

MDHHS Guidance on Temperature Monitoring

This handout provides guidance on temperature monitoring for all providers. Temperature monitoring is imperative to effective vaccine management. The Michigan Department of Health and Human Services (MDHHS) follows recommendations set forth by the Centers for Disease Control and Prevention (CDC). Michigan Vaccines for Children (VFC) providers **must** follow additional guidelines outlined in the VFC Resource Guide at: www.michigan.gov/vfc. Refer to the manufacturer's product information for the most up-to-date storage equipment guidance.

Storage Unit Temperatures

- Required temperature ranges for storage units are:
 - Refrigerator should maintain temperatures at 36.0°F to 46.0°F (2.0°C to 8.0°C); aim for 41.0°F (5.0°C)
 - Freezer should maintain temperatures at -58.0°F to +5.0°F (-50.0°C to -15.0°C)
 - Set at the factory-set or midpoint temperature to assure appropriate frozen temperatures

Safeguard Temperatures Inside Storage Units

- Only the vaccine coordinator or back-up coordinator should adjust the temperature
- Place warning signs on each unit stating, "Do not unplug!" and "Do not adjust temperature controls!"
 - Signs are available in the CDC Storage and Handling Toolkit:
www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf
- Stabilize temperatures in the storage unit with water bottles
- Refer to storage unit manufacturer guidance due to certain pharmaceutical-grade and purpose-built units not needing the use of water bottles for temperature stabilization
 - Store water bottles labeled "Do Not Drink" on the top shelf, floor, and door of the refrigerator
 - Store water bottles along the walls, back, door, and bottom of the freezer
- Limit the number of times the unit door is opened and check the door during the day and at the end of each workday to ensure it is closed tightly and sealed
- Remove any deli, fruit, and vegetable drawers from the storage unit to allow room for water bottles
- Be familiar with freezer defrost guidance; if using a manual defrost freezer, develop a plan for defrosting the unit while appropriately storing and monitoring vaccine in another freezer
- Thermometer placement is **important**; place thermometer probe in the center of the unit with vaccines
- Do a daily visual inspection to ensure temperature monitoring device is properly positioned and functioning

Thermometers

- It is recommended to only use calibrated thermometers with a Certificate of Traceability and Calibration Testing that has not expired
- CDC and MDHHS recommend digital data loggers (DDLs) with a detachable probe in a buffered material (e.g., glycol) with continuous temperature monitoring and recording capabilities (required for VFC providers); temperature should be readable from outside of the unit with these additional CDC-recommended features:
 - Alarm for out-of-range temperatures
 - Display current temperature, plus minimum & maximum temperatures on an active display screen
 - Be within +/- 1°F accuracy (+/- 0.5°C)
 - Low battery indicator
 - Memory stores at least 4,000 readings, device will not write over old data, and stops recording when full
 - User programmable logging interval (or reading rate) of at least every 30 minutes
 - If no interval setting of 30 minutes, use an interval less than 30 minutes

Monitor Temperatures

- Assess and record temperatures twice a day: in the AM when clinic opens & 30-60 minutes before leaving for the day, ensuring temperatures are maintained and consistent
 - Document temperature, time, and initials on a temperature log, and post logs on each storage unit
- If using a DDL: assess, record, and **RESET** the minimum/maximum temperatures every AM
 - For further guidance, review “MDHHS Digital Data Logger Tip Sheet”
- Download and assess stored temperature data from the DDL weekly

Out-of-Range Temperatures

- If **any** temperature monitoring device shows an out-of-range temperature, take **IMMEDIATE** corrective action
 - Notify primary and backup coordinator; determine the cause, correct it, and document actions taken
- Follow your Emergency Response Plan; for further guidance, refer to the MDHHS and CDC websites at www.michigan.gov/vaccinequicklooks and www.cdc.gov/vaccines/recs/storage
- If vaccines are involved in a temperature excursion, immediately separate all compromised vaccine in a paper bag, mark “Do Not Use,” and place in the proper storage unit
- Do **not** discard vaccine; **ALWAYS** call the vaccine manufacturer and if VFC vaccine is involved, contact your LHD

Key Points to Remember

- VFC providers are required to follow the guidelines within the VFC Resource Guide at www.michigan.gov/vfc
- Routine monitoring will identify out-of-range temperatures quickly and allow you to take immediate action, preventing loss of vaccines and potential revaccination of patients
- Temperatures can vary in storage units based on contents, how often the door is opened, and power interruptions
- Thermometers not recommended by CDC are alcohol or mercury thermometers, even if placed in a fluid-filled biosafe liquid vial; bi-metal stem thermometers; food thermometers; chart recorders; infrared thermometers; and non-calibrated thermometers
- Remember storage units can “die” slowly; if thermostat must be turned colder and colder or you notice a pattern in temperature data, it may be time to look at new equipment
- Consider an alarm/notification system; these systems alert staff to temperature changes, however, should not be used to record temperatures
- All temperature data, including temperature logs, should be stored for at least 3 years
- Know resources; review MDHHS guidance & CDC’s Storage and Handling Toolkit for current information
- Complete the “Checklist for Safe Vaccine Storage and Handling” at the Immunization Action Coalition at www.immunize.org to be sure you are safeguarding your vaccine supply

See CDC’s “Vaccine Storage and Handling Toolkit” at www.cdc.gov/vaccines/hcp/admin/storage/index.html. MDHHS guidance for vaccine storage and handling can be found at www.michigan.gov/immunize.