

# New York State Vaccines for Children Program (NYS VFC) Vaccine Stand-Alone Storage Unit Purchasing Guidance

Selecting an appropriate vaccine storage unit is critical to ensuring the viability of refrigerated and frozen vaccine. Failure to adhere to recommended specifications for storage and handling can reduce vaccine potency, resulting in inadequate immune responses in the recipients and inadequate protection against disease. **As of January 1, 2020, stand-alone units are required for all providers enrolled in the NYS VFC Program.** Stand-alone units are self-contained storage units dedicated to a single temperature range and are considered the best type of storage unit for maintaining the temperatures necessary to keep vaccine viable. The NYS VFC Program requires stand-alone units because they are much less likely to cause the vaccine loss due to the accidental freezing or warming of vaccine associated with other types of storage units.

## Vaccine Storage Unit Guidelines

- Stand-alone units should be large enough to hold the practice's year's largest inventory (e.g. back to school and flu season) without overcrowding.
- Stand-alone refrigerators should be able to maintain temperature ranges between 36° and 46° Fahrenheit (or between 2° and 8° Celsius).
- Stand-alone freezers should maintain temperatures at or below 5° Fahrenheit (-15° Celsius).

## Recommended Features for Stand-Alone Storage Units

- Microprocessor-based temperature control with a digital temperature sensor (thermocouple, RTD, or thermistor)
- Digital temperature display and settings.
- Fan-forced air circulation – fans or multiple cool air vents to promote temperature uniformity and fast temperature recovery.
- Temperature alarms
- Security features (e.g., temperature set point security)
- Solid (vs. glass) doors (better temperature maintenance during power outages)
- **For stand-alone freezers:** an automatic defrost or a frost-free feature. A unit that is not frost-free increases the likelihood of vaccine loss during the manual defrosting process.

## Unacceptable Vaccine Storage Unit Types

**Dormitory-style units:** small single-door combination refrigerator/freezer units without separate temperature controls. These units are **not allowed** because the freezer compartment in this type of unit can't simultaneously maintain temperatures either cold or warm enough to safely store both refrigerated and frozen vaccine.



Reprinted from the CDC's Vaccine Storage and Handling Toolkit

**Combination, household-style refrigerator/freezer units<sup>1</sup>:** household-style refrigerator/freezer units that share a single compressor (cooling coil). These units are **not allowed** because frequent temperature fluctuations in both compartments increases the risk of accidentally freezing vaccine.



Reprinted from the Nevada Immunization Program's Vaccine Storage Unit Protocol

<sup>1</sup> Providers with pharmaceutical grade combination units should call the NYS Vaccine Program for further information: 1-800-543-7468.

## SELECTING A NEW UNIT



### Determining Size

To determine what size vaccine storage unit your practice needs, determine the maximum number of doses (volume) of publicly purchased (including Vaccine for Children [VFC], Child Health Plus [CHP], state-funded) and privately purchased vaccine that will be stored in your refrigerator and freezer. Your unit should be large enough to hold the year's largest inventory and water bottles without overcrowding (e.g. back to school and flu season).

*Note: If you currently have zero doses on hand and have never placed an order, this information can be determined from the provider population guidance in your NYS VFC Program provider profile application.*

### Determining Style/Type

Based on the number of maximum doses stored:

	Volume	Max Doses	Minimum Cubic Feet	Type & Cost of Needed Unit
<b>REFRIGERATOR</b>	Very High	10,000+	Multiple units needed	Full-size, stand-alone units (\$800 - \$9,000 per unit)  <small>Reprinted from the Nevada State Immunization Program Vaccine Storage Unit Protocol</small>
	High	2,000 – 10,000	May need multiple units	
	Medium-High	1,000- 2,000	40 cu. ft.	
	Medium	901- 1,000	36 cu. ft.	
		801- 900	21-23 cu. ft.	
		701- 800	17-19.5 cu. ft.	
		400- 700	16.7 cu. ft.	
Low	100- 399	4.9 – 6.7 cu. ft.	Under-counter units (\$200 - \$5,000 per unit)  <small>Reprinted from the Nevada State Immunization Program Vaccine Storage Unit Protocol</small>	
<b>FREEZER</b>	Medium-High	501- 6,000	7 – 14.8 cu. ft.	Full-size units (\$800-\$9,000 per unit)
	Low	201 -500	5 – 5.6 cu. ft.	Under-counter (\$200 - \$5,000 per unit) and chest-style units (\$200 - \$5,000 per unit)
		0 - 200	3.5 – 4.9 cu. ft.	Under-counter units

Full-size stand-alone refrigerators and freezers are an appropriate option for medium-to-very-high-volume providers and cost between \$800 and \$9,000 per unit. Under-counter stand-alone refrigerators are an acceptable option for low-volume providers and can cost between \$200 and \$5,000 per unit. Under-counter stand-alone freezers can accommodate low to high-volume providers and can cost between \$200 and \$5,000 per unit. Chest-style freezers can accommodate low to high-volume providers and range in price between \$200 and \$5,000 per unit.

## Preparing Units for Use

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*Always consult the unit's product manual for additional information on proper setup.*

Before placing vaccines into a new unit, follow these steps:

- Place the unit in a well-ventilated room away from direct sunlight and heat sources. Allow for space around the top and sides of the unit, and at least 4 inches (10 cm) of space between the unit and wall.
- Plug the vaccine storage unit *directly* into a wall or floor outlet. **Do not use extension cords. Do not use multi-outlet power strips, such as surge protectors.**
- Place a [warning sign](#) near the outlet and/or circuit breaker informing staff and others not to unplug the storage unit or turn off the circuit breaker.
- Place a paper copy of the temperature log form on the front of the unit(s) for temperature recording:
  - Printable Temperature Log for Refrigerator [Fahrenheit Celsius](#)
  - Printable Temperature Log for Freezer [Fahrenheit Celsius](#).
- Place a [warning sign](#) on the unit informing staff not to adjust the thermostat.
- Consult the product manual for instructions on how to operate the thermostat, minimum spacing from walls and the use of water bottles. Some units have specific guidance which should be followed.
- Label the areas where vaccine will be stored. Clearly label and distinguish which doses are public (includes VFC, CHP, state) and private stock. Store vaccine on the middle shelves of the unit, away from cold air vents.
- Set the refrigerator temperature to 40° Fahrenheit or 5° Celsius. Set the freezer temperature to 0° Fahrenheit or -18° Celsius.
- Place a digital data logger, inserted into a thermal buffer, such as glycol, in the center of the unit. If the unit is purpose built for storing vaccines or medical supplies, placement of the buffered probe can be adjusted, effective March 2016<sup>2</sup>. For more information on thermometer requirements, see the [NYSDOH Temperature Monitoring Device Guidance](#). Do not place the temperature probe on glass shelving as this may lead to false temperature readings.
- Monitor the temperatures in any new or repaired unit(s) for at least five days before moving vaccine into them.
- Refer to the [manufacturer product inserts](#) that come with each vaccine and diluent to learn the most up-to-date storage and handling practice for that product.

## Transferring Vaccine into the Unit(s)

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***The temperatures must have remained in range in the unit for at least five days before vaccines can be moved into it.***

- Keep vaccines and diluents in their [original packages](#) with lids closed until ready for administration.
- Vaccine should be placed in breathable plastic or mesh baskets, grouped by pediatric, adolescent and adult types and labeled accordingly. *Note: These baskets should be placed at least 2-3 inches from walls and other baskets. This will allow air to circulate around the vaccine.*
- Label pediatric and adult versions of the same vaccine to avoid confusion and store on separate shelves.
- Keep vaccines with similar packaging and names on different shelves. (e.g. DTaP and Tdap, Hib and Hep B)
- Vaccines with shorter expiration dates should be kept toward the front of the shelf.
- Vaccines should always be stored on the middle shelves of the refrigerator.
- Refrigerated vaccines should never be placed directly under cold air vents, which are commonly found near the top shelf.
- **Never store food or beverages in a storage unit that is used to store vaccines.**



Reprinted from the CDC's Vaccine storage and Handling Toolkit

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<sup>2</sup> Previous NYS VFC program requirements indicated that a buffered probe must be centrally located. However, an allowance for purpose-built units can be made if either 1) the thermometer is built in to the unit and cannot be adjusted or 2) the location of the probe port dictates that the probe be placed non-centrally.

## Resources

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***New York State Department of Health, Vaccines for Children (VFC) Program***

Phone: 800–543-7468 Email: [nyvfc@health.ny.gov](mailto:nyvfc@health.ny.gov)

<http://www.health.ny.gov/vfc>

***Centers for Disease Control (CDC), Vaccine Storage and Handling Toolkit***

<http://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf>

***Immunization Action Coalition (IAC), Clinic Resources, Storage and Handling***

<http://www.immunize.org/clinic/storage-handling.asp>

***American Academy of Pediatrics (AAP), Vaccine Storage Document***

[https://www.aap.org/en-us/Documents/immunization\\_vaccinestoragerf.pdf](https://www.aap.org/en-us/Documents/immunization_vaccinestoragerf.pdf)