



TOOLKIT

SECTION 4: VACCINE ORDERING, STORAGE, AND HANDLING

Last Updated November 22, 2022

Funding for this project was made possible by the Office of Disease Control, through the Illinois Department of Public Health.

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VACCINE ORDERING

Vaccine ordering will typically take place within I-CARE. Delivery time for all vaccines is approximately one week. Quantities vary depending on the vaccine manufacturer and state allotments.

- **Moderna:** each shipping tray contains 10 vials (100 primary doses)
 - The box label has been updated to indicate:
 - Total volume of the multi-dose vial.
 - Dosing information on primary and booster shots are listed on the label.
 - Maximum number of punctures per vial.
- **Moderna Bivalent boosters:** shipping tray sizes are 10 vials (60 doses), minimum order of 2 trays (100 doses) required
- **Janssen (Johnson & Johnson):** each tray contains 10 vials (50 primary doses), minimum order of 2 trays (100 primary doses) required
- **Pfizer 6 months–4 years and 5–11 years:** ships packages of 10 vials (100 primary dose trays), minimum order is 100 doses and must be ordered in increments of 100 doses
- **Pfizer 12+:** shipping tray sizes are 50 vials (300 primary doses) or 195 vials (1,170 primary doses)—remember, you cannot use adult vials on pediatric populations!

- **Pfizer Bivalent boosters:** shipping tray sizes are 10 vials (50 doses), minimum order of 5 trays (300 doses) required
- **Novavax:** each shipping tray contains 10 vials (100 doses), minimum order is 100 doses

Creating a Standard Operating Procedure

Establishing a clear standard operating procedure (SOP) for vaccine storage, handling, and administration is an easy way to minimize vaccine waste. Consider designating a primary and secondary vaccine coordinator for the facility who can:

- Order vaccines
- Oversee storage and handling
- Document vaccine inventory
- Dispose of expired vaccines



Remember, you cannot use adult vaccine products on pediatric populations. See [Section 5: Vaccine Administration](#) for more information on vaccine interchangeability.

VACCINE ORDERING (CONTINUED)

Before You Order, Make Sure You Select the Necessary Storage Equipment

The equipment you choose should be carefully selected to ensure that they are reliable and allow for temperatures to remain stable. As with all vaccines, you must verify your facility is meeting proper storage requirements to ensure the vaccine does not lose its potency.

Cold-chain storage and handling requirements for each COVID-19 vaccine product will vary.



Maintaining Appropriate Storage Temperatures

You will need a calibrated thermometer or temperature recording device (TMD) inside each piece of storage equipment. **CDC recommends a specific type of TMD called a “digital data logger” (DDL).** A DDL provides the most accurate storage unit temperature information, including details on how long a unit has been operating outside the recommended temperature range (referred to as a “**temperature excursion**”). Per CDC recommendations your vaccine **storage unit temperature should be checked at the start and end of each workday. A physical log should be kept on the storage unit documenting temperature and the unit’s minimum and maximum temperatures.**

To ensure your facility is adhering to proper storage guidelines, be sure to have cold chain procedures in place that are routinely reviewed and monitored. If an error occurs, **corrective action should be taken as soon as possible.** **Keep the data for three years so they can be analyzed for long-term trends and/or reoccurring problems.**

See the CDC’s resource for Handling a Temperature Excursion in Your Vaccine Storage Unit [here](#).

DETERMINING HOW MUCH TO ORDER

When determining how much vaccine to order, please consider the following key ordering criteria:

- Order for estimated use and maintain enough inventory to last 3 weeks; inventory should not exceed a one-month supply
- Geography and concentration of vaccine locations or events
 - Remember, pharmacies cannot vaccinate children under 3 years of age
- Patient population size and percent that is expected to uptake
- Example: You have a pediatric population of 4,900 between ages 6 months to 4 years
 - CDC estimates 20 - 30% will get vaccinated
 - Order 980 to 1100 doses



TIP: You can survey patients to better understand what phase individuals are in (early adopters, laggards) as this may impact content and provider ordering.



The goal is to vaccinate every eligible and interested patient!

Some waste is expected.

ORDERING VACCINES THROUGH LOCAL HEALTH DEPARTMENTS

Vaccines can be ordered through local health departments in some jurisdictions. Local health departments may also offer additional services to get vaccines to your facility like delivery, local pick up for smaller quantities, etc. Please use the links below to learn more about ordering vaccines through our local health departments:

- **Chicago** - [Department of Public Health COVID-19 Vaccine Request Form](#)
- **Cook County** - [Department of Public Health COVID Vaccine Information for Healthcare Providers](#)
- **DuPage County** - [Health Department Pfizer BioNTech Vaccine Request Form](#)
(offers vaccine delivery to those who do not have the proper equipment to do a pickup)
- **Franklin Williamson Bi County Health** - contact Laurie Allen at 618-993-8111 x 228
- **Macon County** - contact Rachel Deerwester at rdeerwester@maconchd.org or aholthaus@maconchd.org
- **Madison County Health Department** - request vaccine by contacting COVIDvax@co.madison.il.us or call 618-692-8954
- **McHenry County** - email Vaccine@mchenrycountyil.gov. Once your email is received and confirmed, a transfer request to I-CARE to schedule a pick-up date/time will be made. You will need to pick up the vaccine and ancillary supplies from the office located in Woodstock, IL. You will need to bring a cooler for transportation of the vaccine and a digital data logger for monitoring the cooler's temperature.

ORDERING TOOLS

Vaccine Matchmaker

“The COVID-19 Vaccine MatchMaker Service” is designed to help utilize existing inventory and prevent vaccines or needles from expiring. This is only for unopened vials of vaccine. It allows providers that need the vaccine to view a list of providers with excess vaccine in their area and for providers to input their own excess inventory to be utilized by others. View the website and matchmaker tool [here](#). Consider checking the matchmaker before placing orders into I-CARE.

Hub and Spoke Model for Small Practices

If minimum shipment sizes are too large for your office to use before expiration, the hub and spoke model can be used. The smaller primary care office would partner with a hub – an entity that places the order and receives the shipment. A hub could be a local health department, affiliated hospital or main clinic, or a willing pharmacy. The hub would complete an online transfer form in I-CARE to share vaccine with the primary care office – the spoke. The office would be responsible for picking up the vaccine.



TIPS FOR ORDERING

Keep your inventory in your clinic records and in I-CARE current! At any given time, someone in your clinic, organization, or practice should know how many doses you have left.

Input what you have given into I-CARE in a timely fashion and update your vaccine inventory at [VaccineFinder](#). Supply levels must be reported in VaccineFinder by the close of business on Fridays. Administrators from local, state, and federal health departments are looking at those numbers to decide how much vaccine Illinois gets or needs! Use the **“Add Vaccine”** option to add NDCs to your location to report inventory doses. Make sure you add the ages your location is vaccinating.

ANCILLARY KITS

Vaccines are shipped with ancillary supplies in a separate box. These kits vary, but generally include needles, syringes, alcohol prep pads, masks and face shields, vaccine record cards, and diluent if applicable. There is no separate order process for the ancillary supplies. An opt-out option will appear in I-CARE when ordering all adult COVID-19 vaccines and Pfizer COVID-19 vaccine for children ages 12 and up. Moderna COVID-19 shipments come with one ancillary kit regardless of vial size. The shipments will be 1 to 1 instead of 2 to 1.

The option to opt out of ancillary kits does not apply to pediatric COVID-19 vaccines for children ages 5–11, as it contains the diluent necessary for preparation.

Important notes: Diluent included in ancillary kits with the Pfizer pediatric vaccine contain 10mL diluent vials. While these vials appear to contain sufficient diluent for multiple vials, they must only be used once as they are a one-time-use item. They should be discarded with the remaining content after each use. For each vial of vaccine, extract 1.3mL of diluent from a single-use vial to reconstitute 1.3mL of vaccine. **Do not be tempted to reuse punctured diluent vials more than once.**

Remember that:

- The Pfizer ancillary kits will only contain 1 inch length needles
- No need to train new staff on when to use a 5/8 inch length needle

More on needle sizes in [Section Five - Vaccine Administration](#). Ancillary supplies provided DO NOT include Epi Pens or Epinephrine. You are expected to supply Epi Pens or Epinephrine and assure this emergency equipment is available during administration of the vaccine to children. You can use the Immunization Action Coalition (IAC) handout [Medical Management of Vaccine Reactions in Children and Teens in a Community Setting](#) as a standing order for management of vaccine reactions.

VACCINE SHIPMENT PACKAGING

Shippers

Vaccine manufacturers have developed packaging and storage to support the different locations these products are being sent. Vaccines may arrive in specially designed, temperature-controlled thermal shippers; some may even have dry ice to maintain recommended storage temperatures.



It's important to be prepared to move vaccines from shippers to on-site storage in a timely fashion.



The Pfizer products will be shipped with a SAGA Data Logger that tracks detailed temperature information during shipment. Vaccine coordinators will get an email with temperature updates during shipping, including any breaches in protocol. The SAGA shipper must be returned in the provided packaging after vaccine receipt.

The Moderna products are shipped with a TagAlert temperature monitor. Check the TagAlert temperature monitoring device by pressing the blue “start and stop” button. Read indicator Status to determine if the appropriate temperature was maintained during transit. If left arrow points to a green checkmark: the vaccine is ready to use. Store the vaccine at proper temperatures immediately. If right arrow points to red X: The numbers 1 and/or 2 will appear in the display. Store the vaccine at proper temperatures and label DO NOT USE! Call the phone number indicated in the instructions or your jurisdiction’s immunization program IMMEDIATELY. Return small shipper following McKesson’s return instructions. Give the cooler to your regular UPS delivery person for return or call 1-800-PICK-UPS to schedule a pickup. Dispose of medium and large shippers and packing materials.

Further information about vaccine storage guidelines is available on the CDC’s [Pinkbook](#) and [Vaccine Storage and Handling Toolkit](#) (Mar 2021).

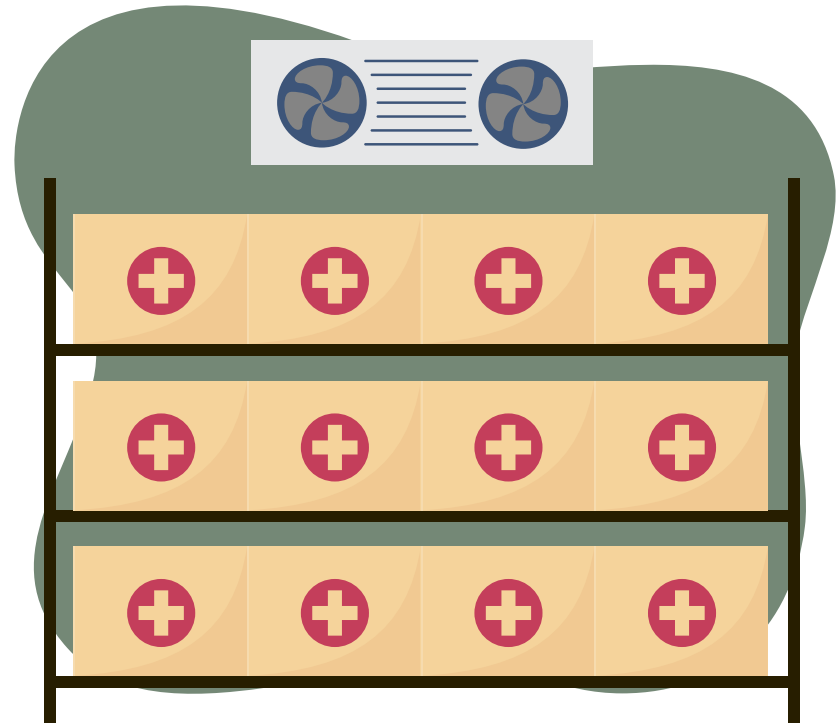
UNPACKING & LABELING

Vaccines Arrived – Now What?

- Vaccines and diluents should be carefully unpacked and moved into storage as soon as they arrive.
- Ancillary supplies will be in a separate box.
- Examine the shipping containers for the correct quantity and any signs of damage.
- If there are any issues or discrepancies notify your local health department immediately



TIP: Use color coded labels to sort each shipment – this will make it easier to see which vaccines are closest to their expiration date.



UNPACKING & LABELING (CONTINUED)

Moderna Notes

More than one formulation of Moderna COVID-19 Vaccine has a dark blue vial cap; the distinguishing feature of the different formulations is the color on the box and the color of the border on the label. The vaccine intended for recipients aged 6 months through 5 years has a **magenta (hot pink) label and wording on the box.**

Pfizer Notes

Because some lots of the Pfizer-BioNTech vaccine were manufactured several months before the final FDA authorization, some packages and vial labels contain two statements that are not correct. First, the vial label may state that the vaccine is for age 2 through <5 years; however, FDA has authorized this product and CDC has recommended it for children age 6 months through 4 years. Second, the vial label may state that the vaccine may be used for only 6 hours after dilution; however, FDA has authorized the vaccine to be used for 12 hours after dilution. A “**Dear Healthcare Provider**” letter specifying that the FDA has authorized the use of this formulation beginning at age 6 months has been posted on the FDA website and will be widely distributed to vaccine providers.

STORAGE & HANDLING

Make Sure You Do Not Miss an Important Storage Alert



Be sure to add these contacts to your safe sender lists so that you receive order, shipping, and temperature monitoring alerts:

- cvgovernment@pfizer.com
- Pfizer.logistics@controlant.com
- onsitemonitoring@controlant.com



Check out the CDC's At-A-Glance Resource Guide on Vaccine Administration, Storage, and Handling

[View PDF](#)

STORAGE & HANDLING (CONTINUED)

Pfizer-BioNTech & Moderna Vaccine Shipping & Delivery Information

VACCINE MANUFACTURER/PRODUCT	THERMAL SHIPPER AS TEMPORARY STORAGE?	OPTIONS FOR STORAGE UPON ARRIVAL
<p>Pfizer-BioNTech</p> <p>6 mos through 4 years ("Age 2y to <5y" or "Age 6m to < 5y" on vial label) Maroon top</p> <p>5 through 11 years ("Age 5y to <12y" on vial label) Orange top</p> <p>Adult (12+) Gray top</p> <p>Bivalent Booster (12+) Gray top</p> <p>SHIPPED FROM PFIZER</p>	<p>NO</p> <p>Remove the temperature monitoring device from the shipping container and check the temperature monitor for any excursion warnings, turn the monitor off.</p> <p>Return device using the included prelabeled foldable return box. Dispose of the single-use thermal shipping container.</p>	<ul style="list-style-type: none"> • Ultra-low temperature freezers (-90°C + -60°C) for up to 12 months • Refrigeration units that are commonly available in hospitals and pharmacies: <ul style="list-style-type: none"> • The vaccine has shown improved stability and can be stored for up to 10 weeks at refrigerated 2 - 8°C conditions • Cannot be stored in freezers at -25°C to -15°C. • Visit here for updated guidance
<p>Moderna</p> <p>6 mos–5 years (Blue vial cap with magenta bordered label)</p> <p>6–11 years (Blue vial cap with purple-bordered label)</p> <p>12+ (Red vial cap with blue-bordered label)</p> <p>Bivalent Booster (18+) (Blue vial cap with gray-bordered label)</p> <p>SHIPPED FROM McKESSON DISTRIBUTION SITES</p>	<p>N/A: Remove from packaging. Once vaccine vials are thawed, they cannot be refrozen.</p> <p>Keep the vials in their original package to protect them from light.</p>	<ul style="list-style-type: none"> • Shipped to your location frozen. • Can be stored frozen between -50° to -15°C (-58° to 5°F) until the expiration date. • Do not store on dry ice or below -50°C (-58°F). • Vials can be stored refrigerated between 2° to 8°C (36° to 46°F) for up to 30 days prior to first use. • If you believe any vials experienced a temperature excursion, use Temperature Excursion Tool here for further instructions.

STORAGE & HANDLING (CONTINUED)

Janssen & Novavax Vaccine Shipping & Delivery Information

VACCINE MANUFACTURER/PRODUCT	THERMAL SHIPPER AS TEMPORARY STORAGE?	OPTIONS FOR STORAGE UPON ARRIVAL
<p>Janssen SHIPPED FROM McKESSON DISTRIBUTION SITES</p>	<p>N/A: Remove from packaging. Once vaccine vials are thawed, they cannot be refrozen.</p> <p>Keep the vials in their original package to protect them from light.</p>	<ul style="list-style-type: none"> Initially stored frozen by the manufacturer, then shipped at 36°F to 46°F (2°C to 8°C). If vaccine is still frozen upon receipt, thaw at 36°F to 46°F (2°C to 8°C). <ul style="list-style-type: none"> If needed immediately, thaw at room temperature (maximally 77°F/25°C). At room temperature, a carton of 10 vials will take ~4 hours to thaw and one vial will take ~1 hour Store unpunctured multi-dose vials at 36°F to 46°F (2°C to 8°C) Do not store frozen. Unpunctured vials of the vaccine may be stored between 47°F to 77°F (9°C to 25°C) for up to 12 hours.
<p>Novavax</p>	<p>N/A: The vaccine will arrive between 2° to 8°C (36°F to 46°F) in a qualified shipping container.</p> <p>Unpack vaccine immediately upon arrival at the clinic. Store in original packaging to protect from light.</p>	<ul style="list-style-type: none"> Store between 2°C and 8°C (36°F and 46°F) until the expiration date. Once punctured, Novavax COVID-19 Vaccine must be used within 6 hours. <ul style="list-style-type: none"> Note when (time) the vial is first punctured and use within 6 hours. Discard vial and any remaining vaccine after 6 hours.

STORAGE & HANDLING (CONTINUED)

Pfizer-BioNTech Storage & Handling Information

AGE INDICATIONS	6 months through 4 years	5 years through 11 years	5 years through 11 years	12 years and older	12 years and older
FORMULATION	Primary Series	Primary Series	Single Bivalent Booster Dose	Primary Series	Single Bivalent Booster Dose
VIAL CAP COLOR/ LABEL WITH COLOR BORDER	Maroon	Orange	Orange/ Bivalent label	Gray	Gray
PREPARATION	Dilute Before Use	Dilute Before Use	Dilute Before Use	Do Not Dilute	Do Not Dilute
AMOUNT OF DILUENT NEEDED PER VIAL^a	2.2 mL	1.3 mL	1.3 mL		
DOSE VOLUME/DOSE	0.2 mL/3 mcg	0.2 mL/10 mcg	0.2 mL/10 mcg	0.3 mL/30 mcg	0.3 mL/30 mcg
DOSES PER VIAL	10 primary (after dilution)	10 primary (after dilution)	10 booster (after dilution)	6 primary	6 booster
ULT FREEZER (-90°C TO -60°C)^b	12 months				
FREEZER (-25°C TO -15°C)	DO NOT STORE				
REFRIGERATOR (2°C TO 8°C)	10 weeks				
ROOM TEMPERATURE (8°C TO 25°C) including any thaw time	12 hours prior to first puncture				
AFTER FIRST PUNCTURE (2°C TO 25°C)	Discard after 12 hours				

^a Diluent: Sterile 0.9% Sodium Chloride Injection, USP. Do not use bacteriostatic 0.9% Sodium Chloride Injection or any other diluent.

^b Regardless of storage condition, vaccines should not be used after 12 months from the date of manufacture printed on the vial and cartons.

STORAGE & HANDLING (CONTINUED)

Moderna Storage & Handling Information

AGE INDICATIONS AND FORMULATION	6 months through 5 years (Primary Series)	6 years through 11 years (Primary Series)*	12 years and older (Primary Series)**	6 years and older (Single Bivalent Booster Dose)
VIAL CAP COLOR	Dark Blue	Dark Blue	Red (5.5 mL)	Dark Blue
VIAL LABEL BORDER COLOR	Magenta	Purple	Light Blue	Gray
PREPARATION	Do Not Dilute	Do Not Dilute	Do Not Dilute	Do Not Dilute
DOSE VOLUME/DOSE	0.25 mL/25 mcg	0.5 mL/50 mcg	0.5 mL/100 mcg primary	<ul style="list-style-type: none"> 6 to 11 years old: 0.25 mL/25 mcg 12 years and older: 0.5 mL/50 mcg
DOSES PER VIAL	10 primary	5 primary	11 max primary	Varies by age: <ul style="list-style-type: none"> 6 to 11 years old: 10 booster 12 years and older: 5 booster
ULT FREEZER (-90°C TO -60°C)	DO NOT STORE			
FREEZER (-50°C TO -15°C) ^a	Until expiration			
REFRIGERATOR (2°C TO 8°C)	30 days			
ROOM TEMPERATURE (8°C TO 25°C) including any thaw time	24 hours			
AFTER FIRST PUNCTURE (2°C TO 25°C) ^b	Discard after 12 hours			

^a Regardless of storage condition, vaccines should not be used after the expiration date.

^b After a vial is punctured 20 times it should be discarded even if the 12-hour time limit has not been met.

* Can be used as a dose in those who received a J & J primary dose.

** Although labels may state “booster doses only”, the blue cap, purple label border presentation is only for use as a *primary* dose in ages 6-11

STORAGE & HANDLING (CONTINUED)

Janssen & Novavax Storage & Handling Information

	JANSSEN (Johnson & Johnson)	NOVAVAX
AGE INDICATIONS	18 years and older	12 years and older
FORMULATION	Primary Series and Booster Dose	Primary Series
VIAL CAP COLOR/LABEL WITH COLOR BORDER	Blue Cap, White Label	Royal Blue Cap
PREPARATION	Do Not Dilute	Do Not Dilute
DOSE VOLUME/DOSE	5 X10 ¹⁰ viral particles	0.5mL / 5mcg rS and 50mcg of Matrix M adjuvant
DOSES PER VIAL	5 primary doses or booster doses	10
ULT FREEZER (-90°C TO -60°C)	N/A	N/A
FREEZER (-25°C TO -15°C)	N/A	N/A
REFRIGERATOR (2°C TO 8°C)^a	Up to 11 months	Until expiration date
ROOM TEMPERATURE (8°C TO 25°C) including any thaw time	12 hours prior to first puncture	N/A
AFTER FIRST PUNCTURE (2°C TO 25°C)	Administer within 6 hours if refrigerated or within 2 at room temperature	6 hours

^a Regardless of storage condition, vaccines should not be used after the expiration date.

ORGANIZING VACCINE STOCK

MINIMIZING RISK FOR VACCINE LOSS

- Review the CDC Toolkit for [Vaccine Storage and Handling](#)
- Organize stock to allow for vaccine that expires first to be used first
- Place water bottles on the top shelf and floor of the refrigerator and in the door racks to help maintain stable storage temperatures
- Avoid placing or storing any items other than vaccines, refrigerated diluents, and water bottles inside storage units
- Store vaccines and diluents in original packaging
- Arrange vaccines and diluents in rows and allow space between them to promote air circulation
- Note the expiration date on vial and updates to expiration date announcements

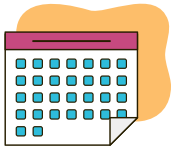


View the [CDC's learning module on vaccine storage and handling](#) to learn more!

EXPIRATION DATES

TIP: Register to access: [CDC's COVID-19 Vaccine Lot Number and Expiration Date Report](#)

The EUA supersedes the expiration date information on the vial.



Manufacturer Date versus Expiration Date:
The date on the Pfizer **maroon**, **orange**, and **gray** cap vials is the date of manufacture.

Expired vaccine should be discarded regardless of storage conditions.

MANUFACTURER	HOW TO FIND
Moderna (Spikevax)	<ul style="list-style-type: none"> Scan QR code on the vial or carton Website: Look up tool
J & J	<ul style="list-style-type: none"> Scan the QR code on the outer carton Call 1-800-565-4008 Website: Look up tool
Pfizer	<ul style="list-style-type: none"> See EUA fact sheets for providers Website: Look up tool
Novavax	<ul style="list-style-type: none"> Scan QR code on outer carton Website: Look up tool