Storage & Handling

California COVID-19 Vaccination Program
Welcome

Proper storage and handling protects vaccine viability, which is necessary to stimulate a healthy immune response after vaccination.

This lesson prepares you to store and handle COVID-19 vaccines in your practice. By the end of this lesson, you’ll be able to

- list vaccine storage units that meet program requirements,
- monitor temperatures and report excursions,
- manage expiration and beyond use dates, and
- identify key factors in proper vaccine preparation.
What You’ll Learn

1. Storage Units & Data Loggers
2. Temperature Monitoring
3. Expiration & Beyond Use Dates
4. Vaccine Preparation
Storage Units & Data Loggers

Overview

Providers agree to use proper storage units and temperature monitoring devices, and follow protocols outlined in CDC’s Vaccine Storage & Handling Toolkit.

A COVID-19 Addendum has been added to address storage & handling, preparation & administration, and transport for Pfizer-BioNTech, Moderna, and Janssen vaccines.

Resources: Bookmark Vaccine Storage & Handling Toolkit.
Storage Units

Overview

Purpose-built or pharmaceutical-grade are the gold standard. They are designed for biologics, including vaccines. Storage units can be large or compact, under-the-counter. They

• offer reliable and uniform temperature,
• are designed to reduce cold air loss with door openings, and
• recover quickly after doors are closed.

Commercial or household standalone units are acceptable. If necessary, combination units may be used—but frozen vaccines must be stored in a separate standalone freezer.

Never store vaccine in a dormitory-style or bar-style combined refrigerator/freezer unit.

**Resources:** See [Vaccine Management at a Glance](#), Storage Units.
Placement

Storage Units

Leave space along sides and top, and from any wall.

Don’t block the cover of the motor compartment.

Make sure door opens and closes smoothly.
Setup: Key Points

Storage Units

Store vaccines in original packaging (trays)

Store biologics on separate shelf; no food or drinks to minimize door openings

Avoid outlets with **RESET** button, outlets controlled by wall switch, and power strips

Use “Do Not Disconnect” labels; use outlet covers

Set thermostat within required range

Ensure digital display is easily visible

Post temperature logs on corresponding unit

Position data logger probe in the center near vaccines
Recommended Temperatures

Storage Units

Store vaccine products as defined in EUA Fact Sheets for HCPs and CDC's Toolkit. See COVID-19 Vaccine Product Guide for summary chart.

Resources: See Vaccine Management at a Glance, Recommended Temperatures.
Data Loggers

Overview

Storage units must be equipped with a digital data logger; devices with buffered probes provide more accurate readings. For ultra-cold storage, devices must use an air-probe, or probe designed for vaccine temperatures.

Keep backup device on hand for transports and should primary devices fail.

Resources: See Vaccine Management at a Glance, Data Loggers.
CDC recommends devices with the following features:

- Current, minimum, and maximum temperatures
- Detachable probe that best reflects vaccine temperatures (e.g., a probe buffered with glycol, glass beads, sand, or Teflon®)
- Alarm for out-of-range temperatures
- Reset button
- Accuracy within +/-0.5°C accuracy (+/-1°F)
- Low-battery indicator

Resources: See Vaccine Management at a Glance, Data Loggers.
Setup

Data Loggers

To ensure you are notified if temperatures drift outside recommended ranges, configure device settings carefully. See Data Logger Setup & Use.

• Set HI & LO alarm limits to reflect recommended product temperatures.
• Select the temperature scale that matches your temperature range.
• Record every 30 minutes (or less) so you can respond promptly to alerts.

Resources: See Vaccine Management at a Glance, Data Loggers.
What You’ll Learn

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Temperature monitoring is a critical step to protect vaccines.

Monitor and record your data logger’s current, MIN, and MAX readings on your temperature logs for refrigerated, frozen, or ultra-cold vaccines, or use this COVID-19 Temperature Log.

Post refrigerated and frozen temperature logs on corresponding storage units to prevent recording errors.

Temperatures Monitoring (Cont.)

Take these steps to prepare for your initial vaccine shipment:

- Ensure staff are trained to operate your data loggers and download any temperature data file in the event of an excursion; refer to device’s product guide.
- Some devices must be cleared (MIN/MAX temperatures and alarm symbol) after each recording to ensure staff don’t record previous readings again (see image); check your device’s product guide.
- Train staff not to ignore alarm alerts; if temperature alarms go off repeatedly, do not disconnect the alarm until it has been confirmed as a false alarm.
- Supervisors should plan to review logs to ensure staff understand how to record temperatures, record twice daily, and respond to all out-of-range temperatures.
Record storage unit temperatures on a temperature log. (Your temperature log may look different.)

**1.** Record the time and your initials next to the day of the month:
- a.m. temperatures before opening the refrigerator or freezer.
- p.m. temperatures about an hour before the office closes to allow time for corrective actions.

**2.** Record a check mark if you see or hear an alarm.
If the alarm did not go off, leave blank.

**3.** Record CURRENT, MIN, and MAX temperatures neatly, accurately, and in the correct columns.

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Initials</th>
<th>Alarm</th>
<th>CURRENT</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>8:00 am</td>
<td>CS</td>
<td>□</td>
<td>2.4°C</td>
<td>0.6°C</td>
<td>4.1°C</td>
</tr>
</tbody>
</table>
Temperature Monitoring (Cont.)

Overview

Record storage unit temperatures on a temperature log. (Your temperature log may look different.)

IF NO ALARM:

4. Clear MIN and MAX. (Skip this step if your data logger resets automatically.) Confirm MIN and MAX now match the CURRENT temperature.

5. Ensure data logger is in place and recording. (Some devices need to be reconnected and restarted.)

Refer to the device’s product guide.
Any temperature outside recommended ranges is considered a temperature excursion and may spoil vaccines.

A temperature excursion triggers a **visual or audible alarm** or alert depending on the data logger. Staff will need to confirm when the excursion occurred and its duration. There may be multiple temperature excursions overnight or weekend.

Your device may have a **temperature data file** that must be downloaded to get the data manufacturers will need to determine whether vaccines can be administered. The manufacturer's determination is only as accurate as the data you provide.
If an alarm goes off, take action immediately and report the temperature excursion:

• Clear the alarm symbol to ensure staff don’t respond to previous alerts.
• Label exposed vaccines DO NOT USE so vaccines are not administered.
• Alert the Vaccine Coordinator on duty or your supervisor.
• Download the temperature data file (if any) and locate the excursion details.
• Complete the Temperature Excursion Worksheet to gather data manufacturers will need to determine viability, then contact the manufacturer.
• Report temperature excursions daily in myCAvax under Vaccine Inventory.
• Do not administer vaccines until the manufacturer resolution is determined.

What You’ll Learn

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Determining vaccine and diluent expiration dates is critical for proper storage and handling. For COVID-19 vaccines, expiration dates may change as more stability data become available.

When expiration dates approach, check CDC’s Vaccine Expiration Date Report for any extensions by brand and lot number. Use expiration date tracker to record extensions.

Do not administer expired vaccine. To determine expiration dates:

- **Pfizer 12Y+ (gray cap):** Check Pfizer Fact Sheet for HCPs.
- **Pfizer 5-11Y (orange cap):** Check Pfizer Fact Sheet for HCPs.
- **Pfizer 6M-4Y (maroon cap):** Check Pfizer Fact Sheet for HCPs.
- **For Moderna products:** Scan QR code on vial or carton or look up expiration online.
- **For Janssen:** Scan QR code on outer carton, look up online, or call 800-565-4008.

**Resources:** See Vaccine Management at a Glance, Expiration Dates.
Vaccines may have a shortened beyond use date (BUD) as specified in the EUA Fact Sheet for HCPs and documented in CDC’s Toolkit COVID-19 Addendum.

The BUD replaces the manufacturer's expiration date. If the vaccine has no beyond use date, use the expiration date.

**Discard vaccine after the earlier of the expiration or beyond-use date.**

Label vaccines (date, time and staff initials) and track carefully to ensure vaccines aren’t used past the beyond use date.

**Resources:** Complete CDC's product training for vaccines your location will order to ensure staff are trained on storage and handling including beyond use dates and labels.
Manufacturer-shortened expiration dates may apply if storing unpunctured vials under conditions other than coldest recommended temperatures. Use beyond use date (BUD) labels so vaccines aren’t used past these reduced beyond use dates. See COVID-19 Vaccine Product Guide for summary chart.

Resources: See Vaccine Management at a Glance, Beyond Use Dates for labels.
Multidose vials have a use-by date/time after the first puncture. Once vial is punctured, label vial with puncture date/time. Dispose of vaccine after the use-by date/time. See COVID-19 Vaccine Product Guide for summary chart.

Resources: See Vaccine Management at a Glance, Beyond Use Dates.
Example:

<table>
<thead>
<tr>
<th>Janssen</th>
<th>Label Vial Use-By &amp; Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 hours at 2° to 8°C</td>
<td></td>
</tr>
<tr>
<td>(36°F to 46°F)</td>
<td></td>
</tr>
<tr>
<td>or 2 hours at 25°C (77°F) max</td>
<td>12/8/21 3 PM TP</td>
</tr>
<tr>
<td>(Discard unused vaccine after these time frames)</td>
<td></td>
</tr>
</tbody>
</table>
What You’ll Learn

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Vaccine Preparation

Overview

Never miss a vaccination opportunity! Vaccinate every eligible person who presents at a vaccination site! CDC recommends this guidance to minimize wasted vaccine:

• Prepare vaccines immediately prior to administration (in high-throughput settings, it may be necessary to pre-draw vaccine to support a fast-paced workflow).
• Vaccine should be pre-drawn in quantities that can be administered prior to the beyond-use date/time.
• Shield pre-drawn syringes from direct sunlight at all times.
• Providers must ensure maximum room temperature time is observed.
• In outdoor settings, pay close attention to workflow pace so vaccines can be moved to room temperature for protection if needed, and quantity of pre-drawn syringes adjusted accordingly.

Resources: See Vaccine Management at a Glance, Preparation.
Use this checklist to ensure your patients receive sufficient protection after vaccination and to minimize revaccination efforts due to administration errors:

- Always check expiration & beyond use dates before preparation and administration.
- Prepare vaccine according to the manufacturer fact sheet.
- Reconstitute Pfizer 6M-4Y (maroon cap), 5-11Y (orange), and 12Y+ (purple) vaccine products with correct diluent and volume.
- Don’t exceed the number of doses in the fact sheet.
- Never use partial doses (pool) from two or more vials to obtain a dose of vaccine.
- Administer COVID-19 vaccines in the correct site and route.

**Resources:** Complete CDC’s product training for preparation and administration details.
Summary

You have now completed the lesson. You should now be able to perform the following tasks:

• **list vaccine storage units that meet program requirements**, 
  Ranked in order: purpose-built or pharmaceutical; commercial or household standalone; combination units (frozen vaccines stored in standalone freezer)

• **monitor temperatures and report excursions**
  Record temperatures twice daily; for excursions, quarantine vaccines, contact manufacturer for guidance, and report excursion in myCAvax.

• **manage expiration and beyond use dates**
  [Vaccine Management at a Glance](#), Expiration Dates, Beyond Use Dates

• **identify key factors in proper vaccine preparation**
  [Vaccine Management & Administration at a Glance](#), Preparation
Got Questions?

Go to [eziz.org/covid](http://eziz.org/covid) for program updates, videos & job aids, provider support, alerts, and more!

**Program Education and Support:**
- Provider Office Hours
- myCAvax Training
- Weekly Calendar of Webinars and Trainings
- Frequently Asked Questions
- Guide to Other COVID-19 Vaccine Websites

**Provider Support**

- **COVID Call Center**
  - Email: For Program Info
  - Phone: (833) 502-1245
  - Hours: Mon–Fri, 8AM–6PM

- **myCAvax Help Desk**
  - Email: For Technical Support
  - Phone: (833) 502-1245, option 2

**Alerts:**

- **Medi-Cal News Flash**
  - FQHC, RHC and Tribal FQHC Providers May Now Submit Claims for COVID-19 Vaccine Administration

- **Updated Vaccination Schedule**
  - Interim Clinical Considerations Updated for 2nd Booster March 31
  - COVID-19 Vaccine Timing by Age (Eligibility Chart)
  - Spanish: Calendario de la Vacuna COVID-19 por Edad (Tabla de Elegibilidad)
  - COVID-19 Vaccine Timing for 2nd Dose
  - COVID-19, Myocarditis, and Vaccines Fact Sheet
Looking for myCAvax Training Resources?

The Knowledge Center now houses job aids and videos on use of myCAvax for Providers, LHDs, and MCEs.

Look for this prompt at the bottom of myCAvax system screens to access training resources:

Need help? View our job aids in the Knowledge Center, or contact us.
Done!

You have completed the **Storage & Handling** lesson.

Click “EXIT” at the top of page.