



# Communiqué

## Contingency Plan for Vaccine Refrigerators During Power Disruption and Equipment Malfunction

### Be prepared for Power Failures

Not that long ago Haldimand-Norfolk experienced a severe wind storm that caused power disruption lasting days in some cases. Some information in this Communiqué is a repeat of a previous edition outlining what facilities storing publicly funded vaccines must do to be prepared for power outages.

Please keep in mind in order to be effective, the vaccines being administered to clients must be kept stored according to ministry and manufacturer standards.

Various situations may compromise vaccine storage conditions; for example, equipment failures, power outages or natural disasters. Ensure that all staff (current and new) has appropriate training so that they understand the urgent vaccine storage and handling protocols and their responsibility to maintain the cold chain. Also ensure that janitorial staff and security staff are aware of the plan and know the procedures to notify designated personnel about any problems with vaccine storage equipment. Review and update the contact lists in the plan as staffing changes occur. Review and update the entire protocol annually.

- Ensure the appropriate handling of the vaccine during a power outage or equipment malfunction.

- Ensure designated staff who will attend to after-hours emergencies have 24-hour access to the building and vaccine storage unit(s).
- Ensure that sufficient fuel and/or battery power is on hand to continuously run a backup generator for at least 72 hours if the facility has one.

### Alternate vaccine storage facility or facilities

- Establish working agreements with at least one alternate storage facility with a backup generator, where vaccine can be appropriately and securely stored and monitored for the interim (e.g., the Health Unit, hospital or community pharmacies, or long-term care facilities that meet your requirements).
- Make advance arrangements with the facility to store your vaccine when your vaccine storage equipment cannot be repaired, or when the power cannot be restored before the vaccine storage unit temperature rises above the recommended range of 2°C to 8°C.
- Develop written protocols for transporting vaccine to and from the alternate vaccine storage facility.
- If the vaccine can be moved to the alternate facility before the vaccine storage temperature goes outside the recommended range, it may be transported in appropriately insulated and packaged hard-sided coolers, within ordinary vehicles, inside the passenger compartment.
- Make advance arrangements for a primary and backup vehicle and a driver, and record the contact information.

Have written instructions for entering your facility and vaccine storage spaces in an emergency if the building is closed or if it is after hours.

In situations where an alternate vaccine storage facility with a backup generator cannot be identified within a reasonable distance, maintain the appropriate packing materials to temporarily and safely store vaccine at your facility if needed.

### Packing Materials for Vaccine Transport or Storage

Appropriate packing materials to safely transport or temporarily store vaccine include:

- Insulated, hard-sided cooler.
- Refrigerated insulating blankets (2).
- Frozen packs (may be gel or ice).
- Minimum-maximum thermometer.

Notify staff at the alternate vaccine storage facility before moving your vaccine. Call the alternate storage facility to make staff aware of the situation and to ensure that their backup generator is working.

By understanding and implementing proper vaccine storage and handling practices, staff in physicians' offices and other health care facilities that provide publicly funded vaccine can play a critical role in improving the health of Ontarians by ensuring that the administered vaccines retain their potency and that vaccine wastage is reduced.

Source: *The Public Health Agency of Canada; National Vaccine Storage and Handling Guidelines for Immunization Providers, 2007*

# The Importance of Cold Chain

## Contingency planning for refrigerator malfunctions and electricity disruptions

Vaccines are sensitive biological substances that can lose their potency and effectiveness if they are exposed to heat and/or direct sunlight or fluorescent light. For example, certain vaccines lose potency when exposed to room temperature for as little as 30 minutes or when exposed to light. Freezing damages most vaccines. Exposed vaccines can result in a reduced immune response and/or increased local reactions. The loss of vaccine potency cannot be reversed.

Each physician's office/facility should have a contingency plan for vaccine storage in the event of a refrigerator malfunction or electricity disruption. Arrangements should be made in advance with a facility that has a backup generator/power source.

### What do I do?

#### Electricity Disruptions (localized or general)

Record the time and internal temperature (maximum, minimum and current) of the non-functioning refrigerator (as soon as possible after the start of the electricity disruption) in the vaccine temperature log book and reset the thermometer.

#### I. Electricity disruption of four hours or less:

The refrigerator door should be kept closed.

- Continue to monitor the refrigerator temperature using the maximum-

minimum thermometer:

- Storing full water bottles in the doors and empty shelves will help maintain a more stable internal temperature for a longer period; (the aim is to keep the temperature between 2°C and 8°C).

#### 2. Electricity disruption: four hours or more:

Remove the vaccines from the non-functioning refrigerator. Place them in an insulated, hard-sided container that has been preconditioned. Please refer to insert, "Maintaining the vaccine Cold Chain; Preconditioning and packing Instructions for hard-sided Coolers/Vaccine transporter Packing Instructions". Follow the instructions.

- If possible, transfer the vaccines to a **functioning monitored** refrigerator (i.e. in a facility that has power or a backup generator). The refrigerator should be monitored with a maximum-minimum thermometer.

#### If vaccines cannot be transported to a functioning and monitored refrigerator:

- Keep the vaccines in the non-functioning refrigerator and place icepacks in the door and on empty shelves (if required and/or available) to help maintain temperature in the 2 to 8°C range.
- Keep the refrigerator doors closed. Opening the doors will let cool air out and warm air in.

- Keep the ambient temperature in the office low (i.e. close window blinds) in the summer. In the winter, protect the ambient temperature from extreme cold or freezing.
- Continue to monitor and record (maximum, minimum and current) vaccine temperatures twice daily.
- Transfer the vaccines to a functioning, monitored refrigerator as soon as possible.
- Call the Health Unit for further advice. **DO NOT USE OR DISCARD THE VACCINE UNTIL THE HEALTH UNIT HAS ASSESSED THE SITUATION.**

#### If the temperature is below 2°C or above 8°C:

- Call the Health Unit immediately. All vaccines need to be assessed to determine if the vaccine potency has been affected by storage temperatures below 2°C or above 8°C during the electricity disruption.
- NOTE: Insulated containers will only keep vaccines at the appropriate temperatures for a short period of time. Vaccines will need to be moved to an alternate **functioning, monitored** refrigerator if the primary vaccine refrigerator does not stabilize at the required 2°C to 8°C range within a couple of hours.

Source: Ministry of Health and Long-Term Care, Ontario; Vaccine Storage and Handling Guideline, 2006.

## Quick Tips

### To help cut down on publicly funded vaccine wastage:

- Have a contingency plan in case of a power failure.
- Consider purchasing a battery back-up power system for your vaccine fridge. Several products are available that will automatically switch over to battery back-up when there is power failure.
- Keep a minimum amount of stock on hand.
- Call the health unit immediately to report a break in cold chain (any time the temperature falls below +2°C or above +8°C).

# Maintaining the Vaccine Cold Chain

## Preconditioning and Packing Instructions for Hard-Sided Coolers

Research has shown that a properly packed cooler for transporting vaccine can safely maintain cold chain (between 2°C and 8°C) for 1 ½ hours during transport. The Health Unit has supplied hard-sided coolers to transport vaccine from the Health Unit to physician's offices. The old blue soft-sided coolers will no longer be used. Included with the hard-sided cooler are two flexible insulating blankets, a min-max thermometer and a gel pack. Please use the following instructions to condition the cooler and pack vaccine for transport. There are different instructions for summer (April until October) and winter (October until April). Summer configuration has a frozen gel pack on the top of the insulating blanket and the winter configuration has a chilled gel pack on top of the insulating blanket.

### Summer Configuration:

**EQUIPMENT MUST BE PRECONDITIONED PRIOR TO USE.**

1. Precondition:
  - a.)The cooler: **Place three frozen gel packs inside the cooler for 20 minutes** prior to leaving the office.
  - b.)The flexible insulating blankets: **Place in the refrigerator for at least two hours prior to use.** Many offices store them in the fridges.
  - c.)The maximum-minimum thermometer: **Place in refrigerator for at least two hours prior to use.**

Just prior to leaving your office remove

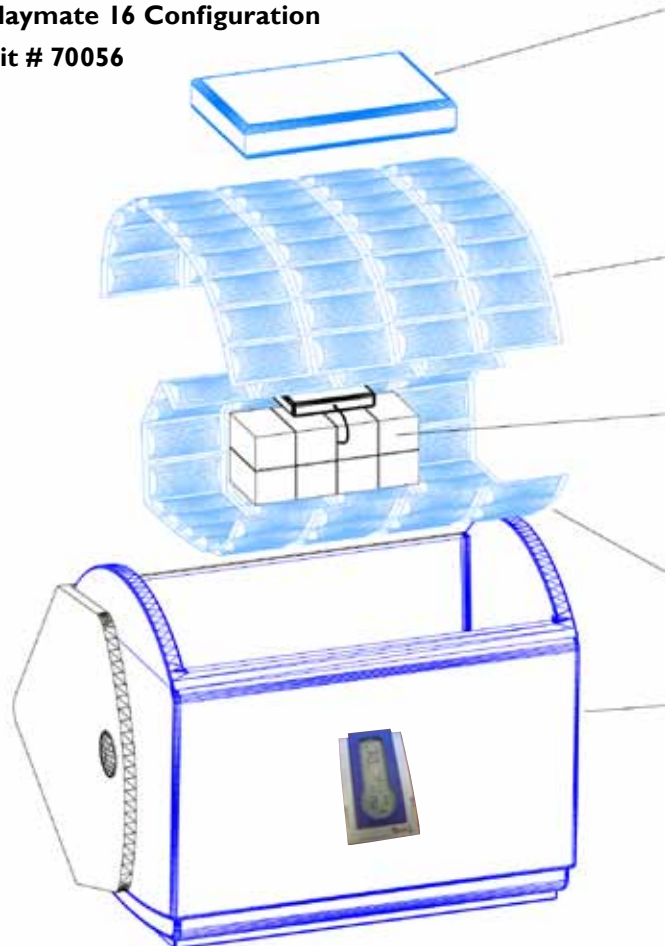
the three frozen gel packs from the cooler. Working quickly, wrap the probe of the min-max thermometer in the insulating blankets, put a frozen pack (fresh from the freezer-not used to condition the cooler) on top and place all in the hard-sided cooler. The "out" temperature reading must be between 2°C and 8°C.

2. When picking up vaccine at the Health Unit or your designated pick-up location, the minimum-maximum probe must be placed inside the cooler with the vaccine and the display must be visible on the outside of the cooler. The vaccine is then wrapped on the bottom in a flexible, insulating blanket.

### Vaccine Transporter Packing Instructions

#### Playmate 16 Configuration

Kit # 70056



**624g (22 oz) Soft-Sided Gel Pack 81011**  
**13cm x 23cm x 3cm**  
**Freezer Ice Packs (temperatures -10°C to -20°C)**

Precondition ice packs prior to packing vaccine.

- Consider differences in summer and winter transport conditions.
- Winter transport may require gel packs to be preconditioned from the refrigerator at 2°C to 8°C.

#### **Outer 12 ml Flexible Insulating Blanket 85000**

- Pre-conditioned in fridge at 2°C to 8°C wrapped around vaccines and inner, flexible, insulating blanket.

#### **Vaccines**

- Stored in refrigerator at 2°C to 8°C.
- Position min/max thermometer probe inside a vaccine box.

#### **Inner 12 ml Flexible, Insulating Blanket 85000**

- Pre-conditioned in refrigerator at 2°C to 8°C wrapped around vaccines.

#### **Playmate 16 Insulated, Hard-sided Cooler 70028**

15 l (16 qt) interior volume.

25.9cm x 40.3cm x 37.8cm H outside dimensions.

- Pre-chill insulated cooler with ice packs from the freezer prior to packing vaccine.

*Note: Additional ice packs may be required depending on cold-life needed for the length of transport. Additional insulating material, e.g. bubble wrap, Styrofoam chips, crumpled or shredded newspaper, may also be required (placed on the bottom of the cooler) to allow for cool air circulation.*

3. The second insulating blanket is then placed on top of the vaccine.

A frozen gel pack (which has been in the freezer for at least 12 hours) should be placed on top of the flexible, insulating blanket. For outside temperatures over 38°C, add an additional frozen gel pack on the top.

### Winter Configuration:

#### EQUIPMENT MUST BE PRECONDITIONED PRIOR TO USE.

1. Precondition:
  - a.)The cooler: **Place three frozen gel packs inside the cooler for at least 20 minutes** prior to leaving the office.
  - b.)The flexible insulating blankets: **Place in the refrigerator for at least two hours prior to use.** Many offices store them in the fridges.

- c.)The maximum-minimum thermometer: **Place in the refrigerator for at least two hours prior to use.**

Just prior to leaving your office remove the frozen gel packs from the cooler. Working quickly, wrap the probe of the min-max thermometer in the insulating blankets, put a pre-conditioned gel pack (chilled in the fridge, not frozen-see #4) on top and place all in the hard-sided cooler. The "out" temperature reading must be between 2°C and 8°C.

2. When picking up the vaccine from the health unit or designated pick up location, the min-max probe must be placed with the vaccine inside the cooler and the display must be visible on the outside of the cooler. The display must read in the 2° to 8°C range. The vaccine is then placed, with the

probe, on the bottom flexible, insulating blanket.

3. The second flexible, insulating blanket is wrapped on top of the vaccine.
4. The gel pack, which has been **pre-conditioned in the refrigerator for two hours**, is placed on top of the insulating blanket.

**The vaccine must be immediately transported to your facility and placed in the vaccine refrigerator.** Should the temperature go below 2°C or above 8°C call the Health Unit for instructions. We have a diagram included with written instructions.

If you have any questions concerning the coolers or cold chain please call a member of the Vaccine Preventable Disease Program at the Health Unit at 519-426-6170 or 905-318-6623.

## Coming Soon: Expansion of the Publicly Funded Immunization Program

The Ministry of Health and Long Term Care will be notifying all vaccine providers of the recent announcement made by the Minister of Health that starting August 2011, the province will expand the publicly funded immunization program to include the following:

- A new oral rotavirus vaccine to protect infants against rotavirus, which causes severe diarrhea, vomiting and dehydration;
- A combined Measles-Mumps-Rubella-Varicella (MMRV) vaccine that will reduce the number of immunizations a child needs. Varicella is currently given as a stand-alone vaccine;
- A second childhood dose of varicella vaccine to enhance protection against chicken pox; and
- A lifetime dose of pertussis (whooping cough) vaccine to adults age 19-64, who often pass this highly-contagious disease to infants and children.

**...Stay tuned for more information...**