



# Communiqué

## Don't Break The Chain!

Remember when you were a kid and got those silly letters coercing you into sending six more letters out to friends who really didn't want them either? Those were called chain letters. But this article refers to a different kind of chain, one of far greater importance and operational significance.

The **cold chain** refers to the system used for keeping and distributing vaccines in good condition. It consists of a series of procurement, storage and transportation links, all of which are designed to keep the vaccine at the correct temperature until it is administered to an individual. All vaccines are temperature sensitive and need to be properly stored and distributed within efficient cold chain guidelines. Vaccines are sensitive biological substances and all will lose their potency (their ability to give protection against disease) if exposed to improper temperatures. By understanding and implementing proper vaccine storage and handling practices, staff in physicians' offices and other health care facilities 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.

New vaccine storage and handling guidelines packages were issued by the Ontario Ministry of Health and Long-Term Care in January 2006 and distributed to you by the Haldimand-Norfolk Health Unit. Each package consisted of a coil-ringed 8 1/2" x 11" booklet entitled *Vaccine Storage and Handling Guidelines*, a new poster for your vaccine fridge called *Protect Your Vaccines – Protect Your Patients*, a small poster for your vaccine fridge called *How to Monitor Your Refrigerator Temperature* and a *Do Not Unplug* sticker to be placed next to the vaccine fridge outlet. Magnets with peel-off backs were also supplied to attach the posters to your refrigerator.

*The Vaccine Storage and Handling Guidelines* is a 15-page, easy-to-read guide that describes the actions you should take to maintain the required temperature and minimize wastage, how to read a minimum-maximum thermometer, and the importance of reading and recording temperatures at the start and end of the day. One staff should be trained and responsible for cold chain monitoring and another staff should be trained as back-up. A break in cold chain can occur if there is a power interruption/failure, refrigerator



failure or human error (e.g., leaving the door ajar). Reaction to cold chain failure varies somewhat, depending on the cause.

## What to Do When There is a Power Interruption/failure or Refrigerator Failure

### When the electricity is disrupted for four hours or less:

- Keep the refrigerator door closed.

### When the electricity disruption continues for more than four hours:

- Remove the vaccines from the non-functioning refrigerator and put them in an insulated container with icepacks and a thermometer.
- If possible transfer the vaccines to a functioning refrigerator and monitor with the minimum-maximum thermometer. Have a contingency plan. Some facilities have generator back-up and you may be able to make an agreement with them, **in advance**, to transfer your vaccines to their location. Some area locations with generator back-up are hospitals; the Haldimand-Norfolk Health Unit, Simcoe office; and pharmacies. Vaccines could also be moved to an extra home refrigerator that is working. Do not use a kitchen refrigerator because the temperature fluctuates every time the door is opened.
- If they can't be transported to a functioning refrigerator, leave them in the non-functioning one and, if possible, place frozen icepacks in the refrigerator to help maintain the correct temperature.
- Keep the refrigerator doors closed.

- Keep the ambient temperature in the office low.
- Continue to monitor and record temperatures twice daily.
- Transfer the vaccines to a functioning refrigerator as soon as possible.
- Call the Haldimand-Norfolk Health Unit at 519-426-6170 or 905-318-6623 for further advice.

## What to Do if the Cold Chain is Broken

**If the temperature reaches below 2°C or above 8°C your vaccines have had a cold chain exposure. In this case you should:**

- Put the vaccines in a bag or container and label **“DO NOT USE.”** Also indicate the date and time on the bag/container. Do not use any vaccines until they have been assessed by the Health Unit to determine whether or not they can be used.
- Call the Haldimand-Norfolk Health Unit immediately at 519-426-6170 or 905-318-6623 to report the vaccine exposure.
- Check the thermometer and probe placement. If uncertain about the efficacy of the thermometer, change the battery. Check to be sure the refrigerator plug is inserted properly into the wall outlet.
- Record the date, time and temperature in your log book. Always remember to reset the thermometer after each recorded temperature.
- If possible, move the vaccines to a properly functioning, monitored refrigerator or place the vaccines in an insulated container with frozen ice packs and a minimum-maximum thermometer. This will help to avoid vaccine wastage.
- **Never remove the vaccines from the refrigerator and place on the counter and never use the vaccines until they have been assessed by the Health Unit.**

Vaccine that has been determined “spoiled” by the Health Unit, or vaccine that has expired, must be returned to the Health Unit.

## Avoiding Problems – Key Points

- Bottles of water stored on the door racks and on the bottom shelf of the refrigerator will help to maintain an even, stable temperature.
- Ice packs kept in the freezer compartment, along with the bottles of water on the door racks, will help to keep the temperature from increasing in the event of a refrigerator failure.
- The thermometer probe should be placed in the center of the refrigerator. Fastening it to the inside of an empty box, and the box to the center rack, will help to reduce changes in the temperature reading each time the refrigerator door is opened. This will reflect a truer picture of the vaccine temperatures.
- Vaccines should be stored according to expiration dates. The most recent expiry date of each vaccine type should be at the front for first use.
- Don't assume that vaccines can't be salvaged following a cold chain disruption. Always package them, mark them

“Do Not Use,” keep them in the best available monitored and refrigerated area, and contact the Health Unit immediately for assessment and instruction. The best refrigerated area may be the refrigerator that they're currently in, another working refrigerator or an insulated cooler with ice packs. **Never remove the vaccine from the refrigerator and leave in room temperature.** Depending on specifications from the manufacturer and the Ministry of Health and Long-Term Care, the vaccine may still be useable. This will be determined by the Health Unit.

- Keep your booklet Vaccine Storage and Handling Guidelines near your vaccine refrigerator for easy reference.
- Keep your small and large posters on your refrigerator for quick access to daily monitoring instructions and quick access to public health's number. Write it in the space provided – 519-426-6170 or 905-318-6623.

## For Your Information

Last year in Haldimand-Norfolk, vaccine costing more than **\$23,000 was spoiled**. Some of this wastage was unnecessary. (Vaccine was removed from the refrigerator following exposure before contacting public health for advice.) Let's do better this year and be more aware of cold chain procedure guidelines. Dig out that booklet, read it, follow the instructions and contact the Health Unit each time you have a break in cold chain. Call us if you need another copy of the Vaccine Storage and Handling Guidelines.

Sources: 1. Vaccine Storage and Handling Guidelines 2006, Ministry of Health and Long-Term Care. 2. National Defence Canada, Canadian Logistics Branch, Bulletin – Volume 6 Issue 2, Dec 2005.

*Communique is a newsletter distributed by the Haldimand-Norfolk Health Unit for those who work in the area of Vaccines and Vaccine Preventable Diseases. If you have ideas or suggestions of topics for future Communiqués, please contact*



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