

Yukon Immunization Program Manual

Section 7 — Storage and Handling of Immunizing Agents

September 2026



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7.1 Background and Context of Cold Chain Management

This section outlines best practices and standards for storing, handling, and transporting publicly funded vaccines in the Yukon. Adhering to these standards ensures vaccine effectiveness, minimizes waste, and safeguards those receiving immunizations.

7.1.1 Cold Chain

The cold chain is the system that keeps vaccines at the right temperature from the manufacturer to the person getting the vaccine.

Cold chain success depends on:

- Trained staff
- Proper equipment
- Efficient vaccine management procedures

The stages of the cold chain, from manufacturer to vaccine recipient, are illustrated in *Figure 1. Cold Chain Pathway from Manufacturer to Vaccine Recipient*. Transport occurs between each stage, and careful temperature control is essential at all points to prevent a cold chain break.

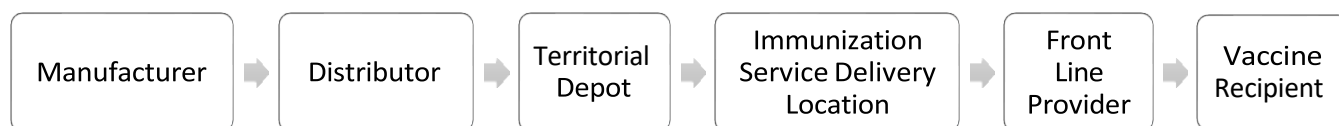


Figure 1. Cold Chain Pathway from Manufacturer to Vaccine Recipient.

A cold chain break occurs when vaccines are exposed to conditions outside of the manufacturer's requirements. This can cause permanent potency loss, particularly if vaccines freeze or are exposed to light when they should not be.

Loss of potency could result in:

- Weaker protection
- Possible vaccination failure
- Waste and extra costs
- Lower public trust

Always store vaccines as directed. If there is an issue, see [Section 7.3.4 Incident Procedures](#).

7.1.2 Personnel Requirements

All staff involved in vaccine storage and handling must complete appropriate training.

Each site must have a primary vaccine coordinator and a backup coordinator.

They are responsible for:

- Making sure vaccines are stored, handled, and transported properly
- Checking fridges, freezers, and monitoring devices
- Managing inventory, and recording waste
- Acting right away if there is a cold chain issue

See Section [7.3.2. Staff Training](#) for more details.

7.1.3 Equipment Overview

The cold chain depends on special equipment to maintain vaccine potency. This may include:

- Purpose-built vaccine fridges and freezers
- Calibrated thermometers and data loggers
- Insulated containers for transport

Check and maintain all equipment regularly to meet standards. For more details, see [Section 7.2.2 Storing Vaccines](#) and [Section 7.3.1 QA Schedule – Quality Assurance Calendar](#) for maintenance schedule.

7.2 Vaccine Management Practices and Procedures

7.2.1 Ordering and Receiving

Each site's primary vaccine coordinator and/or backup coordinator must be trained in Panorama Inventory as they are responsible for ordering and receiving vaccines.

Ordering Vaccines

Order only what is needed for your specific site to avoid excess inventory.

- Maintain **6 weeks of stock** for local sites (Whitehorse)
- Maintain **2 months of stock** for rural communities

Use Panorama reminder/recall reports to help determine product quantities.

Order vaccines at the end of each month or as scheduled for your community. Rush or urgent orders are discouraged and require approval by the Immunization Program delegate.

Quick reference guides (QRGs) and ordering calendars are on the YG SharePoint site (see [Section 7.4 Resources](#)):

- [Step 1 QRG: Wastage Management for Front Line User](#)
- [Step 2 QRG: Physical Count / Month End Counts](#)
- [Step 3 QRG: Ordering and Receiving Products](#)

Non-vaccine supplies (e.g. temperature monitors, thermometers, data loggers, red dot stickers) are ordered through your employer.

Receiving Vaccines

Follow these steps when a vaccine shipment arrives:

Table 1. Vaccine Receiving Checklist

Step	Action
1. Initial inspection	- Check the shipping container for damage and signs of a cold chain problem. - STOP the data logger and check recordings for any alarms or temperature excursions.
2a. If Cold Chain Incident is NOT suspected	Place vaccines in appropriate storage immediately. - Check quantity and lot numbers with the Panorama Pick List (See Figure 4. Panorama Pick List). - Correct any differences in Panorama. - Remove all packing materials to ensure no vaccines remain in the shipping container. - Notify the Yukon Immunization Program of any packing slip discrepancies.
2b. If Cold Chain Incident is suspected	Follow the Cold Chain Incident Procedure (see Section 7.3.4)
3. Additional checks	- Ensure frozen vaccines were shipped separately from refrigerated vaccines and diluents. - Verify thawed vaccines did not contact frozen packs, and transport containers are labeled. - Confirm lyophilized vaccines include the right type and quantity of diluent for reconstitution.

7.2.2 Storing Vaccines

Equipment Selection

Table 2. Vaccine Storage Equipment and Monitoring

Equipment	Requirements	Example Image
Refrigerator	- Purpose-built, lab-grade fridge - Digital temperature controls, continuous air circulation, programmed set points: +2°C to +8°C - Each storage unit must have a digital min/max thermometer with a calibrated probe. Continuous temperature monitoring using a data logger is strongly recommended. - Connect to backup power (generator or UPS); if not available, have a backup storage plan	
Freezer	- Separate unit for frozen vaccines: -25°C to -15°C - Used to store frozen vaccines (e.g., Mpox, frozen Spikevax) - Used to pre-condition ice packs for transport - Defrost if ice buildup reaches 1 cm or more	
Min/Max Thermometer	- Digital thermometer with glycol probe - Calibrated to $\pm 1^{\circ}\text{C}$ accuracy - Records minimum, maximum, and current temperatures - Keep probe in the center of the fridge (middle of middle shelf)	
Data Logger  Best Practice Quick Reference Sheet	- Measures and records temperature over time - Provides detailed temperature history - Press START right after you've finished pre-conditioning the transport container and just before you close and seal it - Press STOP when cooler is opened - Does not replace daily checks Return logger used for transport to depot ASAP	

Vaccine Storage Best Practices

For detailed storage instructions, always see [Section 8: Biological Products](#) for each vaccine.

Storage temperatures:

- Always follow manufacturer's storage and handling instructions.
- Unless otherwise specified:

Refrigerated:
+2°C to +8°C

Frozen:
-25°C to -15°C

Diluents:
follow product label

Organize stock:

- **Expiry dates must be monitored routinely. Vaccines must be removed from the fridge on the day they expire and not held until month-end counts. Panorama inventory reports, including the Item by Expiration Date (024), may be used to support this process.**
- Mark new expiry when moving product from freezer to fridge (if applicable).
- Separate pediatric and adult vaccines clearly.
 - If you can't separate, label adult vaccines: "Not for Pediatric Use."
- Rotate stock using First Expiry, First Out (FEFO). Store vaccines with the earliest expiry dates at the front for use first.

Fridge setup:

- Keep vaccines 6 inches away from cooling vents to avoid temperature fluctuations.
- Store vaccines in the middle of the fridge, away from door shelves.
- Place gel packs or sealed water bottles on the lowest shelf to help keep temperature stable.
- Leave space between products for air flow.
- Place thermometer probes in the middle of the middle shelf, not near vents, doors, or the back.
- Data loggers are strongly recommended.
- Keep the fridge door closed when not in use. Limit how long door stays open.

Protect from light: (Refer to [Section 8: Biological Products](#) for vaccine light restrictions)

- Many vaccines lose potency if exposed to light.
- Both UV light and fluorescent light can cause damage to certain vaccines.
- Store vaccines in original packaging and close boxes after removing a dose. Use amber bags if original boxes aren't available.

Vaccine Security:

- Immunization sites must keep storage units locked and/or in an area the public cannot access.

Power Supply

- Connect fridges to secure power source with backup (generator or UPS).
- If no backup is available, plan and post a power outage plan.
- Place sign above the plug: "VACCINE REFRIGERATOR - DO NOT UNPLUG"
- In the case of a Power Outage, see [Section 7.3.4 Incident Procedures](#).

Do not store food, other drugs, or lab specimens in the vaccine fridge.

7.2.3 Packing Vaccines for Transport or Shipping

Vaccines must be packed to maintain cold chain integrity throughout the entire transport process. Containers used for transport must **not be used for long-term storage**.

★ **Preferred Transport Containers: Credo Cubes**

The Yukon Immunization Program is transitioning away from standard coolers toward Credo Cubes for shipping vaccines. These containers are designed to maintain vaccines at the required temperature range for extended periods using vacuum insulation and Phase Change Materials (PCMs).

We currently use three types of Coolers:

1. Frozen Credo Cubes (e.g., for COVID-19 vaccines): maintains $\leq -15^{\circ}\text{C}$
2. Refrigerated ($2-8^{\circ}\text{C}$) Credo Cubes: For routine vaccine transport
3. Refrigerated ($2-8^{\circ}\text{C}$) Standard Coolers: For short trips or as backup if Credos are not available

Packing Instructions According to Cooler Type:	
Refrigerated Credo Cube ($2-8^{\circ}\text{C}$)	Always follow manufacturer's directions. <u>Conditioning the PCM Panels:</u> 1. Pre-condition panels in a refrigerator at $2-8^{\circ}\text{C}$ for 24 to 72 hours before use conditioned to avoid temperature spikes during transit. 2. Check surface temperature of PCM panels before packing using an IR thermometer, if available. <u>Packing Sequence:</u> 1. Line the container with conditioned PCM panels (sides, top, bottom, and lid, depending on model). 2. Place vaccines in the center cavity using barrier and filler to avoid direct contact with panels. 3. Add the Panorama requisition pick list near the top of the cooler. 4. Insert and START the temperature monitor (e.g., TempTale) next to the vaccines, not touching the walls or PCM panels. 5. Close and seal the container.

**Frozen
Credo Cube**

Conditioning the PCM Panels:

1. Freeze panels according to the manufacturer's instructions (-18°C).
2. Panels must be fully frozen before use (24hrs prior).

Packing Sequence:

Same as 2–8°C Credo Cube but using frozen PCM panels and only for vaccines that must be stored frozen.

**Standard
Refrigerated
Coolers**

Using regular coolers (for local backup or short trips), follow these guidelines:

1. Preparing the cooler:

- Pre-condition the cooler and gel/ice packs to +2°C to +8°C before adding vaccines.
- Adjust the amount of ice added based on outside temperature
- Frozen packs must be appropriately conditioned before use to prevent freezing of vaccines. Vaccines must not come into direct contact with frozen packs.

2. Packing the vaccines (layering method) ([See Figure 3 below](#)):

Bottom layer:

- Line the bottom and sides of the cooler with properly prepared ice packs, if needed for longer transport or hot outside temperature
- If using frozen ice packs, place refrigerated cold packs on top of them to buffer the temperature.
- Add a barrier (e.g., cardboard, bubble wrap) between cold packs and vaccines.

Middle layer:

- Place vaccines in their original boxes in the center of the cooler.
- Place a preconditioned data logger (between +2°C to +8°C) directly with the vaccines in the center. Ensure it is not in direct contact with any cold packs.
- Add a top barrier over the vaccines to separate them from the upper cold packs.

Top layer:

- Place enough refrigerated cold packs to fully cover the top barrier above the vaccines.
- Add frozen ice packs on top only if extra cold mass is needed (i.e., in hot weather or for longer trips).

Packing diluent

- Only include diluent if it has been refrigerated for at least 24 hours.
- If not refrigerated, transport separately.
- Use only the specified diluent for each product.

3. Final checks before transport

- Confirm the temperature inside the cooler is between +2°C to +8°C before sealing.
 - If too cold, remove or swap ice packs.
 - If too warm, add additional frozen packs and allow to stabilize before adding vaccines.
- Press START on the data logger.
- Close and seal the cooler immediately after packing.

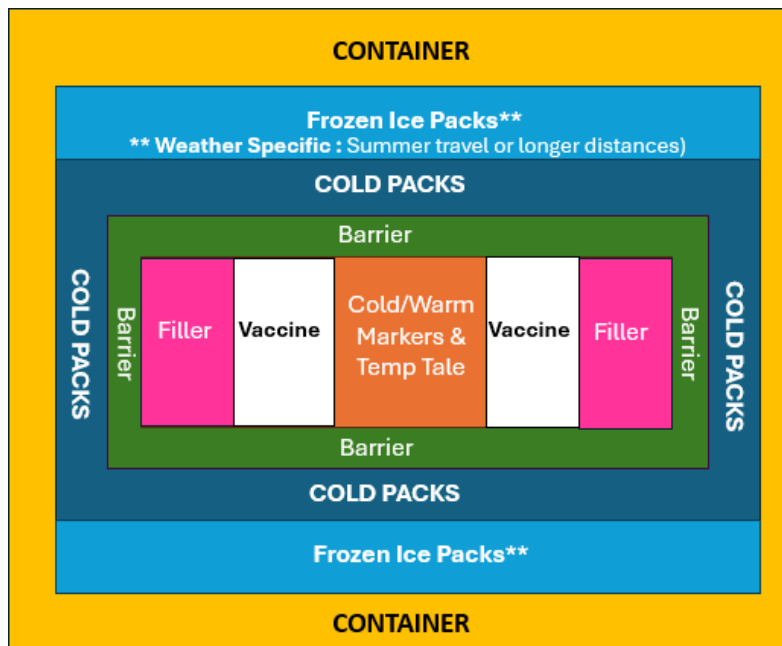


Figure 3. Example of Proper Standard Refrigerated Coolers Packing

7.2.4 Transportation Guidelines

- Minimize transport time and attend to vaccine shipments immediately upon arrival.
- Avoid placing the cooler in direct sunlight, near heat sources, or in the trunk of a vehicle.
- **Labeling requirements:**
 - **Each shipment from territorial vaccine depot must include two mandatory labels**
 - **Label 1:** Alerts the receiving facility that contents are vaccines, are temperature-sensitive, and must be unpacked and refrigerated immediately.
 - **Label 2:** Instructs the facility to **return the Credo** container and temperature monitor to territorial vaccine depot as soon as possible.
 - **If these labels are not available**, containers must be clearly marked with:
 - **“Fragile – Handle with Care”**
 - **“Keep Refrigerated”** or **“Keep Frozen”** (if applicable), especially for third-party transport.
- **Always include:**
 - **Panorama requisition pick list** with vaccine names, lot numbers, expiry dates, quantity, and date/time of packing.
 - **Temperature monitors** clearly placed next to the vaccines.
- **Transport containers must be returned to territorial vaccine depot after use.**
- **Off-site and satellite Clinics:**
 - Please follow the standard packing and transportation guidelines.
 - Consider additional strategies to maintain cold chain, including:
 - minimizing time with vaccine storage unit lid open
 - using additional frozen ice packs, as needed
 - Temperature must be monitored throughout off-site and satellite clinics. At minimum, document the temperature before departure, periodically during the clinic, and upon return. Continuous temperature monitoring using a data logger is preferred.
- **For Examples and Materials:**
 - **See Table 3:** Transport Containers and Packing Materials
 - **See Figure 3.** Example of Proper Vaccine Cooler Packing

Table 3. Transport Containers and Packing Materials

Container/Item	Key Requirements & Tips	Example Image
Credo Cube (+2°C to +8°C)	- Follow manufacturer's packing instructions - Do not use ice packs, only the provided TIC panels. These should be preconditioned for 24 to 72 hours, and liquid. - Use filler and barriers - Ensure required labels are in place - No seasonal adjustment needed - Use TempTale to monitor temperature - For transport use only RETURN to depot immediately after use	
Refrigerated Cooler (+2°C to +8°C)	- Hard-sided, strong, tight-fitting lid - Keeps vaccines at +2°C to +8°C - Sized for vaccines, ice/gel packs, barriers, and filler - Use during off-site transport or at clinics to reduce fridge openings	
Frozen Credo (-18°C to colder)	- Follow manufacturer's packing instructions - Purpose-built for frozen vaccines (e.g., Mpox, Spikevax) - Conditioned insulated container holds -18°C or colder - Ensure required labels are in place - Place a frozen pre-conditioned digital data logger inside - Do not use ice packs, only the provided TIC panels. These should be preconditioned for 24 to 72 hours, and frozen. RETURN to depot immediately after use	
Refrigerated Gel Packs	- Maintain at +2°C to +8°C - Replace according to manufacturer expiry date	

Freezer Packs	• MUST be fully frozen before use • Condition frozen packs before use to prevent freezing of vaccines. Vaccines must not come into direct contact with frozen packs. • Replace according to manufacture's directions	
Insulating Barrier	• Prevents direct contact between vaccines and cold packs (i.e., bubble wrap, brown paper, insulating blankets) • Replace according to manufacturer expiry date	
Filler	• Stops vaccines from shifting (i.e., bubble wrap, brown paper, Styrofoam peanuts, blue pads)	
Padded Envelope/ Light-Sensitive Bag	• Use if a vaccine isn't in its original box • Wrap doses well, place in padded envelope • Protects from breakage, light, contact with ice, and temp swings	

7.2.5 Handling Immunizing Agents

Table 4. Multidose Vials and Pre-drawing Vaccines

Section	Key Points
Multidose Vials	• Mark date of first puncture and new "use by" date if needed. • Disinfect vial top with alcohol swab before each puncture and let dry. • Never pool leftover doses from different vials. • Mark puncture and new expiry dates on multi-dose vials.
Pre-drawing Vaccines	• Pre-drawing is generally not recommended. • If pre-loading for mass clinics, only draw enough to keep workflow smooth. • Use doses within 30 minutes, unless otherwise specified.

7.2.6 Temperature Monitoring



Figure 8. Vaccine Fridge Alarm and Temperature Monitoring

Daily Monitoring

- Record temperature readings of fridges and freezers at least **twice** daily during each workday
 - once at the beginning of the day
 - once at the end of the day just before the door is closed for the last time.
- Record minimum, maximum and current temperature on a log sheet.
- Note on fridge temperature log if door was open longer than normal (e.g. adding new stock or completing inventory).
- Place a room temperature thermometer near the vaccine fridge to monitor ambient conditions.

Thermometer Placement

- Place the temperature probe in the centre of the storage unit, away from coils, walls, fan, door, and floor.
- If using a probe, suspend it in the middle or place it inside a box (e.g., empty vaccine box or diluent).
- Ensure airflow around the sensor is not blocked.
- Keep the display monitor portion outside the fridge, if possible, to reduce door openings.

Thermometer Function Checks

It is normal to observe slight variation in readings between different thermometers, even when the storage unit is set to a stable temperature.

If a thermometer reading remains static over several readings:

- **Basic function check:** Temporarily remove the thermometer from the storage unit and place it at room temperature. If the reading does not begin to rise within a few minutes, check or replace the batteries as per the product manual. If there is still no change, the thermometer should be replaced.

 **Note:** This test only verifies that the thermometer is responsive. It does not confirm accuracy. To verify thermometer accuracy:

- Perform a **slush test** to confirm accuracy at 0°C.

Annual Temperature Monitoring Equipment Checks

Thermometers should be checked every 6 months to 1 year to ensure the following:

- Thermometer measurement is accurate (see Slush Test below)
- Batteries are functioning and replaced
- And cables/probes are undamaged.

Slush Test:

You can test if your thermometer is accurate using this simple ice water method:

1. Make an ice water mixture:

Fill a plastic or polystyrene cup about two-thirds full of cold water. Place it in the freezer for about 2 hours, until a thin layer of ice forms on top and a bit of ice forms inside. This means the mixture has reached 0°C.

2. Insert the thermometer probe:

Place the probe in the center of the cup without touching the sides or bottom.

3. Check the reading:

After 2 minutes, the thermometer should read close to 0°C.

- If it's more than 1°C off (i.e., above +1°C or below -1°C), try replacing the battery and retest
- If it's still off, contact the manufacturer for recalibration or replace the thermometer.

Avoid comparing two thermometers to check accuracy, this is not a reliable method.

If your thermometer shows an out-of-range temperature during vaccine storage and is placed correctly, assume it's accurate. Take immediate action to protect the vaccines, then check the thermometer's accuracy and batteries once everything is safely stored.

7.3 Quality Assurance and Incident Response

7.3.1 QA Schedule – Quality Assurance Calendar

Table 5. Quality Assurance Calendar

Task	Daily	Weekly	Monthly	Quarterly	Annually	Notes
Temperature monitoring (min/max)	✓					2x/day, record current, min, max
Fridge door open > normal? Note log	✓					Note reason & duration on temp log
Review thermometer function		✓				Check battery, accuracy signs
Inspect vaccine fridge contents			Continuous			Discard expired products per label, organize stock
Physical vaccine inventory (count)			✓			As per end-of-month schedule, & per request
Review of stock expiry dates		✓				Rotate stock using FEFO
Review temperature records		✓				Review for missing readings, excursions and temperature trends.
Fridge/freezer cleaning			✓			Clean surfaces, remove dust
Equipment slush test / calibration					✓	Or as per manufacturer's guidelines
Review & update emergency contact list				✓		Ensure staff & backup coordinators are listed
Review Cold Chain Incident procedure				✓		Highly Recommended
Review CCI logs & patterns				✓	✓	Identify trends or repeat issues

7.3.2 Staff Training

Table 6. Required Training Related to Vaccine Storage and Handling (by Role)

Course/Module	Why It's Relevant	Who Should Complete It	Frequency
Panorama Inventory Module	Includes information on ordering, receiving, wasting and physical counts of vaccine. Please email immunizationprogram@yukon.ca to arrange training.	On-site Vaccine Coordinators	One-time only
Review Section 7: Storage and Handling	Covers vaccine storage and handling procedures.	All immunizers and vaccine handlers	Annually*
Review of on-site Incident Procedure plans	Prepares for cold chain breaks and power outages procedures.	All immunizers and vaccine handlers	Annually*
*Annually and whenever new vaccine products, storage or monitoring equipment, or significant storage and handling recommendations are introduced. Training completion should be documented.			

7.3.3 Incident Procedures

Cold Chain Incident (CCI) Procedure

Important: All facilities must report CCI's.

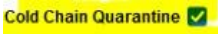
- If a CCI occurs at the Depot, affected products will arrive at your facility already labeled with a red dot and CCI subplot.
- If a CCI occurs at your facility or in transport, you must apply the red dot label and record the subplot provided by YIP.

STEP 1. Immediate action (all CCI's):

- Document the condition of the vaccines, packaging, and temperature at the time the CCI is suspected.
- Take a photo if appropriate (i.e. condition or packing configuration of product).
- Quarantine all affected biological products.
- Clearly label all products as “**DO NOT USE.**”
- Store products as per the instructions found in the [Yukon Immunization Manual – Section 8](#)

STEP 2. Depending on type of CCI:

A. CCI during transport:

- Download the data logger report.
- Confirm that the LOT numbers on your Panorama Packing List match what was received.
 - If mismatch, stop the process and contact YIP immediately.
- When receiving vaccines in Panorama, ensure the Cold Chain Quarantine button remains checked (default).  (See [QRG – Step 3 – Part B - Page 2 – Section 6](#) for details).

B. CCI Fridge Failure:

- Download the data logger report.
- Proceed to Step 3 – complete **top portion** of the CCI worksheet only.
- An updated **Panorama Count** must be completed and provided back to the YIP team to process cold chain incident and determine viability of products.

C. CCI due to Human Error (e.g., dose left on counter, cooler issue at off-site clinic)

- Proceed to Step 3 – complete **entire CCI worksheet**.
 - **Include listing of products details on the worksheet**

STEP 3. Reporting (all CCIs):

- **Fridge failure:** complete only the top portion of the CCI worksheet. YIP will support with line-by-line details.
- **All other CCIs:** complete the entire worksheet.

All suspected or confirmed CCIs must be reported using the **CCI Worksheet** (see Appendix A), with supporting documents (data logger report if available, photos, etc.).

Submit to: immunizationprogram@yukon.ca.

STEP 4. YIP Viability Determination (all CCI's):

- YIP will review and return a completed CCI worksheet to the health facility.

If products are viable:	If products are NOT viable:
• Health Facility to label clearly with a red dot sticker. • Add the new CCI subplot number label and updated expiry date (provided by YIP): ◦ Example" Lot A123 → A123-CC# • Direct the team to use these products first.	• YIP will process Panorama inventory adjustments. • Health Facilities disposes of products on site, unless otherwise specified.

STEP 5. Immunization Documentation (all CCI's):

- Immunizers must select the new CCI subplot in Panorama when documenting doses.
- Always double-check product and lot numbers in the system.

Power Outage Procedure

Each site must maintain a written emergency vaccine storage and handling plan that addresses power outages, storage-unit failure and other emergencies that may compromise vaccine storage. The plan must identify alternate storage locations, emergency contacts, transportation arrangements and after-hours access.

1. If an outage is expected

- Do not wait. Begin your site's power outage plan if there's a reasonable risk of prolonged outage.
- Record fridge temperature and room temperature before the outage.
- Ensure coolers, cold packs, and a backup thermometer are ready.
- Identify an alternate storage site in advance, ideally one with a backup generator.
- Cold mass (i.e., water bottles placed on the bottom shelf) may extend the amount of time the fridge is able to maintain cold chain.

2. During a power outage

- Keep fridge and freezer doors closed.
- Do not open unless necessary.
- Monitor internal and external (the storage room) temperatures using a min/max thermometer
- If the storage unit cannot reliably maintain the required temperature range for the anticipated duration of the outage, or the duration of the outage is unknown, activate the site's emergency vaccine storage plan. Do not wait for the storage unit to exceed +8°C before preparing alternate storage:
 - Move vaccines to pre-cooled insulated containers with frozen packs and a thermometer.
 - Follow packing guidelines and monitor temperatures continuously.

3. When power returns

- Record current, minimum, and maximum temperatures inside the unit and how long the power was off.
- If the temperature stayed between +2°C and +8°C, return vaccines to the fridge.
- If temperature exceeded recommended range, follow [Cold Chain Incident Procedure](#).

7.4. Resources

Below are key tools, documents, and reference materials to support vaccine storage, transport, and cold chain management in the Yukon.

Documents and tools

- [Yukon Immunization Manual](#)
- **Cold Chain Incident (CCI) Worksheet** (see Appendix B).
- **Yukon Temperature Log Sheet:** (Appendix C) Template for recording daily vaccine storage temperatures.

Quick reference guides and ordering tools (via YG SharePoint)

- [Step 0: Waste 024 Report per location and product](#)
- [Step 1 QRG: Wastage Management for Front Line User](#)
- [Step 2 QRG: Physical Count / Month-End Counts](#)
- [Step 3 QRG: Ordering and Receiving Products](#)
- [Ordering Calendars: Available on the YG SharePoint site.](#)

Additional support

- **Yukon Immunization Program (YIP) Contact:**
Email: immunizationprogram@yukon.ca
Phone: 867-332-7612

7.5 References

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California Vaccines for Children (VFC) Online Immunization Training available at <http://eziz.org/vaccine-storage/> (see Vaccine Storage and Handling)

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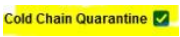
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World Health Organization (2002) User's handbook for vaccine cold rooms and freezer rooms, available at http://apps.who.int/iris/bitstream/10665/67801/1/WHO_V-B_02.31_eng.pdf

Appendix A: Cold Chain Incident Quick Reference Guide

CCI Process	Details
Step 1. Immediate Action	- Document the condition (vaccines, packaging, temp) - Take a photo if appropriate - Quarantine affected products - Label as “DO NOT USE” - Store as per Yukon Immunization Manual – Section 8
Step 2. CCI in Transport	- Download data logger report - Confirm LOT #s match Panorama Packing List - If mismatch, stop & contact YIP - Ensure “Cold Chain Quarantine” box checked in Panorama (default)  (see QRG – Step 3 - Page 2 – Section 6 for details).
Step 2. CCI Fridge Failure	- Download data logger report - Complete top portion of CCI worksheet only - Complete a Panorama Count confirming quantities affected
Step 2. CCI Human Error	- Complete entire CCI worksheet (e.g., dose left on counter, cooler issues) - Provide list of items affected products
Step 3. Reporting	- Fridge failure: Provide CCI worksheet including - Ensure Panorama Inventory Count sheet completed and submitted - Attach data logger, photos, supporting docs - Submit to: immunizationprogram@yukon.ca
Step 4. YIP Viability Determination	- YIP reviews & returns worksheet If products are viable: - Label products with red dot stickers and updated CCI subplot & expiry (provided by YIP) If NOT viable: - YIP processes Panorama adjustments - Facility disposes on site, unless otherwise specified
Step 5. Documentation	- Select new CCI subplot in Panorama - Double-check lot # and product

Appendix B: Cold Chain Incident Worksheet

Cold Chain Incident (CCI) Worksheet						CCI #:		
Facility & Report Info								
Health Care Facility:			Facility Phone #:			Report completed by:		
Date of Cold Chain Incident (yyyy-mm-dd):			Date Reported to YIP (yyyy-mm-dd):					
Physical Count Number (If entire fridge affected):				Panorama Pick List Number (If CCI occurred during transport):				
Cold Chain Exposure & Equipment Details								
Storage Unit Type:		☐ Medical Grade Vaccine Fridge ☐ Freezer ☐ Cooler (Transport) ☐ Fridge Credo ☐ Frozen Credo						
Temperature Monitoring Device Type:		☐ Min/Max Thermometer ☐ Data-Logger ☐ Other:						
Current Temp:		Min Temp:		Max Temp:			Duration of Exposure:	
Contributing Factors (select all that apply): ☐ Human Errors ☐ Packing Errors ☐ Equipment Failures ☐ External Factors ☐ Transit Errors ☐ Other:				Describe Incident:				
Product Name	Manufacturer	Lot Number	Expiry Date	Quantity (Doses)	Previous CCI?	Following Section is to be completed by YIP		
						Viability Status	New CCI Sublot	New Expiry
					Y/N			
					Y/N			

Note: All non-viable products will be moved to RETURN HP and disposed of at fiscal year-end.



Appendix C: Vaccine Storage Unit Temperature Record

Record temperatures twice daily for all on-site vaccine storage units													
Site:							Month:						
Vaccine Storage Unit:							Year:						
Day	AM						PM						Comment
	Time	Current	Min	Max	Room temp	Initial	Time	Current	Min	Max	Room temp	Initial	
1													
2													
3													
4													
5													
6													
7													
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