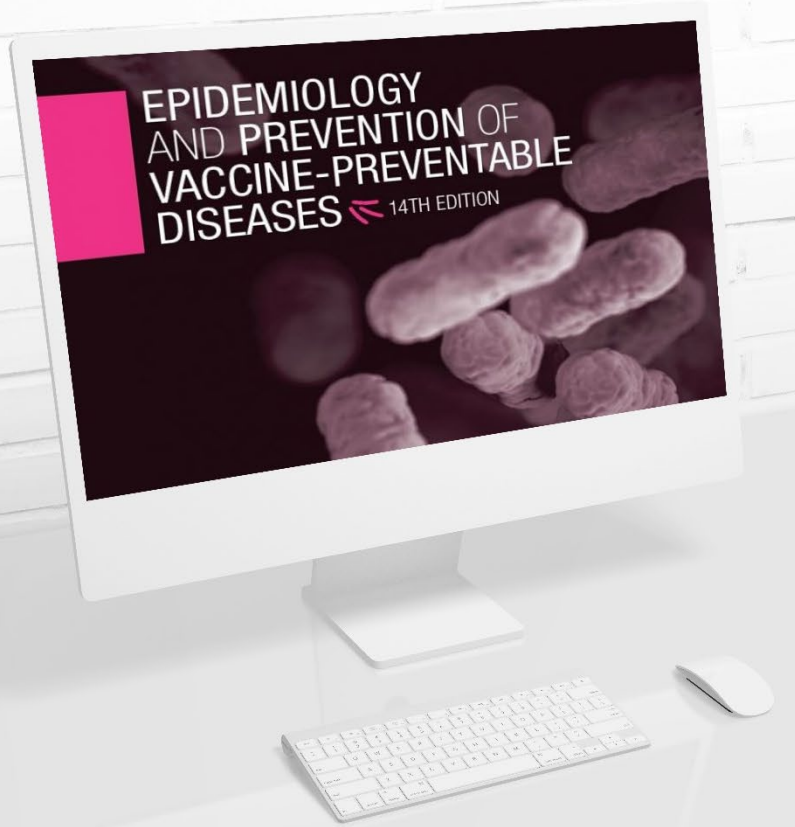
National Center for Immunization and Respiratory Diseases

Vaccine Storage and Handling



Pink Book Web-on-Demand Series

July 18, 2024

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Nurse Educator
Immunization Services Division

Learning Objectives

- Describe the fundamental principles of the immune response.
- Describe immunization best practices.
- Describe an emerging immunization issue.
- For each vaccine-preventable disease, identify those for whom routine immunization is recommended.
- For each vaccine-preventable disease, describe characteristics of the vaccine used to prevent the disease.
- Locate current immunization resources to increase knowledge of team's role in program implementation for improved team performance.

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1

Vaccine Storage and Handling Overview

Impact of Improper Vaccine Storage and Handling

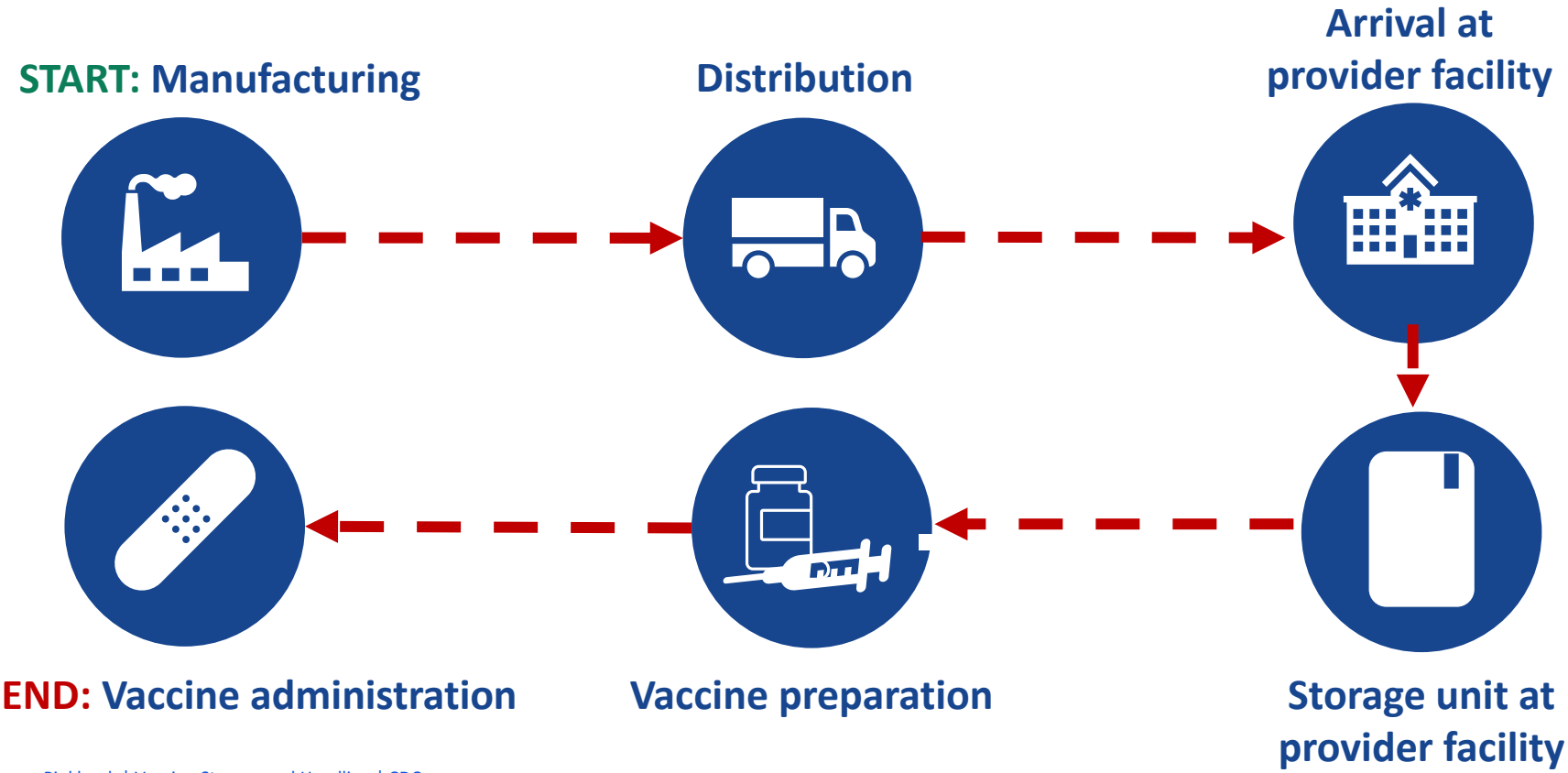
- **Improper vaccine storage and handling can result in:**
  - Vaccines that are not viable
  - Unnecessary revaccination
  - Cost to facility, staff, and patients
  - Diminished trust in your practice and staff…and in vaccinations

Vaccine Storage and Handling Toolkit | CDC

2

Vaccine Cold Chain

Vaccine Cold Chain



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Why does cold chain matter?

- **Vaccine potency reduced with improper storage:**
  - Overexposure to heat
  - Freezing temperatures
  - Exposure to light
- **Once potency is lost, it cannot be restored.**

What Is Needed to Maintain a Cold Chain?

- You, well-trained staff
- Reliable storage and temperature monitoring equipment
- Accurate vaccine inventory management and procedures

Vaccine Storage and Handling Toolkit | CDC

3

Staff and Training

Vaccine Coordinator Recommendations

- **Primary coordinator**
  - Responsible for ensuring all vaccines are stored and handled properly
  - Expert on routine and emergency standard operating procedures (SOPs)
- **Alternate coordinator**
  - Expert that can assist primary and fulfill duties in their absence
- **All other staff**
  - May be trained to complete duties

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Primary and Alternate Vaccine Coordinator Duties

- Order vaccines
- Oversee proper receipt and storage of vaccine deliveries
- Maintain vaccine inventory information
- Organize and monitor vaccines within storage units
- Rotate stock and remove expired vaccine from storage units
- Set up temperature monitoring devices
- Check and record minimum/ maximum temperatures daily
- Respond to temperature excursions (out-of-range temperatures) and equipment failures
- Oversee proper vaccine transport (when necessary)
- Oversee emergency preparations
- Create and update storage and handling SOPs

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Storage and Handling SOPs

- Facilities should develop and maintain clearly written, detailed, and up-to-date storage and handling SOPs for three major areas:

Routine storage and handling

Emergency vaccine storage, handling, and transport

General information

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Vaccine Storage and Handling Toolkit | CDC

Staff Training

- Complete training:
  - As part of employee orientation
  - Annually as a refresher
  - When new vaccines are added
  - When recommendations are updated

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Vaccine Storage and Handling Toolkit | CDC

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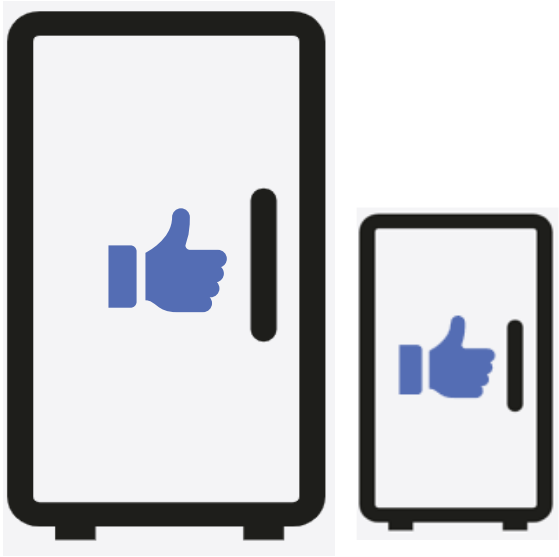
Vaccine Storage and Temperature Monitoring Equipment

Equipment: Vaccine Storage Units (1)

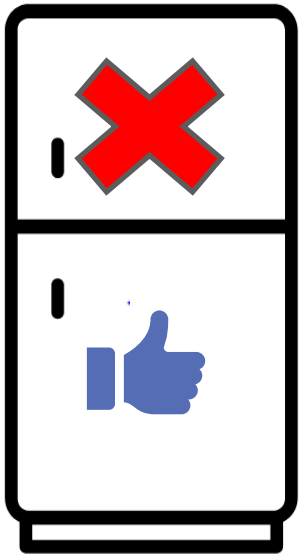
Preferred: Purpose-built or pharmaceutical-grade units

- Large, compact, or combo

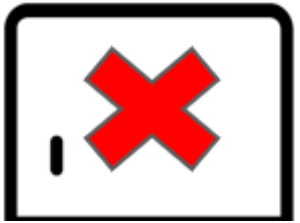


Acceptable alternative: Household-grade units

- **Do not use freezer**



Never use a dorm-style unit!!



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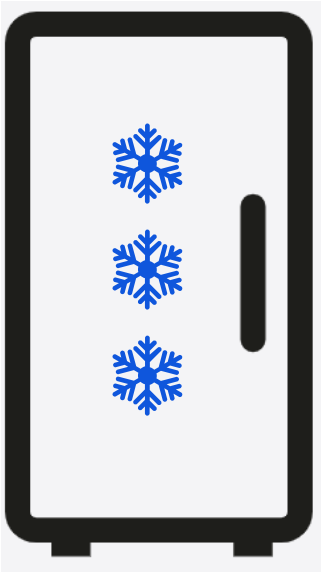
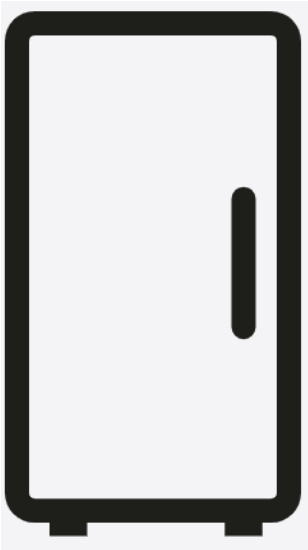
Equipment: Vaccine Storage Units (2)



Ultra-cold freezer
Between
-90°C and -60°C
(-130°F and -76°F)

Standard freezer
Between
-50°C and -15°C
(-58°F and +5°F)



Refrigerator
Between
2°C and 8°C
(36°F and 46°F)

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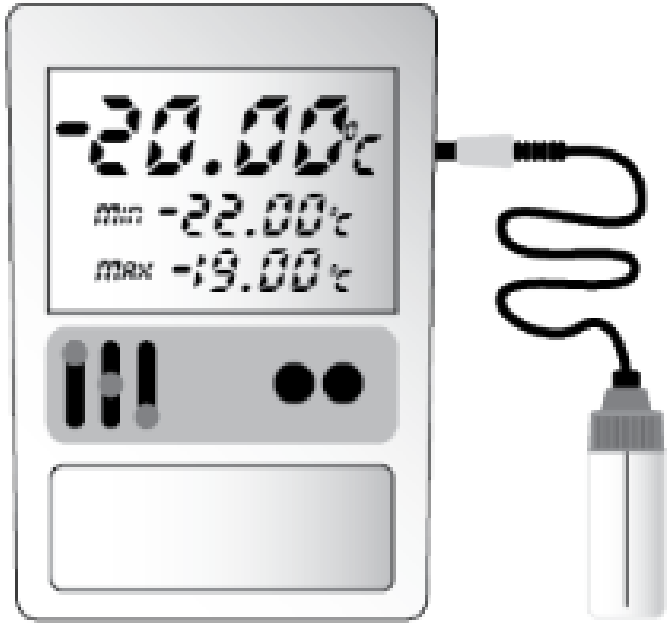
Equipment: Temperature Monitoring Devices (TMDs)



- **Recommended** – A digital data logger (DDL) with these features:
  - A detachable buffered probe
  - Able to measure minimum and maximum temperatures
  - Uncertainty of +/-0.5°C (+/-1°F)
- Other features
  - Alarm
  - Low battery indicator
  - At least 30-minute reading rate

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Certificate of Calibration

- DDLs must be calibrated every two to three years, or per the manufacturer's suggested timeline.
- Certificate should include:
  - Model/device name or number
  - Serial number
  - Date of calibration
  - Confirmation that the instrument passed testing
  - Recommended uncertainty of +/-0.5°C (+/-1°F) or less

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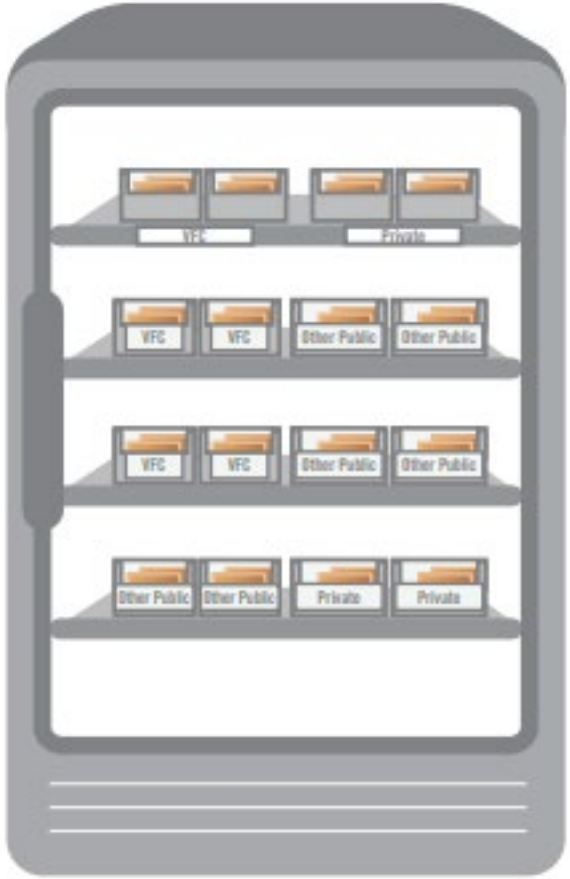
Vaccine Organization and Storage

Storage Unit Best Practices (1)

- Store in the original packaging with lids closed in separate containers.
- Place earliest expiration dates in the front.
- Label shelves and vaccine containers.
  - Vaccine Label Examples (cdc.gov)
- Store vaccines with similar names or packaging on separate shelves or storage units.
- Avoid danger zones.
- Use water bottles appropriately.
- Only store vaccines, diluents, and water bottles.



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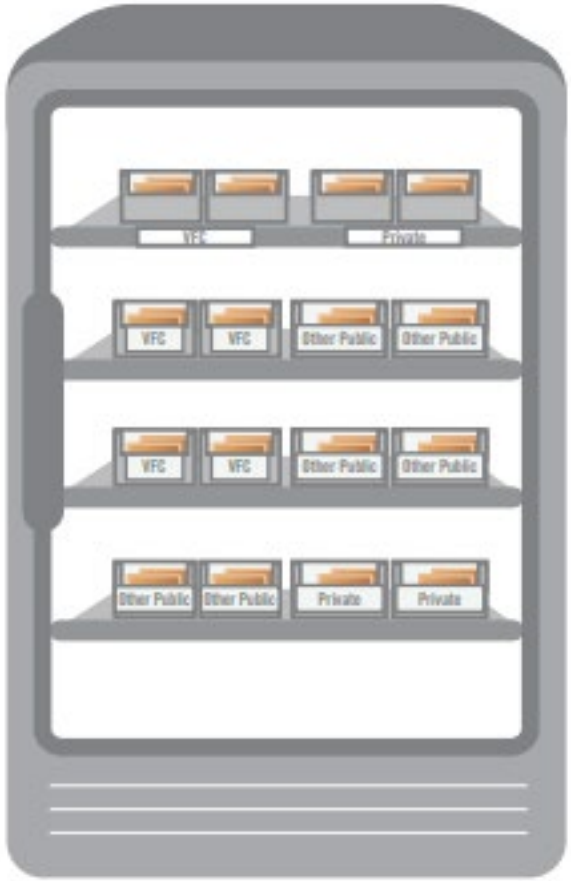
Storage Unit Best Practices (2)

- **Store in the original packaging with lids closed in separate containers.**
  - Allow 2 to 3 inches between vaccine containers and the storage unit walls.
  - Store diluent with the corresponding refrigerated vaccine, whenever possible.
- **Place earliest expiration dates in the front.**



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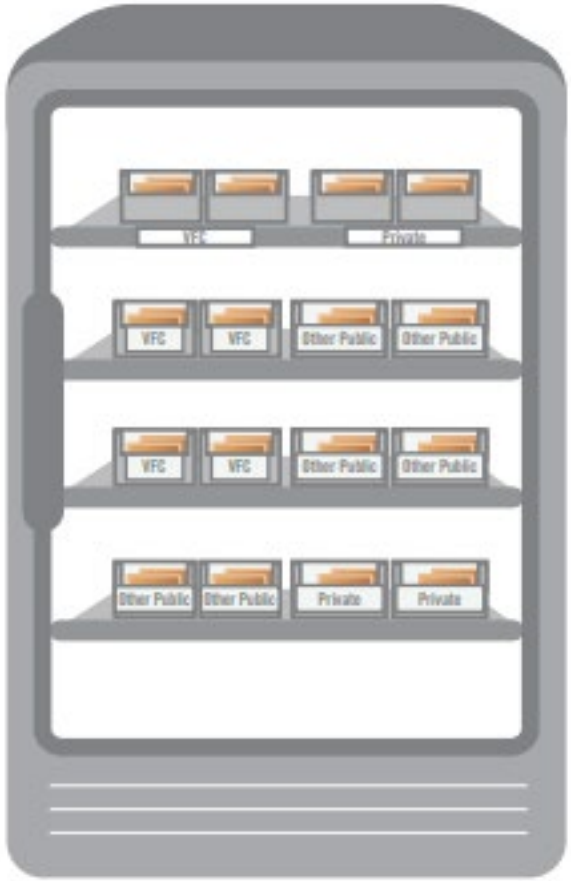
Storage Unit Best Practices (3)

- Store in the original packaging with lids closed in separate containers.
- Place earliest expiration dates in the front.
- **Label shelves and vaccine containers.**
  - **Vaccine Label Examples (cdc.gov)**
- **Store vaccines with similar names or packaging on separate shelves or storage units.**
- Avoid danger zones.
- Use water bottles appropriately.
- Only store vaccines, diluents, and water bottles.



Storage Unit Best Practices (4)

- Store in the original packaging with lids closed in separate containers.
- Place earliest expiration dates in the front.
- Label shelves and vaccine containers.
  - Vaccine Label Examples (cdc.gov)
- Store vaccines with similar names or packaging on separate shelves or storage units.
- **Avoid danger zones.**
- **Use water bottles appropriately.**
- **Store only vaccines, diluents, and water bottles.**

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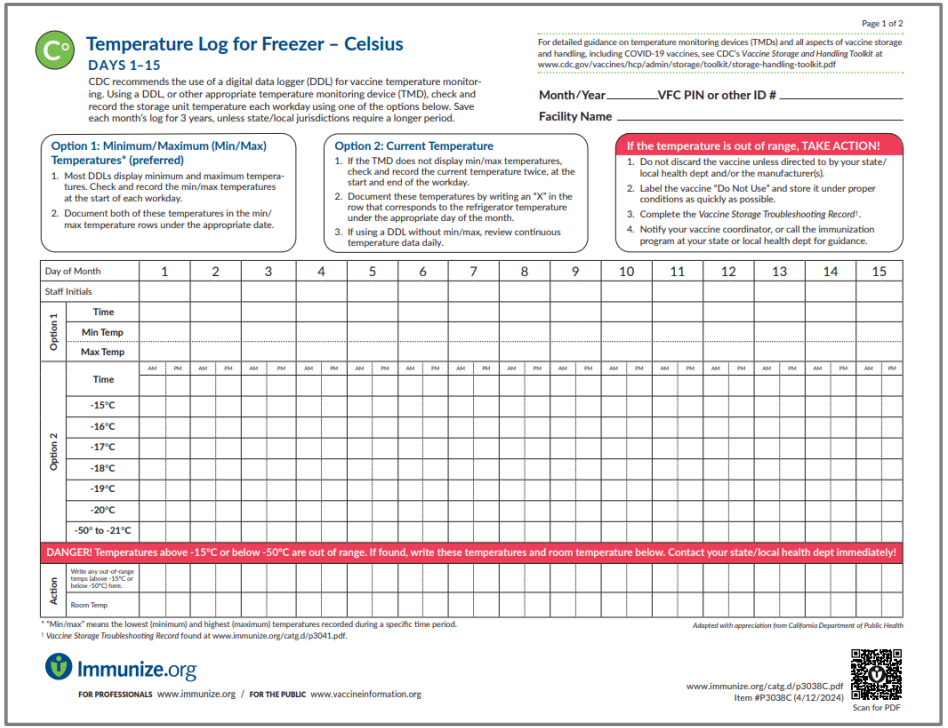
6

Vaccine Temperature Management

Monitoring Storage Unit Temperatures

- **Preferred: Check and record minimum and maximum temperatures once each workday, preferably in the morning.**
  - If your TMD displays current temperature only, check and record temperatures two times a day, at the start and end of the workday.



Page 1 of 2

Temperature Log for Freezer – Celsius

DAYS 1–15

CDC recommends the use of a digital data logger (DDL) for vaccine temperature monitoring. Using a DDL, or other appropriate temperature monitoring device (TMD), check and record the storage unit temperature each workday using one of the options below. Save each month's log for 3 years, unless state/local jurisdictions require a longer period.

For detailed guidance on temperature monitoring devices (TMDs) and all aspects of vaccine storage and handling, including COVID-19 vaccines, see CDC's *Vaccine Storage and Handling Toolkit* at www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf

Month/Year_____VFC PIN or other ID # _____

Facility Name _____

Option 1: Minimum/Maximum (Min/Max) Temperatures* (preferred)

1. Most DDLs display minimum and maximum temperatures. Check and record the min/max temperatures at the start of each workday.
2. Document both of these temperatures in the min/max temperature rows under the appropriate date.

Option 2: Current Temperature

1. If the TMD does not display min/max temperatures, check and record the current temperature twice, at the start and end of the workday.
2. Document these temperatures by writing an "X" in the row that corresponds to the refrigerator temperature under the appropriate day of the month.
3. If using a DDL without min/max, review continuous temperature data daily.

If the temperature is out of range, TAKE ACTION!

1. Do not discard the vaccine unless directed to by your state/local health dept and/or the manufacturer(s).
2. Label the vaccine "Do Not Use" and store it under proper conditions as quickly as possible.
3. Complete the *Vaccine Storage Troubleshooting Record*†.
4. Notify your vaccine coordinator, or call the immunization program at your state or local health dept for guidance.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Day of Month																
Staff Initials																
Option 1	Time															
	Min Temp															
	Max Temp															
Option 2	Time	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
	-15°C															
	-16°C															
	-17°C															
	-18°C															
	-19°C															
	-20°C															
	-50° to -21°C															
DANGER! Temperatures above -15°C or below -50°C are out of range. If found, write these temperatures and room temperature below. Contact your state/local health dept immediately!																
Action	Write any out-of-range temps (above -15°C or below -50°C) here.															
	Room Temp															

* "Min/max" means the lowest (minimum) and highest (maximum) temperatures recorded during a specific time period.

† *Vaccine Storage Troubleshooting Record* found at www.immunize.org/catg.d/p3041.pdf.

Adapted with appreciation from California Department of Public Health

Immunize.org

FOR PROFESSIONALS www.immunize.org / FOR THE PUBLIC www.vaccineinformation.org

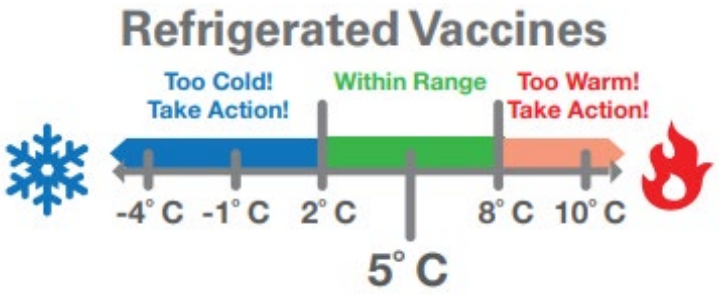
www.immunize.org/catg.d/p3038C.pdf
Item #P3038C (4/12/2024)

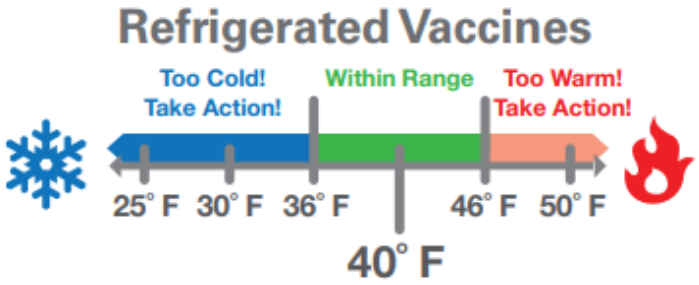
Scan for PDF

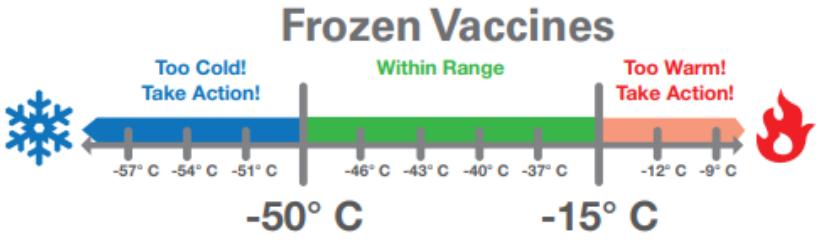
[Pinkbook | Vaccine Storage and Handling | CDC]

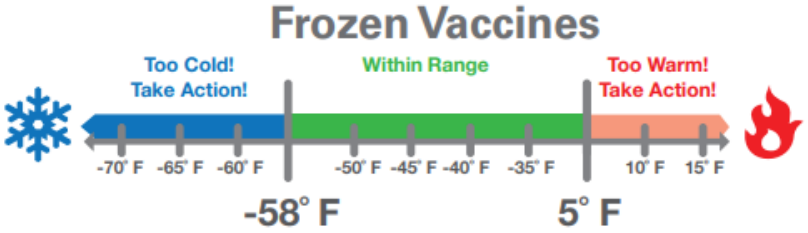
[Temperature Logs - Handouts for Healthcare Professionals (immunize.org)]

Recommended Storage Unit Temperature Ranges





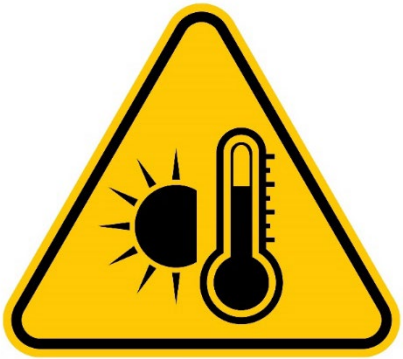




[Vaccine Storage and Handling Resources | CDC]

Temperature Excursion

- Any reading outside the recommended ranges in the package insert
- Requires immediate action
- Manufacturers determine viability
- Refer to the Storage and Handling Toolkit for detailed guidance



Vaccine Storage and Handling Toolkit | CDC

Temperature Excursion Recommendations

1. Notify the primary/alternate vaccine coordinator or supervisor immediately.
2. Notify staff by labeling exposed vaccines “DO NOT USE” and storing at appropriate temperatures; **do not discard exposed vaccines**.
3. Document the event.
4. Implement your facility SOPs to adjust unit temperature to the appropriate range.
5. Contact your immunization program and/or vaccine manufacturer(s) for further guidance.
6. Complete documentation of the event, including actions taken and results.

Pinkbook | Vaccine Storage and Handling | CDC

Knowledge Check

Fill in the blanks.

Read and record the _____ and _____ temperatures of the vaccine storage unit _____ each day.

Answer

Fill in the blanks.

Read and record the minimum and maximum temperatures of the vaccine storage unit once each day.

7

Vaccine Inventory Management

Unpacking Vaccine Deliveries

Maintain cold chain by immediately checking and storing vaccines upon arrival:

1. Unpack
2. Examine order and document:
   - Damage
   - Receipt of order
   - Expiration dates
   - Temperature on monitoring device or cold chain monitor (CCM)
3. Immediately store at the recommended temperature.
4. Follow temperature excursion guidance if CCM temperature is out of range.

Vaccine Storage and Handling Toolkit | CDC

Inventory Recommendations

- **Use a stock record to account for every vaccine dose from delivery to use.**
- **Rotate stock so that vaccines that expire first are used first.**
  - Rotate stock weekly and when there are deliveries.
  - Remove expired stock and handle per policy.
- **Avoid overstocking vaccine supply.**
  - Check stock and anticipate upcoming patient needs (flu season, back to school, community event, etc.).

Vaccine Storage and Handling Toolkit | CDC

Vaccine Disposal

- **Unused, unopened, expired, or compromised vaccine may be returned for credit.**
  - Open or broken vials and activated manufacturer-prefilled syringes usually cannot be returned.
- **Most empty vaccine vials do not require a special disposal procedure.**
- **Medical waste disposal requirements vary from state to state.**

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8

Vaccine Preparation

Vaccine Preparation Best Practices

- **Prepare vaccines in a designated area, free from distractions.**
- **Prepare vaccines only when you are ready to administer them.**
  - Activate manufacturer-filled syringes (MFSs) syringes just before administration.
- **Only administer vaccines you have prepared.**

Pinkbook | Vaccine Storage and Handling | CDC

Pre-Drawing Vaccines

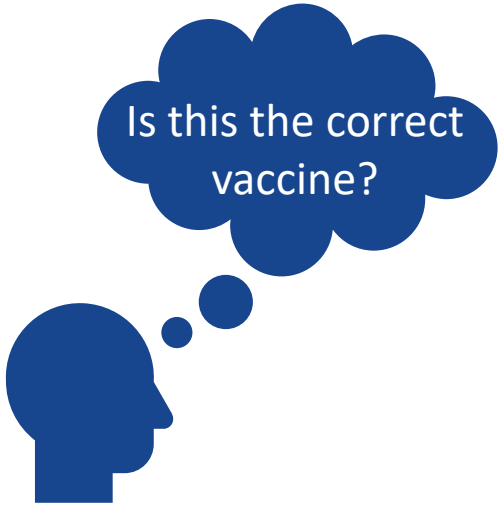
- **Best practice: Use manufacturer-filled syringes whenever possible.**
  - **Pre-drawing vaccine doses is *not recommended*.**
    - General-use syringes are designed for immediate administration, not storage.
    - Increased risk for vaccination errors if syringes are not appropriately labeled or administered by another person
    - Vaccine wastage occurs when too many doses are pre-drawn or stored improperly.

Pinkbook | Vaccine Storage and Handling | CDC

Pre-Drawn Vaccine Recommendations for Large Events

1. Set up a separate administration station for each vaccine type.
2. Draw up vaccines only when you are ready for administration.
3. Label each pre-drawn syringe with:
   - the vaccine name and dosage,
   - the beyond-use date and time,
   - lot number,
   - the preparer's initials, and
   - any other pertinent information, such as age range
4. Draw up no more than one multidose vial (MDV) or 10 doses at one time.
5. Monitor patient flow to avoid drawing up unnecessary doses.
6. Store pre-drawn vaccines at the manufacturer-recommended temperatures.
7. Discard any remaining vaccine in pre-drawn syringes at the end of the workday.

Triple-Check Before Vaccine Preparation



Label

Expiration Date

Beyond-Use Date (BUD)

Pinkbook: Vaccine Administration | CDC

9

Expiration Date

Expiration Date

- The expiration date is the final day that the vaccine can be administered.
- Determined by the manufacturer
- Marked on the vaccine vial and original packaging
- All vaccine products have an expiration date, including diluents.
- **Never administer vaccines after the expiration date.**

Expiration Dates - Questions and Answers | FDA
Vaccine Storage and Handling Toolkit | CDC

Where to Find the Expiration Date

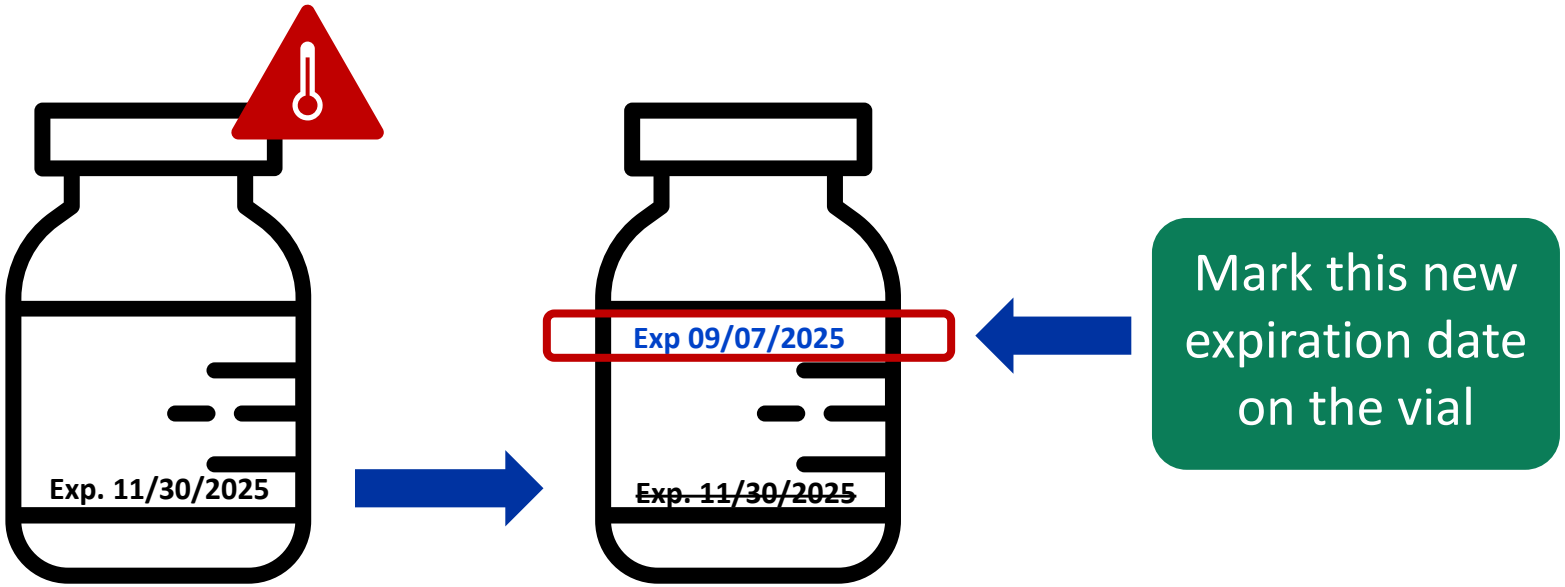
Month, day, and year of expiration

Month and year of expiration

QR Code, website, or phone number

Storing and Handling Vaccines: Expiration Date, Beyond-Use Date, and Beyond-Use Time

Expiration Date Changes: Shortened Expiration



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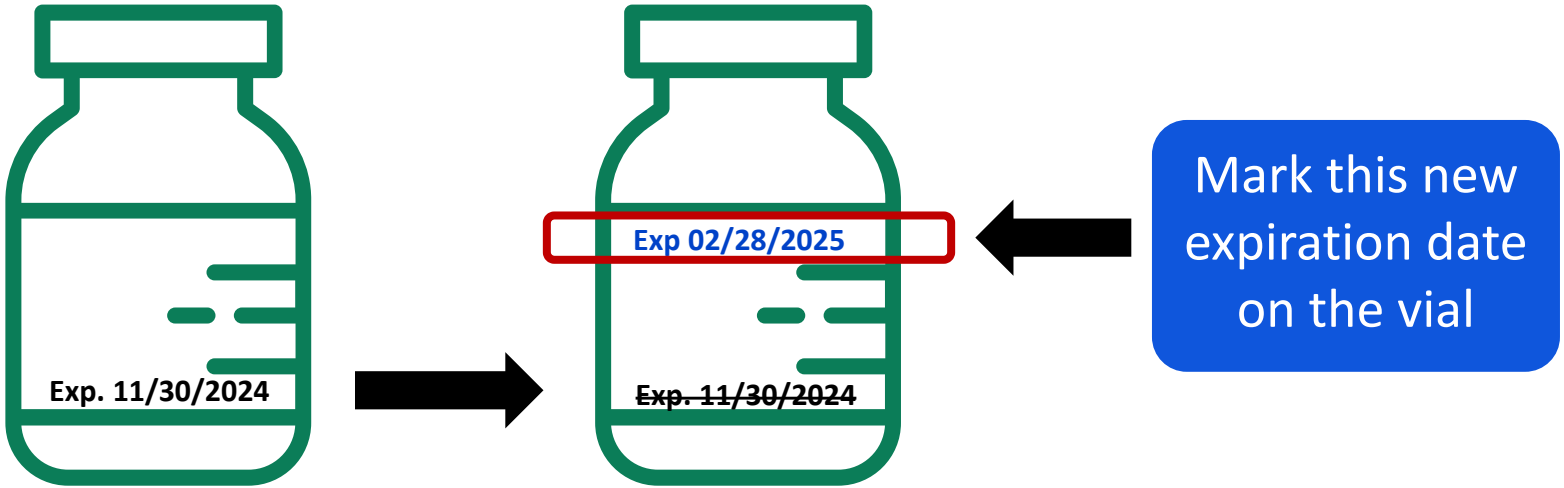
Expiration Date Changes: Extended Expiration



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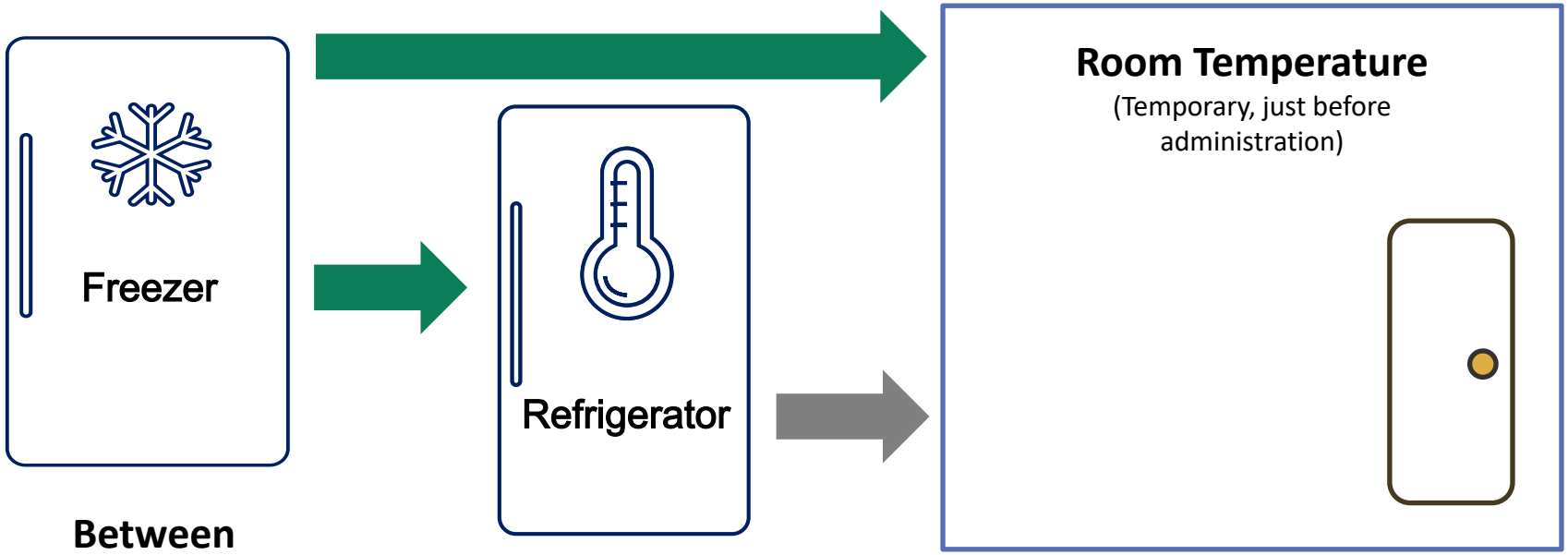
Beyond-Use Date/Time

What is a Beyond-Use Date (BUD)?

- Date/time generated when a product is transitioned between storage states or altered for patient use
- Varies by product and type of transition
- Calculated by the provider using manufacturer's guidance
- Replaces but does not extend the expiration; always use the earlier date
- Only some vaccines have a BUD.
- **Never administer vaccines after the BUD.**

Storing and Handling Vaccines: Expiration Date, Beyond-Use Date, and Beyond-Use Time

BUD and Transition Between Temperatures



Between
-50°C and -15°C
(-58°F and +5°F)

Between
2°C and 8°C
(36°F and 46°F)

Between
20°C and 25°C
(68°F and 77°F)

Storing and Handling Vaccines: Expiration Date, Beyond-Use Date, and Beyond-Use Time

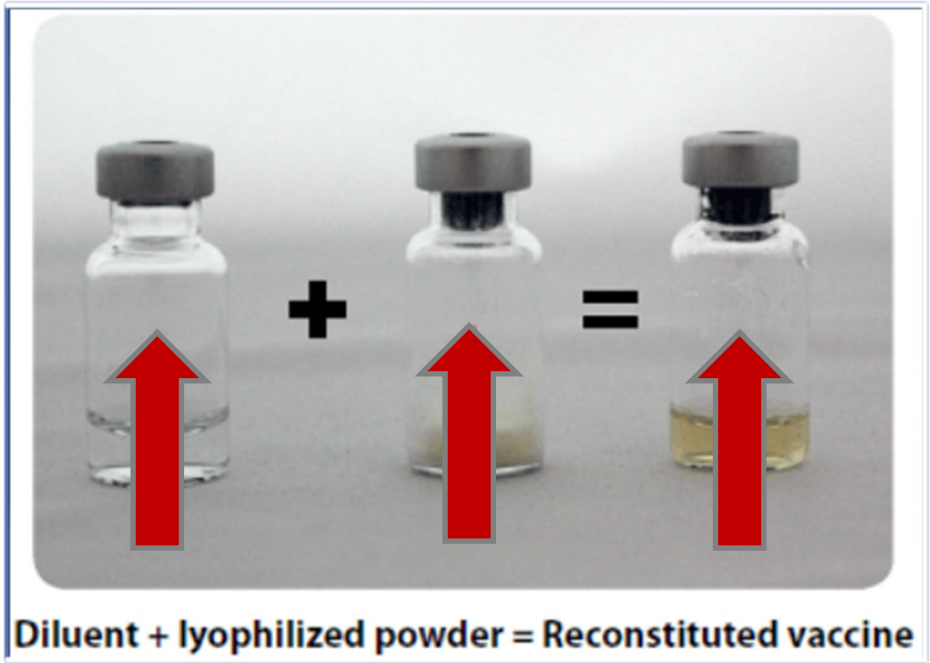
BUD and Vaccine in a Multidose Vial

- Some multidose vials (MDVs) have a specified time frame they should be used after the vial is first punctured.
  - The BUD can **vary from hours to days.**
- Some MDVs have a specific maximum number of doses that can be withdrawn or punctures to the vial stopper.
  - Discard the vial after reaching the maximum number of doses or punctures.

Storing and Handling Vaccines: Expiration Date, Beyond-Use Date, and Beyond-Use Time

Reconstituted Vaccines

- Once mixed with diluent, vaccines have a beyond-use time.
- The beyond-use time can vary from minutes to hours.
- Carefully check the package insert to determine the beyond-use time.
  - Immunize.org has a resource on how to use vaccines with diluents.



www.immunize.org/catg.d/p3040.pdf

How is the BUD Calculated?

Day 0: First puncture

Day 28: Mark this BUD on vial

Knowledge Check

Fill in the blanks.

The_____ determines the expiration date and the _____ calculates the BUD.

Answer

Fill in the blanks.

The manufacturer determines the expiration date and the health care provider calculates the BUD.

11

Vaccine Transport and Handling

Transport Situations

- Off-site clinics
- Satellite facilities
- Relocation of stock
- Emergencies

Pinkbook | Vaccine Storage and Handling | CDC

Transport Systems

Container Description	Emergency Transport	Transport to Off-site Clinic or Satellite Facility or Relocation of Stock
Portable Vaccine Refrigerator or Freezer	Yes	Yes
Qualified Container and Packout	Yes	Yes
Conditioned Water Bottle Transport System	Yes	No
Manufacturer's Original Shipping Container	Yes (last resort)	No
Food/Beverage Coolers	No	No

Pinkbook | Vaccine Storage and Handling | CDC

Packing Vaccines for Transport during Emergencies | CDC

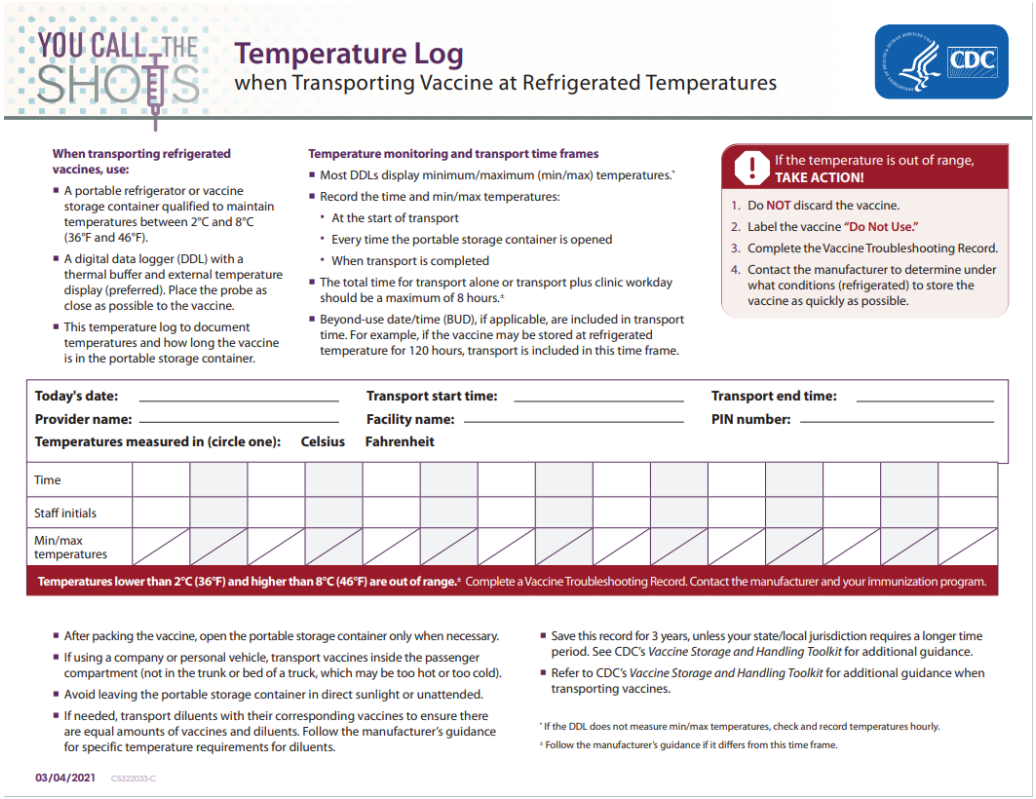
Transport Best Practices

- Include emergency transport guidance in storage and handling SOPs.
- Avoid sunlight and extremes of temperatures.
- Transport only the amount of vaccine needed for the workday.
- Transport diluents with their corresponding vaccines.
- The total time for transport alone or transport plus clinic day is a maximum of 8 hours.
- Promptly move vaccines into storage unit upon arrival.

Pinkbook | Vaccine Storage and Handling | CDC

Temperature Monitoring During Transport

- For any type of transport:
  - Record min/max temps at the beginning of transport and the destination storage unit.
  - Place buffered probe with vaccines.
  - Keep DDL display on top of transport system.
  - Keep the container closed.



YOU CALL THE SHOTS

Temperature Log
when Transporting Vaccine at Refrigerated Temperatures

CDC

When transporting refrigerated vaccines, use:

- A portable refrigerator or vaccine storage container qualified to maintain temperatures between 2°C and 8°C (36°F and 46°F).
- A digital data logger (DDL) with a thermal buffer and external temperature display (preferred). Place the probe as close as possible to the vaccine.
- This temperature log to document temperatures and how long the vaccine is in the portable storage container.

Temperature monitoring and transport time frames

- Most DDLs display minimum/maximum (min/max) temperatures.*
- Record the time and min/max temperatures:
  - At the start of transport
  - Every time the portable storage container is opened
  - When transport is completed
- The total time for transport alone or transport plus clinic workday should be a maximum of 8 hours.†
- Beyond-use date/time (BUD), if applicable, are included in transport time. For example, if the vaccine may be stored at refrigerated temperature for 120 hours, transport is included in this time frame.

If the temperature is out of range, TAKE ACTION!

1. Do **NOT** discard the vaccine.
2. Label the vaccine **"Do Not Use."**
3. Complete the Vaccine Troubleshooting Record.
4. Contact the manufacturer to determine under what conditions (refrigerated) to store the vaccine as quickly as possible.

Today's date: _____ **Transport start time:** _____ **Transport end time:** _____

Provider name: _____ **Facility name:** _____ **PIN number:** _____

Temperatures measured in (circle one): **Celsius** **Fahrenheit**

Time															
Staff initials															
Min/max temperatures															

Temperatures lower than 2°C (36°F) and higher than 8°C (46°F) are out of range.† Complete a Vaccine Troubleshooting Record. Contact the manufacturer and your immunization program.

- After packing the vaccine, open the portable storage container only when necessary.
- If using a company or personal vehicle, transport vaccines inside the passenger compartment (not in the trunk or bed of a truck, which may be too hot or too cold).
- Avoid leaving the portable storage container in direct sunlight or unattended.
- If needed, transport diluents with their corresponding vaccines to ensure there are equal amounts of vaccines and diluents. Follow the manufacturer's guidance for specific temperature requirements for diluents.
- Save this record for 3 years, unless your state/local jurisdiction requires a longer time period. See CDC's *Vaccine Storage and Handling Toolkit* for additional guidance.
- Refer to CDC's *Vaccine Storage and Handling Toolkit* for additional guidance when transporting vaccines.

* If the DDL does not measure min/max temperatures, check and record temperatures hourly.

† Follow the manufacturer's guidance if it differs from this time frame.

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[Pinkbook | Vaccine Storage and Handling | CDC]

[Temperature Log when Transporting Vaccine at Refrigerated Temperatures]

Emergency Backup Plan

- Suspend vaccination activities if emergency can be anticipated.
- Establish an agreement with an alternative storage facility.
  - Even if you have an on-site generator
- Transfer vaccine to backup storage units.

Pinkbook | Vaccine Storage and Handling | CDC

Emergency Transport Options

- Keep storage units and containers closed and monitor temperatures.
- Use one of the following transport systems:
  - Qualified containers and pack-outs
  - Portable vaccine unit (if power source available)
  - Packing Vaccines for Transport during Emergencies

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. Ideally, vaccine should be transported using a portable vaccine refrigerator or qualified pack-out. However, if these options are not available, you can follow the emergency packing procedures for refrigerated vaccines below:

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 (this normally takes less than 5 minutes.

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 cushioning 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.**

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

Distributed by

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

Packing Vaccines for Transport during Emergencies

2 Pack for Transport

frozen water bottles (this normally takes less than 5 minutes)

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 cushioning 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 cushioning 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.

estination

– Record date, time, temperature, and your initials on vaccine temperature log.
oxes of vaccines quickly to storage refrigerator.
f there has been a temperature excursion, contact vaccine manufacturer(s) and/or your am before using vaccines. Label vaccines "Do Not Use" and store at appropriate temperatures can be made.

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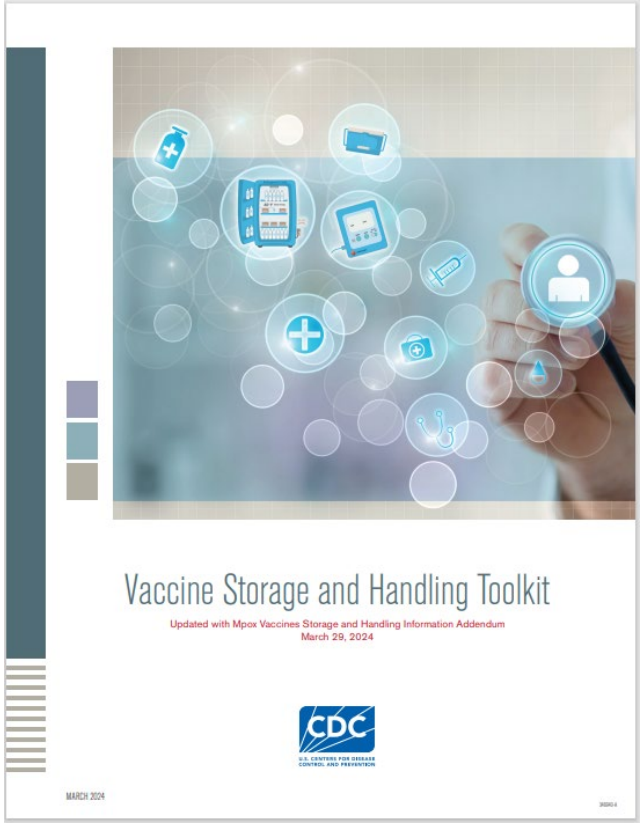
Clinical Resources

Vaccine Storage and Handling Toolkit

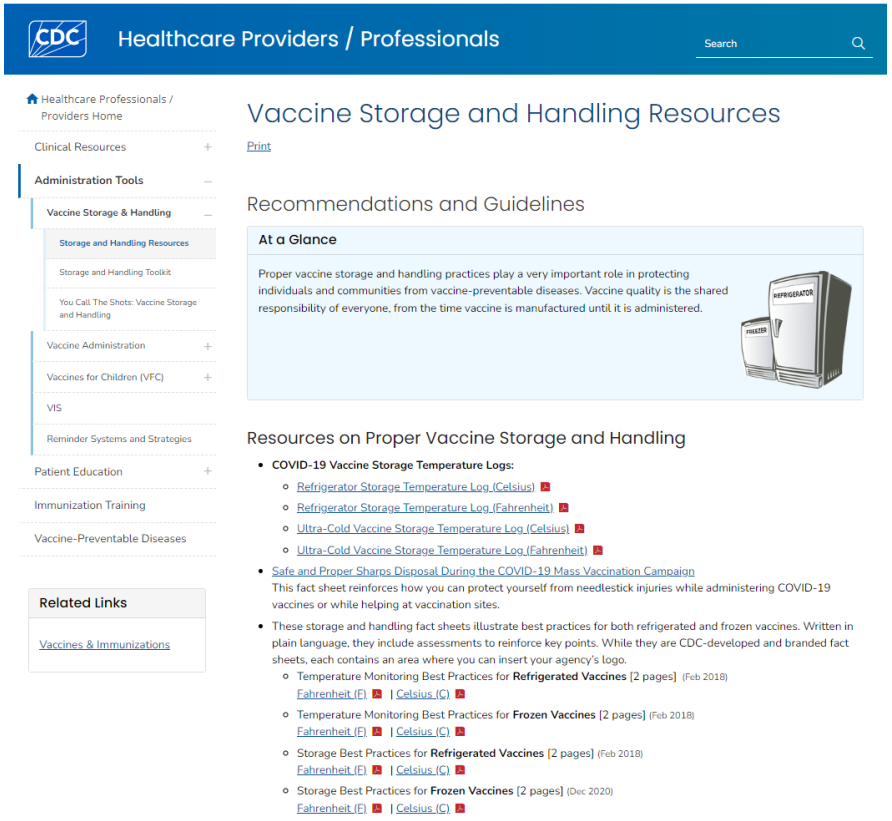
- Primary source for vaccine storage and handling recommendations:
  - Most current recommendations
  - Updated annually to reflect changes in guidance
  - Contains additional resources



Vaccine Storage and Handling Toolkit | CDC

CDC Resources for Staff Education

- Multiple storage and handling resources available through CDC website, including:
  - You Calls You Call the Shots: Vaccine Storage and Handling Module
  - Packing Vaccines for Transport during Emergencies
  - Vaccine Storage Temperature Logs
  - Storage and Handling best practice fact sheets



Vaccine Storage and Handling Resources | CDC

Continuing Education Information

- To claim continuing education (CE) for this course, please follow the steps below by July 1, 2026.
- Search and register for course WD4810-071824 in CDC TRAIN.
- Pass the post-assessment at 80%.
- Complete the evaluation.

- Visit “Your Learning” to access your certificates and transcript.
- If you have any questions, contact CDC TRAIN at train@cdc.gov or CE Coordinator, Melissa Barnett, at MBarnett2@cdc.gov

https://www.train.org/cdctrain/welcome

Email us your immunization questions:

nipinfo@cdc.gov

Thank You From Atlanta!

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.