2013 Refrigerator & Freezer Guide

VERMONT DEPARTMENT OF HEALTH
healthvermont.gov

Purpose of this guide

In response to the Centers for Disease Control and Prevention (CDC) requirements and recommendations for vaccine storage, the Vermont Department of Health (VDH) Immunization Program is providing the following guidance on vaccine storage equipment. While the VDH Immunization Program does not recommend or endorse specific brands of vaccine storage units, the products listed in this guide are appropriate for use by any VFC/VFA clinic and cover a range of price points and styles to fit any size clinic or budget. Ultimately, the terms, conditions, price, etc. related to your purchase are between you and the vendor.

Requirements and Recommendations

Vaccine storage units must be selected carefully and used properly. Whenever possible, choose a lab-grade refrigerator and freezer for your vaccine storage. If this is not a feasible option, choose separate (under counter or full-size) units instead. A domestic refrigerator/freezer is acceptable for VFC/VFA vaccine storage. The temperature must be maintained between **2°C to 8°C for a refrigerator and -50°C to -15°C for a freezer.**

The use of stand-alone units is best practice. CDC recommends the use of stand-alone refrigerator and freezer units (self-contained unit that only refrigerates or freezes and is suitable for vaccine storage). Studies conducted by the National Institute for Standards and Technology (NIST) have demonstrated that the freezer section of combination units is not capable of reliably maintaining appropriate frozen vaccine storage temperatures. Units vary in size, from a compact, under-the-counter style to a large, stand-alone, pharmaceutical grade storage unit. The use of **dormitory or bar-style refrigerator/freezers is not allowed** at any time for Vaccines for Children (VFC) and Vaccines for Adults (VFA) program providers.

The characteristics of an appropriate storage unit include:

- enough room to store the year's largest inventory without crowding;
- provide sufficient room to store water bottles in the refrigerator and frozen coolant packs in the freezer to stabilize the temperature.

Frost-free or automatic defrost cycle units are preferred. Because freezing of refrigerated vaccines affects vaccine potency, it is especially important that refrigerators be selected and maintained to eliminate the risk of freezing vaccine. When using a combination household refrigerator/freezer unit to store refrigerated vaccines, using only the refrigerator compartment is an alternative to stand-alone units. The combination household refrigerator/freezer must have separate exterior doors and thermostat controls. A separate stand-alone freezer should then be used to store frozen vaccines.

Freezerless/Standalone Refrigerators

These units are found in home and appliance stores as well as through online retailers. Higher-end model are sometimes referred to as “commercial-grade” and are most often used in the food service industry. Use of stand-alone units is the best practice. NIST has demonstrated that freezerless/stand-alone refrigerators are reliable at keeping vaccine storage temperatures. Also, separate units reduce the risk of freezing refrigerated vaccine, increases storage space and reduce compressor wear associated with a dual zone system.

If you choose a freezerless/standalone refrigeration unit, some essential features to look for are:

- Ample room to store all vaccine on the **middle 2-3 shelves;**
- Fully adjustable shelves;
- Sufficient room to store water bottles;
- Adequate capacity to store year’s largest vaccine volume **without crowding.**

Warning

Freezing vaccine: Never store freeze-sensitive vaccine near the cold air vent because the air blowing out of the vents can be at below freezing temperatures.

Quick picks: Freezerless/Standalone Refrigerators

Frigidaire 16.7 cu. ft. Freezerless Refrigerator Model# FRU17G4JW	
Whirlpool 17.7 cu. ft. Upright Refrigerator ENERGY STAR® Model# EL88TRRWQ	
Frigidaire 19.53 cu. ft. Refrigerator (FCRS201) Model# FCRS201RFB	

Marvel Scientific 17CAR General Purpose High Capacity Refrigerator	
Follett REF20-LB Medical–grade Refrigerator	

Under counter Refrigerators

Under counter refrigerators and freezers are excellent choices for those clinics with limited space for vaccine storage. These are not to be confused with dorm-style refrigerators (see warning at end of this section). Under counter refrigerators are high quality stand-alone units that allow for the storage of refrigerated vaccines only. Benefits of under counter refrigerators include:

- **Lower risk of catastrophic loss.** Separate compressors and condensers decrease the risk of a total vaccine loss that might occur in a combined refrigerator/freezer unit.
- **Stability of temperatures.** Because these units are only required to hold a single set temperature they are not constantly re-adjusting and “sharing” cold air between the refrigerator and freezer.

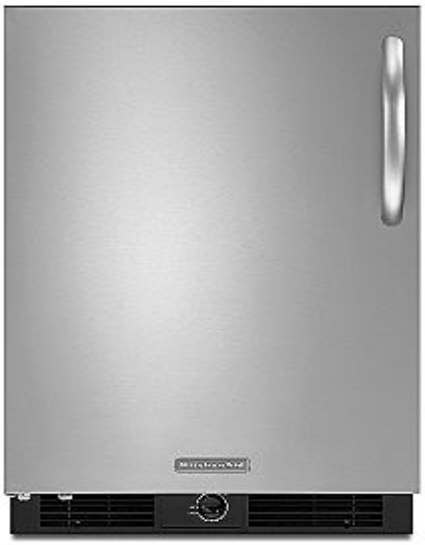
- **Cost benefit.** If a clinic is looking to add to their existing refrigerator capacity, this option may negate the need to buy a new larger, more expensive bigger standalone unit.

Warning

Dormitory-Style Units- Small single-door (dormitory-style or bar-style) combined refrigerator-freezer units **must not be used** for vaccine storage. The freezer compartment in this unit is incapable of maintaining temperatures cold enough to store MMRV, varicella, and zoster vaccines. If attempts are made to cool the freezer compartment to the appropriate temperature, the temperature in the refrigerator compartment will fall below the recommended range, potentially freezing the refrigerated vaccines.

Quick picks: Undercounter Refrigerators

Danby 4.4 Cu. Ft. Designer Compact All Refrigerator - Black with Spotless Steel Door ENERGY STAR®	

Danby 2.5 Cu. Ft. Designer Compact All Refrigerator - Black ENERGY STAR®	
KitchenAid 6 cu. ft. Under Counter Refrigerator Model# KURS24LSBS	
Sanyo SR-L6111W Laboratory Appliance Series	

Stand-alone Freezers

Stand-alone freezers are recommended for storage of frozen vaccine over combination refrigerator/freezer units. Use of stand-alone units is a best practice, and the NIST has demonstrated that stand-alone freezers are reliable at maintaining frozen vaccine storage temperatures.

- Freezers must be frost-free or have a defrost cycle to remove any build-up frost.
- Freezers must have shelves so vaccine is not sitting on the floor of the freezer.
- Freezers must have enough capacity to store year's largest vaccine volume **without crowding.**

Quick picks: Freezers

Frigidaire 13.7 cu. ft. Upright Freezer (FFU14F7H)	
5.0 cu. ft. Commercial Built In Frost-Free Freezer w/Lock, SS Cabinet & Black Kickplate SCFF55LBLCSS	

Kenmore 20.6 cu. ft. Upright Freezer	
Sanyo Under counter Laboratory Freezer (SF-L6111W)	

Medical Grade Manufacturers to Consider

Sanyo Biomedical
http://www.sanyobiomedical.com
Helmer
http://www.helmerinc.com
Lab Research Products
http://www.labresprod.com
Fisher Scientific
http://www.fishersci.com
Follett
http://www.follettice.com
Thermo Scientific
http://www.thermo.com
Gem Scientific
http://www.gemref.com

Used and Refurbished Refrigerators and Freezers

There are several used and remanufactured equipment vendors online. Prices are often 30% - 50% lower than retail. Consider calling your manufacture of choice and asking about used or “scratch and dent” items. Helmer, for example, has a rotating inventory of “scratch and dent” units that come with a much lower price tag and a full warranty.

Tips for proper vaccine storage and handling

- Store vaccine in the center of the unit, at least 2-3 inches away from the walls, floor, coils and ceiling of the storage compartment.
- Never store vaccine inside crisper bins, in the unit door or on the unit floor.
- Record temperatures **twice a day** on all storage units used for vaccine using the state supplied data logger or other calibrated, certified thermometer.
- Record Min/Max in the morning.
- Never store vaccine in a dorm-style refrigerator, not even temporarily.
- Conduct weekly inventory to assure rotation of vaccine.
- Store water bottles marked “Do Not Drink” in the refrigerator to help maintain temperature.
- Store cold packs or other ice-filled containers in the freezer to help maintain temperature.
- Call **the Immunization Program immediately** if your vaccine has been exposed to an out-of –range temperature.