Reference guide](#)



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As discussed in previous trainings in this series, All NYS Vaccine Providers (VFC, VFA, Birth-dose Hospitals) must use a calibrated, continuous temperature monitoring device known as a Digital Data Logger (DDL) and each storage unit housing publicly-funded vaccine must have its own DDL

CDC's [Vaccine Storage and Handling Toolkit](#) outlines VFC Program requirements for DDLs

Currently, NYS VFC Program provides one freezer and one refrigerator Fridge-Tag® 2L Data Logger to each enrolled VFC provider approximately once every two years, as contract funding allows. The NYS VFC program does not require this device to be used, and providers may choose to use this as a backup DDL if using another brand as primary device.

A quick reference guide to the daily temperature monitoring procedure is linked on this slide and on the resource document included with this training.

# DAILY VACCINE TEMPERATURE MONITORING REQUIREMENTS



- Check the storage unit temps each time the vaccine is removed from the storage unit for administration.
- Review DDL download reports at least weekly for changes in temperature trends that might require action to be taken.
- DDL temperatures in all vaccine storage units must be checked **and** recorded to the tenth of a degree (i.e. 36.4°F) manually daily when the clinic opens for the day.
- In the AM (open), record the minimum and maximum temperatures for the past 24 hours
- Temperatures must be recorded on a temp log (paper or electronic) that includes daily min/max, date, time, initials/name of person checking the temperature.



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It is a best practice to check the temperature on the DDL display each time vaccines are accessed in the storage unit. Review storage unit temperature readings from downloaded data logger reports weekly for changes in temperature trends that might require action.

VFC providers are required to check the minimum and maximum temperatures in the storage units for the prior 24 hours when the office first opens for the day. Temperatures should be recorded to the tenth – for example: 36.4 versus 36 degrees. Temperatures must be recorded on a temp log (paper or electronic) that includes daily min/max, date, time, initials/name of person checking the temperature.

# DAILY VACCINE TEMPERATURE MONITORING REQUIREMENTS



- Downloading DDL temperatures may never be used to replace daily manual review and recording of temperatures.
- If temperatures are not checked regularly, and excursions (that do *or* do not trigger an alarm/"x") are missed, this can lead to administration of non-viable vaccines which will require re-immunizations.
- Cumulative out-of-range temperatures can impact vaccine viability, **even if the alarm is never triggered!**



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Downloading DDL temperatures may never be used to replace daily manual review and recording of temperatures.

If temperatures are not checked regularly, and excursions (that do or do not trigger an alarm/"x") are missed, this can lead to administration of non-viable vaccines which will require re-immunizations.

It is important to note that cumulative out-of-range temperatures can impact vaccine viability, even if the alarm is never triggered!

# DAILY VACCINE TEMPERATURE MONITORING



- The DDL data should be downloaded at minimum every 2 weeks, preferably weekly, and any time there is an out-of-range temperature.
- Review the DDL download report for any possible missed excursions and temperature fluctuation trends.
- Save report to an electronic or paper folder and retain for a minimum of 3 years.
- If using the NYS-supplied Fridge-Tag2L, create a folder to save your DDL downloads prior to the first time you use the download function.



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It is required that DDL data be downloaded at minimum every 2 weeks, preferably weekly, and any time that there is an out-of-range temperature on your DDL. Review the DDL download report for any possible missed excursions and temperature fluctuation trends.

The downloaded report must be stored in an electronic or paper folder and maintained for a minimum of 3 years, as required by CDC. The DDL downloaded reports must be made available upon request.

If you are using the NYS supplied Fridge Tag 2L, it is recommended you create a folder to save your DDL downloads prior to the first time you use the download function.

# TEMPERATURE EXCURSIONS



This next section we will review out-of-range vaccine storage temperatures, known as temperature excursions.

# WHAT IS A TEMPERATURE EXCURSION?

- **Any** out-of-range temperature, **regardless of duration or reason**, is considered a temperature excursion!

UNIT TYPE	BELOW	ABOVE
Refrigerated Vaccines	2° C	8° C
	36° F	46° F
Frozen Vaccines*	-50° C	-15° C
	-58° F	5° F
ULT Vaccines (Pfizer COVID-19)	-90° C	-60° C
	-130° F	-76° F

\*Always refer to product insert. Some frozen vaccine may only be stored frozen between -15°C and -25°C



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The NYS Vaccines for Children Program defines a temperature excursion as any out-of-range temperature, regardless of duration or reason, with or without the “Alarm” or “X” being triggered. Some reasons for temperature excursions can be:

Leaving the door open too long while conducting inventory

Door inadvertently left open

Power outage

Storage unit failure

Whether within your control or not and regardless of duration – 1 minute or several hours – every excursion must be reported.

The grid on this slide shows the appropriate vaccine storage temperatures by storage unit type. While this is helpful, always refer to the vaccine package insert as some vaccines may have more restrictive storage ranges.

## WHAT IS A TEMPERATURE EXCURSION?

- Not every temperature excursion affects vaccine viability.
- ALL excursions involving publicly-funded vaccines (anything ordered through NYSIIS) must be reported to the NYS VFC Program the day it is noted by submitting a [Temperature Excursion Report](#) to [vaccinetempexcursion@health.ny.gov](mailto:vaccinetempexcursion@health.ny.gov).
- The cumulative time out-of-range (5 minutes here, 2 minutes there, etc.) must always be considered.
- Some excursions result in patients requiring reimmunizations!
  - The longer you continue to use non-viable vaccine, the more patients you will have to recall to be reimmunized.
  - If reimmunizations are required, you will not be able to order or administer VFC vaccines until a corrective action plan is submitted, and all patients have been reimmunized.
- **There can be an excursion without an alarm/"X" being triggered!**



While not every excursion affects vaccine viability, it is not only required, but critical that all excursions be reported to the NYS VFC Program the same day they are identified, as the cumulative time out-of-range must be considered. Multiple seemingly “small” excursions over the course of time can add up to the maximum time for which certain vaccines are considered viable. The NYS VFC Program maintains records of reported temperature excursions and can add up cumulative out of range times for vaccine lots based on date the order was received and dates of excursions.

Continued use of vaccines exposed to out-of-range temperatures can result in patients needing to be recalled and reimmunizations offered due to having received improperly stored vaccines.

Please also note that there can be out-of-range temperatures without an alarm ever being triggered. Most data loggers are not set to alarm until a certain time outside the appropriate temperature range. This is why it is so important to correctly review and record the min/max temperatures daily. Catching these out-of-range temperatures as soon as possible is

critical.

## OTHER TYPES OF EXCURSIONS



- All types of excursions must be reported. Other types of excursions include:
  - Vaccine left out of storage unit
  - Refrigerated vaccines accidentally stored in the freezer and vice versa
  - Shipping excursions – vaccine received and temperature in shipping container is not in range
- **Vaccine must not be used unless the vaccine is determined viable after reporting the excursion to the NYS VFC Program -**  
[vaccinetempexcursion@health.ny.gov](mailto:vaccinetempexcursion@health.ny.gov)



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Other types of excursions include:

Vaccines left out of the storage unit

Refrigerated vaccines accidentally stored in the freezer and vice versa

Shipping excursions where vaccine shipment is received and the temperature in the shipping container is not in range.

Regardless of the type of excursion, vaccine must not be used unless it is determined viable after reporting the excursion to the NYS Vaccine Program.

# TEMPERATURE EXCURSION REPORT – PART 1

- Fill out Provider Information
  - Include all NYSIIS PIN(s) used to order the impacted vaccines
  - Fill out Excursion Information
  - Note any vaccine previously affected by temperature excursions
- Attach digital data logger (DDL) file(s) for the past 3 months for each storage unit that had out-of-range temperatures
- **STOP – NYS Vaccine Program will determine whether you need to complete Part 2 of this report. DO NOT ADMINISTER ANY PUBLICLY-FUNDED VACCINE before you receive a determination from NYS Vaccine program**

The screenshot shows the 'New York State Department of Health Vaccine Program Temperature Excursion Report' form, Part 1. It includes instructions for reporting an excursion, a 'PROVIDER INFORMATION' section with fields for Provider Site Name and PIN, a 'CONTACT INFORMATION' section with fields for Name of Person Submitting Excursion Report, Email Address, and Direct Phone Number, and an 'EXCURSION INFORMATION' section with checkboxes for storage conditions (Refrigerator, Freezer, Ultra-low temperature freezer, Transport/Shipping container, Room temperature) and a section for describing the excursion. A footer note states: 'Submit part 1 of this report and all required DDL file(s) by email to [vaccineexcursion@health.ny.gov](mailto:vaccineexcursion@health.ny.gov) or fax (518-488-4922). Remember to label DDL file(s) with your provider site name and PIN(s). NYS Vaccine Program will determine whether you need to fill out part 2 of this report. Do not administer any vaccine before you receive a determination from NYS Vaccine Program.'



This slide shows part 1 of the temperature excursion report form.

If you have an excursion, immediately cease vaccinating and fill out part 1 on the day the excursion is identified.

Next, download digital data logger file(s) for each storage unit that had out-of-range temperatures. You must compile 3 months of DDL data for each impacted unit. Submit part 1 together with your downloaded data logger files to [vaccinetempexcursion@health.ny.gov](mailto:vaccinetempexcursion@health.ny.gov)

In many cases our vaccine excursion team can assess vaccine viability.

Depending on the excursion, NYS VFC Program may determine you need to contact the vaccine manufacturer(s) and submit part 2 of this report.

[https://www.health.ny.gov/prevention/immunization/vaccines\\_for\\_children/docs/excursion\\_reporting\\_form.pdf](https://www.health.ny.gov/prevention/immunization/vaccines_for_children/docs/excursion_reporting_form.pdf)

# TEMPERATURE EXCURSION REPORT – SUMMARY

- On this page of the Excursion Report, the **NYS VFC Program staff** will review DDL files and summarize for each storage unit:
  - High/low temperature
  - Cumulative time out of range
  - Other relevant details
- Providers** refer to this summary if you are directed to contact vaccine manufacturers for determination of viability

THIS PAGE FOR NYSDOH VACCINE PROGRAM USE ONLY. PROCEED TO PAGE 3.

Provider Site Name: \_\_\_\_\_  
 PIN(s): \_\_\_\_\_

<b>TEMPERATURE SUMMARY (to be completed by NYSDOH Vaccine Program)</b>		
<b>Unit 1   Target temperature range:</b> <input type="checkbox"/> Refrigerated (2°C to 8°C or 36°F to 46°F) <input type="checkbox"/> Frozen (-50°C to -15°C or -58°F to 5°F) <input type="checkbox"/> ULT (-90 °C to -40 °C or -130 °F to -76 °F)	<b>Actual temperature range:</b> High: _____ °C _____ °F Low: _____ °C _____ °F Cumulative time out-of-range: _____	Notes: _____
<b>Unit 2   Target temperature range:</b> <input type="checkbox"/> Refrigerated (2°C to 8°C or 36°F to 46°F) <input type="checkbox"/> Frozen (-50°C to -15°C or -58°F to 5°F) <input type="checkbox"/> ULT (-90 °C to -40 °C or -130 °F to -76 °F)	<b>Actual temperature range:</b> High: _____ °C _____ °F Low: _____ °C _____ °F Cumulative time out-of-range: _____	Notes: _____
<b>Unit 3   Target temperature range:</b> <input type="checkbox"/> Refrigerated (2°C to 8°C or 36°F to 46°F) <input type="checkbox"/> Frozen (-50°C to -15°C or -58°F to 5°F) <input type="checkbox"/> ULT (-90 °C to -40 °C or -130 °F to -76 °F)	<b>Actual temperature range:</b> High: _____ °C _____ °F Low: _____ °C _____ °F Cumulative time out-of-range: _____	Notes: _____
<b>Unit 4   Target temperature range:</b> <input type="checkbox"/> Refrigerated (2°C to 8°C or 36°F to 46°F) <input type="checkbox"/> Frozen (-50°C to -15°C or -58°F to 5°F) <input type="checkbox"/> ULT (-90 °C to -40 °C or -130 °F to -76 °F)	<b>Actual temperature range:</b> High: _____ °C _____ °F Low: _____ °C _____ °F Cumulative time out-of-range: _____	Notes: _____
<b>Unit 5   Target temperature range:</b> <input type="checkbox"/> Refrigerated (2°C to 8°C or 36°F to 46°F) <input type="checkbox"/> Frozen (-50°C to -15°C or -58°F to 5°F) <input type="checkbox"/> ULT (-90 °C to -40 °C or -130 °F to -76 °F)	<b>Actual temperature range:</b> High: _____ °C _____ °F Low: _____ °C _____ °F Cumulative time out-of-range: _____	Notes: _____
Reviewed by: _____	Date: _____	Confirmation number: _____

NYSDOH Vaccine Program Temperature Excursion Report February 2023 2



The NYS VFC Program staff reviews the downloaded data logger files and summarizes for each impacted storage unit on page 2 of the Excursion Report. The information on this page must be referred to if it is determined that the vaccine manufacturers need to be contacted.

[https://www.health.ny.gov/prevention/immunization/vaccines\\_for\\_children/docs/excursion\\_reporting\\_form.pdf](https://www.health.ny.gov/prevention/immunization/vaccines_for_children/docs/excursion_reporting_form.pdf)



## TEMPERATURE EXCURSION REPORTING: KEY MESSAGES

- **Cease vaccinating immediately** when an excursion is identified.
- Label impacted vaccines “DO NOT USE.”
- An excursion must be reported on the same day it is identified:
  - Part 1 of the Temperature Excursion Report and the data logger download (DDL) is submitted to [vaccinempexcursion@health.ny.gov](mailto:vaccinempexcursion@health.ny.gov)
- VFC program staff responds regarding vaccine viability or will notify you if the manufacturers must be contacted (Part 2 of the Excursion Report).
- If vaccine is determined to be viable, you may resume vaccinating.
- If the manufacturers need to be contacted, **DO NOT** resume vaccinations until viability is determined.



In summary:

Cease vaccinations immediately when an excursion is identified

Excursion is reported as on same day it is identified

Part 1 of the Excursion Report Form and the data logger download is submitted to [vaccinempexcursion@health.ny.gov](mailto:vaccinempexcursion@health.ny.gov)

The VFC program staff will respond regarding vaccine viability or will notify you that the manufacturers must be contacted.

If vaccine is determined to be viable, you may resume vaccinating.

If the manufacturers need to be contacted, DO NOT resume vaccinations until viability is determined by the manufacturer.

# PREVENTION OF TEMPERATURE EXCURSIONS

## Storage Unit Causes

Inappropriate or faulty



## Preventive Best Practices

Use a standalone unit + Maintain units

Overcrowded



Get a larger unit

Unplugged



Use reminder signs and plug guards + Educate staff

Wrong thermostat setting



Only trained staff reset thermostat + Use set point security

Door opened too often



Open doors less often + Use door alarm or self closing doors

## Other Possible Causes

Seasonal weather changes



Always monitor facility temperature

No power or natural disaster



Share emergency plan + Use alarm notification



Temperature excursions can occur for a variety of reasons. Here are some possible causes followed by preventive best practices that can be used to reduce the likelihood of a temperature excursion.

- One possible cause is faulty or inappropriate storage unit equipment. To prevent this from happening use standalone refrigerators and freezers only, and be sure to regularly maintain vaccine storage units.
- Another cause of a temperature excursion could be an overstocked or over-packed storage unit. To prevent this from happening make sure that your unit has enough space to store the year's largest inventory, considering school and flu season.
- If a storage unit was accidentally unplugged, this could cause a temperature excursion. Place signs near the outlets where the units are plugged in and on any linked circuit breakers, use plug guards, and be sure to educate staff about not disconnecting power to the units including maintenance and custodial staff.
- To prevent a storage unit thermostat from being incorrectly set, allow only designated staff, such as the vaccine coordinator and backup, to adjust the thermostat. Some storage units come equipped with set point security, in which a key is required to change the thermostat.

- Opening a storage unit door too often or leaving it open could cause temperature excursions. To prevent this from happening, only open storage unit doors when necessary and put a reminder to keep the storage unit door closed on the unit. Some storage units come equipped with door ajar alarms or self-closing doors. If your practice has frequent issues with the door being left open and a large vaccine supply, having a storage unit with this feature may be a worthy investment.
- Also be aware that seasonal temperature variation can inadvertently cause vaccine temperature excursions. Check that the room temperature in your practice is appropriate and adjust the room thermostat as needed.
- Finally, although there's nothing that can be done to prevent power outages or natural disasters, in order to prevent a loss of vaccine during a power outage, have an emergency plan with written procedures that is accessible to all staff. Some continuous temperature monitoring devices come equipped with alarms that will contact staff after hours in the event that an outage or excursion is detected.

# POWER OUTAGES

- For power outages less than 2 hours:
  - **Do not open storage unit door(s)**
  - Start recording room temperatures as soon as possible
  - Monitor unit temperatures closely
  - Record min/max temperatures reached during power outages
- For power outages longer than 2 hours:
  - Active your emergency plan
  - Do not keep vaccines in a nonfunctioning storage unit



For short-term power outages that you anticipate will last less than 2 hours: do not open storage unit doors. Depending on the room temperature, storage unit temperatures can often be maintained with water bottles in the refrigerator, and frozen water bottles in the freezer. You'll need to monitor the temperatures regularly during the outage. As soon as possible, start recording and monitoring both the room temperature internal temperature of the storage units.

You should also record minimum and maximum temperatures reached during the power outage. For longer-term power outages lasting more than 2 hours or power outages of uncertain duration: activate your facility's emergency plan. Above all, do NOT allow vaccines to remain in a nonfunctioning unit for an extended period of time.

# SAFEGUARDING POWER SUPPLY

## DO

- Plug vaccine storage unit directly into wall.
- Plug only one unit into an outlet
- Use a plug guard or safety-lock plug
- Label circuit breakers and electrical outlets
- Install a temperature alarm
- Use water bottles in refrigerator and frozen water bottles in freezer\*
- Perform daily inspection of storage units
- Advise staff (custodial and maintenance) to never disconnect power
- Post warning signs that include emergency contact information

## DON'T

- Plug units into:
  - multi-outlet power strips
  - power outlets with built-in circuit switchers or GFCI's (reset button)
  - power outlets that can be activated by a wall switch

\*Refer to storage unit user manual, as some pharmaceutical grade vaccine storage units do not require water bottles



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Ensuring your power supply is safeguarded is a best practice to prevent temperature excursions.

All vaccine storage units should be plugged directly into the wall.

If possible, plug only one unit into each outlet and consider using a plug guard or safetylock plug.

- Label all outlets and circuit breakers with warning signs discouraging a disconnect of power. This slide shows an example of a sticker placed on an outlet used by a vaccine storage unit.
- Consider installing a temperature alarm to alert you to temperatures excursions quickly and during off hours.
- Use water bottles in the refrigerator and frozen water bottles in the freezer to help ballast temperatures during power outages.
- Perform a daily inspection of storage units including checking the door seals and the current storage capacity.

As a best practice, educate all staff, including maintenance and custodial staff who may work on weekends or off hours, about never disconnecting the power to the vaccine storage units. Remember to

post warning signs that include contact information so that staff will know who to call in the event of an emergency. In terms of your power supply, it's important not to plug storage units into multioutlet power strips (also known as surge protectors), power outlets with built-in circuit switches or ground fault circuit interrupter's (GFCI's), which generally have a reset button, or into power outlets that can be activated by a wall switch.

# VACCINE TRANSPORT



This section of the training will review proper protocols and procedures for transport of publicly-funded vaccines.

## VACCINE TRANSPORT: INTRODUCTION

- Vaccine transport is the process by which vaccine is physically moved from one location to another.
- It's critical to have an up-to-date emergency plan with steps to take to protect your vaccine.
- **Limit vaccine transport to the extent possible.**
  - The cold chain is put at risk every time vaccine is moved.
- Do not transport vaccine that was previously exposed to a temperature excursion unless storage unit has failed.
- Common transport situations include:
  - Emergency transport (power failure, equipment malfunction)
  - Physical office relocation
  - Off site clinics – **Local Health Departments and approved Mobile Providers**



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Vaccine transport should be limited as every move puts the cold chain at risk. Do not transport vaccine that was previously exposed to a temperature excursion unless the storage unit has completely failed. It's critical to have an up-to-date emergency plan with steps to take to protect your vaccine. In any emergency event, activate your plan immediately.

Vaccines should only be transported in situations, such as:

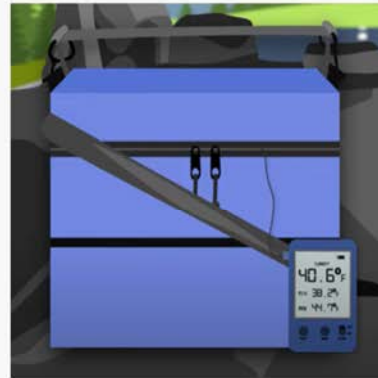
Emergencies due to power outages or in the event vaccine storage units malfunction and the provider does not have another suitable unit on site;

if the office relocates to a new address and the NYS VFC Program has been notified

And for Local Health Departments ONLY, who hold off site clinics. In this case, the local health department brings only the minimum number of doses they expect to use at the clinics to avoid unnecessary transport of additional vaccines.

## VACCINE TRANSPORT: GENERAL GUIDELINES

- Always include a digital data logger (DDL) with a current calibration certificate.
- Protect vaccine from drops, shocks, and vibration.
  - Secure transport container in vehicle.
  - If transporting individual vials or partial trays, use dunnage (padding material such as bubble wrap) to hold vials in place.
- Ensure the cold chain is always maintained.
- To the extent possible, **avoid**:
  - Leaving transport container in direct sunlight.
  - Leaving transport container unattended.
  - Opening transport container.



Always include a data logger with a current calibration certificate – during transport and inside of each temporary storage.  
Protect vaccine from drops, shocks, and vibration.  
Secure transport container in vehicle.  
If transporting individual vials or partial trays, use dunnage (padding material such as bubble wrap) to hold vials in place.  
Ensure the cold chain is maintained at all times  
To the extent possible, avoid:  
Leaving transport container in direct sunlight.  
Leaving transport container unattended.  
Opening transport container.

## VACCINE TRANSPORT: GENERAL GUIDELINES

- If using a personal or company vehicle:
  - Bring vehicle to a comfortable temperature before placing transport container inside.
  - **Never place transport container in the trunk.**
- Plan route to minimize transport time.
- In general, transport time **or** transport time + clinic workday (**Local Health Departments and approved Mobile Clinics**) should be 8 hours maximum.



If using a personal or company vehicle:

Bring vehicle to a comfortable temperature before placing transport container inside.

Never place transport container in the trunk.

Plan route to minimize transport time.

In general, transport time **or** transport time + clinic workday (local health departments and approved mobile clinics **ONLY**) should be 8 hours maximum.

## DIGITAL DATA LOGGERS (DDLs)

Each vaccine transport container must be monitored with a DDL that:

- Is designed for the appropriate temperature range (refrigerated, frozen, ultra-cold).
- Has a logging interval that can be programmed to measure and record temperatures at least every 30 minutes.
- Allows for download of complete temperature data via computer software or online interface.
- Has a current and valid certificate of calibration testing to uncertainty of  $\pm 0.5^{\circ}\text{C}$  ( $\pm 1^{\circ}\text{F}$ ).
- Detachable probe in a bottle filled with a thermal buffer, like glycol, which more closely reflects vaccine temperature.



Each vaccine transport container must be monitored with a digital data logger or DDL that:

Is designed for the appropriate temperature range (refrigerated, frozen, ultra-cold).

Has a logging interval that can be programmed to measure and record temperatures at least every 30 minutes.

Allows for download of complete temperature data via computer software or online interface.

Has a current and valid certificate of calibration testing to uncertainty of  $\pm 0.5^{\circ}\text{C}$  ( $\pm 1^{\circ}\text{F}$ ).

- Detachable buffered probe (if appropriate).

Recommended DDL features include:

Alarm for out-of-range temperatures.

Low-battery indicator.

Current, minimum and maximum temperature display.

## DDL SETUP

- Condition buffered probe in refrigerator/freezer **prior to transport (this may take 2-5 hours)**.
  - It can be helpful to keep the buffered probes to your back-up DDLs in refrigerator and freezer so that they are conditioned and ready to use in an emergency.
- When packing DDL for vaccine transport:
  - Place buffered probe as close as possible to vaccines in transport container.
  - Do not place buffered probe directly next to ice packs or other coolants.
  - Attach temperature display to the outer lid of the transport container.



Condition the buffered probes in the storage units prior to transport. This may take a few hours.

It is a good idea to keep the buffered probes to your back-up DDLs in refrigerator and freezer so that they are conditioned and ready to use in an emergency)

When packing DDL for vaccine transport:

Place buffered probe as close as possible to vaccines in transport container.

Do not place buffered probe directly next to ice packs or other coolants.

Attach temperature display to the outer lid of the transport container.

## PORTABLE REFRIGERATOR, FREEZER, OR ULT FREEZER

- Portable Units are a type of **powered** unit specifically designed for vaccine transport.
- Maintains desired temperatures via power source and built-in thermostat; **packout (cooling or insulating material) is not required.**
  - Some units are also “qualified” to maintain temperatures for a set amount of time if power is lost.
  - Check manufacturer documentation for any packing or usage instructions specific to the unit model.
- Acceptable for **emergency or non-emergency transport.**



Portable units are specifically designed for vaccine transport. They maintain temperatures via a power source and can be plugged into a regular outlet in the office and into a vehicle’s auxiliary power outlet to maintain proper vaccine temperatures during transport.

The pros of this type of unit are:

Packout is not required

Some units are qualified to maintain temperatures for a set amount of time if power is lost.

Potential cons are that some units are very heavy and therefore difficult to lift/move. Be sure to check manufacturer documentation for details on weight and packing usage.

## QUALIFIED CONTAINER AND PACKOUT

- Qualified container and packout is a type of **passive** (non-powered) unit and supplies specifically designed for vaccine transport.
- **Packout is required.**
- “Qualified” through laboratory testing to ensure container and packout can maintain temperatures for a set amount of time.
- Check manufacturer documentation for any usage or packing instructions specific to the unit model.
- Acceptable for **emergency or non-emergency transport.**



Another option for emergency vaccine transport are qualified containers and packouts. These units are non-powered and specifically designed for vaccine transport. They require insulating materials and can maintain temperatures for a set amount of time. Check manufacturer documentation for any usage or packing instructions specific to the unit model.

## HARD-SIDED/STYROFOAM COOLER OR MANUFACTURER'S SHIPPING CONTAINER

- These types of **passive** (non-powered) unit is **not** specifically-designed for vaccine transport and are acceptable for **emergency transport only**.
- May include:
  - Styrofoam container or cooler.
  - Hard-sided insulated cooler.
  - Manufacturer's original shipping container – last resort **only**.
- Walls must be at least 2 inches thick.
- Never use soft-sided food or beverage coolers.
- Packout is required
  - CDC conditioned water bottle transport system is recommended.
  - Include insulating material (insulating cushioning material, corrugated cardboard)
  - Do **not** use frozen gel packs or coolant packs from original vaccine shipments.
  - Do **not** use dry ice for "standard" frozen transport (-50°C to -15°C)\*.



\*Always refer to the vaccine product insert for specific storage and handling guidance, as some vaccines have a more limited temperature range. For example, the Mpox vaccine may only be stored between -15°C and -25°C.



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While the previous options discussed may be used for emergency and non-emergency transport, the following can be used for emergency transport only. They are non-powered units such as styrofoam coolers, hard sided, insulated coolers, or as a last resort, manufacturer's original shipping containers.

Walls must be at least 2 inches thick.

Never use soft-sided food or beverage coolers.

Packout is required.

CDC conditioned water bottle transport system is recommended.

Include insulating material

NEVER use frozen gel packs or coolant packs from original vaccine shipments as this can freeze and damage refrigerated vaccines

NEVER use dry ice for "standard" frozen transport (-50°C to -15°C).

See link in this slide for CDC's emergency vaccine transport guide. This is also in the resource document included with this training.

# CDC WATER BOTTLE TRANSPORT SYSTEM

## Keep emergency packing supplies on hand, including:

- Enough frozen water bottles for 2 layers inside cooler:
  - **Conditioned\*** water bottles for **refrigerated transport**.
  - **Frozen** water bottles for **frozen transport**.
  - **16.9 oz.** water bottles for **medium/large coolers**.
  - **8 oz.** water bottles for **small coolers**.
  - Do not use water bottles with a “flat” shape or opaque walls.
- Enough cushioned insulating materials for 2 layers inside cooler.
  - Use bubble wrap, packing foam, or Styrofoam sheets.
  - Do not use “loose” materials such as packing peanuts.
  - Enough corrugated cardboard for 2 layers inside cooler.



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\*See [CDC resource document](#) for complete instructions

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The CDC Water Bottle Transport System is recommended for use with the previously mentioned Styrofoam and hard sided coolers. Materials required for this system include:

Enough conditioned/frozen water bottles for 2 layers inside cooler:

Conditioned\* water bottles for refrigerated transport.

Frozen water bottles for frozen transport.

16.9 oz. water bottles for medium/large coolers.

8 oz. water bottles for small coolers.

Do not use water bottles with a “flat” shape or opaque walls.

Enough cushioned insulating materials for 2 layers inside cooler.

Use bubble wrap, packing foam, or Styrofoam sheets for a layer above and below vaccines at least 1 inch thick.

Do not use “loose” materials such as packing peanuts.

Enough corrugated cardboard for 2 layers inside cooler. Use two pieces of corrugated cardboard to fit interior dimensions of cooler to be placed between insulating cushioning material and conditioned frozen water bottles.

Please note that “conditioned” water bottles start off as frozen water

bottles, which are “conditioned” by placing them in a sink of lukewarm water until you see a layer of water forming near the surface of the bottle.

## REQUIRED DOCUMENTATION

- **Prior** to transporting vaccine, notify/obtain approval from NYS Vaccine Program
  - **Not** required for emergency transports.
  - Email [nyvfc@health.ny.gov](mailto:nyvfc@health.ny.gov) or call 1-800-543-7468 for assistance.
- **After** transport is finished, submit tracking sheet(s) to NYS VFC Program.
  - Download and fill out the [Vaccine Tracking Sheet](#).
  - Email completed tracking sheet to [nyvfc@health.ny.gov](mailto:nyvfc@health.ny.gov).
- Additional documentation may be necessary:
  - [Temperature Excursion Report](#) (if needed)
  - [Paper temperature log](#) (**Local Health Departments and approved Mobile Providers for off-site/satellite clinic**).
  - NYSIIS inventory updates (for vaccine transfer).
- Must retain copies of all documentation for at least 3 years



If the office is moving to a new address, NYS VFC program must be notified in advance. For emergency transports, prior approval is not required.

After transport is complete, providers must complete the Vaccine Transport Tracking Sheet to track transport of NYS VFC vaccine. Submit completed sheet via email or fax to the Vaccine Program. If an excursion occurs during transport, a temperature excursion form must be submitted. For local health departments transporting to off site clinics, and approved mobile clinics, a paper temperature log must be used throughout the clinic to document temps about once per hour. Copies of all documentation must be maintained for a minimum of 3 years.

**THANK YOU!**



[nyvfc@health.ny.gov](mailto:nyvfc@health.ny.gov)



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Thank you for your participation in this training on monitoring vaccine storage temperatures, excursion reporting, and vaccine transport . As always, any questions can be sent to [nyvfc@health.ny.gov](mailto:nyvfc@health.ny.gov).