Vaccine Storage, Handling and Transport Guidelines

Publicly Funded Vaccines (Roles of SCPP, Ministry of Health and PAS)

The *Pharmacy and Pharmacy Disciplines Act* and the SCPP Regulatory Bylaws define the authorized practices of pharmacists. This document outlines SCPP's terms, conditions, and standards that **all pharmacists must follow when administering drugs, including vaccines, regardless of whether they are publicly or privately funded.**

In recognition of the key role that Saskatchewan pharmacists play in delivering publicly-funded immunization programs (e.g. Seasonal Influenza Immunization Program, COVID-19 Immunization Delivery Plan), this document highlights areas where the Saskatchewan Ministry of Health/Drug Plan and Extended Benefits Branch may have set additional requirements. Common questions about the differences between Ministry and SCPP standards can be found in the SCPP's Administration of Drugs by Injection and Other Routes FAQs. However, it is important that pharmacies delivering publicly-funded programs monitor the Ministry website to stay current on the comprehensive list of requirements.

When participating in a publicly funded immunization program, pharmacists and pharmacies agree to the Ministry's terms and conditions for the program (e.g., patient eligibility, informed consent, alternate locations, storage and handling, authorized immunizers, training, documentation, and reporting). **However, if a term or condition is not specifically included in the Ministry's communications, then the SCPP requirements apply**

DEFINITIONS

"Cold chain" refers to **maintaining potency and integrity of a vaccine** by ensuring optimal conditions during storage, handling, and transport. This process includes stakeholders, equipment, and facilities **from manufacture to administration** and is designed to ensure that proper storage temperatures and protection from light is maintained at every step.

"**Cold chain break**" any circumstance where a vaccine is exposed to temperatures outside the recommended storage range.

"Pharmacy team member" includes pharmacy assistants, pharmacy interns, licensed pharmacy technicians, and licensed pharmacists. The pharmacy team may include non-regulated individuals working in the pharmacy.

GLOSSARY OF ACRONYMS

PHAC – Public Health Agency of Canada

SCPP – Saskatchewan College of Pharmacy Professionals

SIM – Saskatchewan Immunization Manual

1. PURPOSE

Pharmacy professionals have an ethical duty to **protect patient safety by ensuring vaccine effectiveness is preserved** and **be responsible stewards of provincial health resources** which includes receiving, storing, and dispensing according to the manufacturer's specifications. SCPP requires that all pharmacies adhere to these guidelines to ensure that the cold chain is maintained for all products (e.g. biologics, drugs, vaccines). This document focuses on vaccines as they are very sensitive biological drugs that may become less effective or destroyed when exposed to light or temperatures outside the recommended range. **Note: Specific stability and storage information for other temperature sensitive products (e.g. biologics, drugs) can be found in the manufacturer's product monograph.**

Pharmacists' knowledge and vigilance to cold chain requirements is of increasing importance as pharmacists are becoming more involved in vaccinations (e.g., seasonal flu program, COVID-19 immunization delivery, vaccine preventable diseases/travel health). This document will outline SCPP requirements for community pharmacies and pharmacy professionals to ensure the cold chain is maintained.

Most vaccines are refrigerator-stable products and should be stored in a refrigerator at +2°C to +8°C. **Exposure to temperatures outside of the allowed range may result in decreased vaccine potency and increased risk of vaccine-preventable diseases**.

Some live vaccines must be stored in a continuously frozen state at -15°C or colder until administration. However, **as with all vaccine and drug products, always refer to the product monograph for the most up-to-date information on storage information to ensure an effective product is being used.** This document will focus on storage, handling, and transport of refrigerator-stable vaccines as these are most common in pharmacies.

Disclaimer: This document is not intended to be a comprehensive review of all vaccine storage, handling, and transport practices. Instead, it is meant to outline the key components of vaccine storage, handling and transport policies and procedures that must be in place at community pharmacies. For more comprehensive information on each section and frozen vaccines see the Related Resources section for respected resources that provide best practice recommendations.

2. ROUTINE VACCINE STORAGE AND HANDLING PROTOCOLS

2.1. All pharmacies must have written policies and procedures in place to ensure the cold chain is maintained during day-to-day operations and train staff on each of the following at orientation and ongoing thereafter:

2.1.1. Receiving vaccine shipments which includes but is not limited to:

2.1.1.1. Notification process – to ensure a pharmacy team member is notified immediately when a shipment arrives. It is recognized that some pharmacies may have receiving staff (i.e. a non-pharmacy team member) who brings the refrigerated shipment to the dispensary from an exterior receiving door. **Note: notification process is the only step in the cold chain management protocols that may be performed by a non-pharmacy team member.**

2.1.1.2. Visual inspection and transfer to dispensary refrigerator – to ensure a received shipment is examined and refrigerated immediately.

Best Practices: Visual Inspection of Refrigerated Shipments

A pharmacy team member should visually inspect refrigerated shipments for heat or cold damage looking for the following:

- Refrigerated packs should still be cold. Frozen packs can be melted but must still be cold.
- Drugs should not be in direct contact with refrigerated or frozen packs.

Source: PHAC National Vaccine Storage and Handling Guidelines 2015, Section 9.2. Receiving and Unpacking Vaccine Shipments

2.1.2. Storing and handling vaccines which includes but is not limited to:

2.1.2.1. The dispensary refrigerator is for medication storage only. Food and beverages must never be stored in the dispensary refrigerator. Full plastic water bottles for the purpose of stabilizing the temperature in the refrigerator are acceptable.

2.1.2.2. The **current, minimum, and maximum refrigerator temperatures and room temperature must be read and recorded twice daily** to ensure the temperature in the storage unit has remained within the recommended range.

Note: Pharmacies must have a calibrated temperature-monitoring device inside each storage compartment capable of recording minimum, maximum and current temperatures. See Refrigerator and Temperature Monitoring for other equipment requirements.

Temperature Log Documentation and Record Keeping

Documentation and record keeping is important to track recurring problems, contribute to quality assurance assessments, for auditing purposes and to fulfill Part J Section 11(3) of the SCPP Regulatory Bylaws which requires the refrigerator to be in good working order.

This requirement aligns with federal government recommendations and provincial conditions specified for those pharmacies that wish to deliver the Ministry of Health's seasonal flu program.

Data loggers may be used to assist with the above and are recommended by both the PHAC (Section 3.6) and in the SIM (Section 2.5.1).

See section 5 and 6 for more information and Appendix A for a Sample Temperature Log that may be used for record keeping purposes. See also Summary of Record Keeping Requirements and Administration by Injection FAQs.

2.1.2.3. Inventory management process (e.g., ordering, stock rotation, removing expired stock).

Best Practices: Vaccine Storage and Handling Principles

- Never leave a vaccine outside of the refrigerator (e.g., on the counter).
- Leave space between products in the refrigerator to allow air to circulate.
- Store vaccines only on the upper and middle shelves of the refrigerator and never on the side of the door or in the vegetable crisper bins.
- Keep vaccines away from cold air vents. The vents blow in cold air that could freeze vaccines.
- If room allows, keep full plastic water bottles on the bottom, empty shelves, and door racks to help maintain an even temperature and to keep the temperatures stable longer in the event of a power failure.

Whenever possible, drugs and/or other biologic products should not be stored with vaccines. Storing non-vaccine items in the vaccine storage unit results in frequent opening of the storage unit door. This allows for a greater chance of temperature instability and excessive exposure to light.

Source: PHAC National Vaccine Storage and Handling Guidelines 2015, SIM Chapter 9 – Management of Biological Products

2.1.3. Packing and transportation of vaccines for any subsequent shipping to secondary sites including but not limited to:

2.1.3.1. Transportation to offsite locations (e.g., offsite clinic, patient's home for administration by injection);

Best Practice: Packing and Transporting Principles

The best assurance of vaccine efficacy is to minimize the number of times vaccines are handled and transported.

Some of the basic principles include:

- Quality testing should be done to determine the packing materials and configurations that are suitable for your transporting containers. See SIM Chapter 9 Section 2.3, Insulated Containers/Ice Packs/Gel Packs/Insulating Materials.
- An insulated and temperature monitored container must be used when transporting vaccines. See SIM Chapter 9 Section 3.5 Temperature Indicators.
- Pack enough refrigerated or frozen packs to maintain the cold chain.
- Do not use loose or bagged ice.
- The number and placement of refrigerated or frozen packs inside the container will depend on container size, the ambient temperature, and the volume of vaccine. See SIM Chapter 9 Section 3.3.4. Packing Vaccine for Transport to Off-Site Clinics and Appendix E for more information.

Source: SIM Chapter 9 – Management of Biological Products

2.1.3.2. Patients transporting their own vaccine to a health care provider for administration purposes. It is SCPP standard of practice that:

2.1.3.2.1. A pharmacist must provide the patient with appropriate cold chain information to ensure an effective vaccine is administered.

2.1.3.2.2. A pharmacist must use their expertise in vaccine knowledge and credible sources of evidence-based information to inform the education provided to patients regarding the proper transportation and storage of a vaccine (i.e., PHAC, SIM or manufacturer product monograph).

Best Practices: Patient Education to Ensure Intended Benefit

The following recommended best practices are adapted from principles outlined in SIM Chapter 9. Cold chain information the pharmacist may share with the patient includes:

- to pick up the vaccine on the way to their appointment as the best assurance of vaccine efficacy is to minimize the number of times the vaccine is handled and transported. Note: pharmacists with Advanced Method Certification may offer the patient administration by injection at the pharmacy to ensure the cold chain is maintained.
- that storage at home in an unmonitored fridge is **not** recommended as storage conditions between 2 to 8°C cannot be verified and therefore the potency and integrity of the vaccine may be compromised.
- tips for transporting a vaccine in a personal vehicle (e.g., do not place vaccine in trunk or in line with hot/cold air vent, do not leave the vaccine in the vehicle unattended).

See SIM Chapter 9 Section 3.3.3. and 3.3.4 for best practice recommendations for shipping and packing vaccines for transport to off-site locations.

Source: SIM Chapter 9 – Management of Biological Products.

2.1.4. Identify and respond to any cold chain breaks including but not limited to:

2.1.4.1. Written instructions in an easily accessible area on who to notify and who will implement the cold chain break protocol or any other urgent storage and handling protocols.

Best Practices: Cold Chain Break Protocol

If vaccines are exposed to temperatures outside the recommended range, immediate action should be taken to avoid product loss. It should not be assumed that vaccine inappropriately exposed to light or temperatures outside the recommended range cannot be salvaged.

Note: If this is a publicly funded influenza vaccine, the Ministry of Health must be contacted to determine if the vaccine may be used.
For privately purchased vaccines, the only time the vaccine may be used is if the manufacturer has stability data to ensure integrity.

List of steps in handling vaccines exposed to inappropriate storage conditions:

1) Separate the affected vaccine from other vaccines and label as "DO NOT USE". Store the affected drugs under appropriate cold chain conditions until integrity is determined.
2) Record the following information:
    - Vaccine name, lot number and expiry date
    - Date and time of incident
    - The issue (e.g., exposure to inappropriate temperature or light)
    - Length of time the vaccine may have been exposed to inappropriate conditions
    - Whether any of the affected vaccines have been administered
    - The room temperature
    - Current temperature inside the vaccine storage unit
    - Minimum and maximum temperature readings inside the vaccine storage unit
    - Presence of water bottles in the refrigerator
3) Contact the Ministry of Health **(for publicly funded influenza vaccine)** or the vaccine manufacturer **(for privately purchased vaccines)** to seek advice regarding use of the vaccine, using the information outlined in step 2.
4) Follow directions provided by the Ministry of Health **(for publicly funded influenza vaccine)** or the vaccine manufacturer **(for privately purchased vaccines)** regarding use or disposal of affected vaccines. Record actions that have been taken to remedy the situation.

Source: Canadian Immunization Guide: Handling of Immunization Agents, Part 1 – Key Immunization Information

3. URGENT VACCINE STORAGE AND HANDLING PROTOCOLS

3.1. As part of emergency preparedness planning, **pharmacies must have policies and written procedures in place to maintain the cold chain in urgent situations** such as refrigerator malfunctions, power failures, natural disasters, or other emergencies. See Appendix D for a sample checklist of the items that may be included in the urgent vaccine storage and handling protocols.

Best Practices: Urgent Vaccine Storage and Handling Protocols

To protect the vaccine inventory and to minimize potential monetary loss, every facility that stores vaccines should have a written Emergency Event Recovery Plan. If a problem is short term (usually 2 hours or less) and depending on ambient room temperature, the storage temperature can probably be maintained with the water containers in the refrigerator, with frozen coolant packs in the freezer, and by keeping the storage unit door(s) closed.

Emergency Event Recovery Plan

In advance of a potential event, all providers should:

1. Identify an alternative storage facility with backup power where the vaccine can be properly stored and monitored for the interim.
2. Ensure the availability of staff to pack and move the vaccine.
3. Maintain the appropriate packing/insulating materials.
4. Ensure a means of transportation for the vaccine to the alternative storage facility.
5. Train staff and post information about these emergency procedures.

Source: SIM Chapter 9 – Management of Biological Products Section 4.2. and 4.3.

4. STAFF TRAINING AND ROLES

Every pharmacy team member has a role in the safe administration of drugs.

4.1. The pharmacy manager is responsible for ensuring patients receive a safe and effective vaccine by establishing and maintaining written routine and urgent cold chain management policies and procedures. See also Pharmacy Manager Responsibilities.

4.2. The pharmacy manager is responsible for ensuring that all pharmacy team members are trained and knowledgeable on the routine and urgent cold chain management protocols.

4.3. If applicable, the pharmacy manager is responsible for ensuring non-pharmacy staff (e.g., receiving staff) are trained and knowledgeable on the Notification Process in 2.2.1.1.

4.4. Each pharmacist and pharmacy technician is responsible for following the pharmacy's written cold chain management protocols to ensure that vaccine effectiveness is preserved as per Section 7 Standards of Practice.

Best Practice: Designated Vaccine Coordinator

To support pharmacy professionals in ensuring the cold chain is maintained, each site should designate one staff member to be the primary vaccine coordinator and another staff member as a backup (delegate) in case the primary coordinator is unavailable.

The designated vaccine coordinators should be fully trained in routine and urgent vaccine storage and handling protocols and ensure critical steps in cold chain management protocols are being taken (e.g., twice daily temperature reading and recording as outlined in 2.1.2.2.).

Duties of the Designated Vaccine Coordinators and Delegates:

- Monitor the operation of the vaccine storage equipment and systems twice daily (data loggers would assist with this, as recommended in:3.6.1).
- Ensure that protocols and training are in place for the appropriate handling of the vaccine during a natural disaster, equipment failure or power outage.
- Review and update the routine and urgent cold chain management protocols annually.
- Document and deal with cold chain breaks immediately when they occur. This includes being available for after hour emergencies.
- Equipment is cleaned and scheduled maintenance is performed and documented.
- They are the only person who should **adjust** the temperature of the refrigerator.

Source: PHAC National Vaccine Storage and Handling Guidelines 2015

5. EQUIPMENT AND MAINTENANCE

5.1. The pharmacy manager is responsible for identifying equipment, facility, and maintenance requirements to support cold chain management protocols. Vaccine storage units must be selected carefully and used properly. See SCPP's Refrigerator and Temperature Monitoring Equipment Requirements.

SCPP Practice Tip: Temperature Monitors with Alarms

A continuous-monitoring temperature alarm (e.g., data logger) or notification system should be considered, especially for vaccine storage units with large or expensive inventories to help prevent substantial financial loss in the event of a cold chain break.

See Administration by Injection FAQs for information on documentation and record keeping requirements for continuous temperature monitors/data loggers.

Source: PHAC National Vaccine Storage and Handling Guidelines 2015, Section 3.9.2.

Also see SIM chapter 9, Section 2.5 for additional information.

Best Practices: Equipment Maintenance

Regular maintenance is required to ensure proper functioning of the equipment and to extend the useful life of the appliance. Check equipment according to manufacturer's maintenance specifications to meet warranty requirements. Regular maintenance of all equipment is recommended to maintain optimal functioning. An equipment logbook should contain the following records of each piece of equipment:

- Date of installation, serial number, and model number
- Equipment instructions and list of routine maintenance tasks
- Date of any routine tasks performed (e.g., cleaning)
- Date of repairs or servicing, including invoices
- The name of the person, company, and contact information (operational and after hours) of the company providing the service

See SIM Chapter 9, section 2.4 for daily, weekly, quarterly and yearly vaccine storage unit maintenance tasks that should be considered when establishing local policies.

See PHAC National Guidelines, section 3.7 for thermometer maintenance and checking the accuracy of a thermometer.

Source: SIM Chapter 9 – Management of Biological Products Section 2.4, PHAC National Vaccine Storage and Handling Guidelines 2015 Section 3.7

6. SCPP OVERSIGHT AND MONITORING

6.1. The *Pharmacy and Pharmacy Disciplines Act*, section 50, requires that all records, drugs, and equipment pertaining to the operation of the pharmacy shall be available for inspection by SCPP. Currently, oversight of the operation of a pharmacy occurs during the pre-opening, relocation or renovation inspection process, where SCPP Field Officers review all requirements outlined in the evaluation checklist and provide a report to the pharmacy manager indicating items in compliance and those requiring follow-up.

6.2. Regular monitoring is also conducted during the Quality Improvement Review (QIR) process, where an SCPP Field Officer coaches and assists pharmacy staff on pharmacy practices to ensure medication safety and safe medication practices.

6.3. Records to comply with various regulations and standards of practice (e.g., fridge, temperature logs, cold chain breaks, drug/vaccine loss records) may be audited by an SCPP Field Officer and therefore must be kept in a retrievable location. See SCPP Record Keeping Requirements.

7. STANDARDS OF PRACTICE

Pharmacy team members who receive, store, handle, dispense or transport vaccines must do so according to SCPP requirements to ensure the cold chain is maintained and the product remains effective until administration:

7.1. Pharmacy professionals must ensure that all drugs are stored in a manner that maintains stability and integrity, including SCPP requirements in section 2.1.2.2. (Also see NAPRA's Model Standards of Practice for pharmacists and pharmacy technicians).

7.2. A pharmacist must ensure the patient gets maximum benefit from prescription and non-prescription drugs (including vaccines) by providing the appropriate information for the patient to understand the use, precautions, common side effects and storage requirements of the medication. See section 2.1.3.2.

7.3. A pharmacist or pharmacy technician must follow the standards of delegation (see SCOPe January 2016, Page 5) when delegating the performance of tasks to a pharmacy assistant (e.g. receiving and unpacking vaccine shipments). Note: pharmacy assistants are not members of a regulated health profession, therefore, the delegating pharmacist or pharmacy technician remains responsible for the quality of the pharmacy care provided to the patient.

8. RELATED RESOURCES

8.1. PHAC – National Vaccine Storage and Handling Guidelines for Immunization Providers 2015 for best practice recommendations:

- Section 2.4.1 What to Include with Urgent Protocols (refrigerated and frozen vaccines)
- Section 3.4.8 Setting and stabilizing the refrigerator temperature.
- Section 3.9 Vaccine Security for information on protecting the power supply, temperature alarms and backup generators.
- Section 4.1.4 Appropriate Vaccine and Diluent Storage Conditions (frozen vaccines)

- Section 4.2 Organizing Your Refrigerator and Freezer (4.2.1 Refrigerated Vaccines and 4.2.2 Frozen Vaccines)
- Section 6. Storage Troubleshooting including steps in handling inappropriate vaccine storage conditions, dealing with vaccine storage unit failure, refrigerator door problems, and thermometer problems.
- Section 9.2 Receiving and Unpacking Vaccine Shipments (refrigerated and frozen vaccines)
- Section 9.3. Transporting Vaccine to Off-Site Clinics and 9.3.2. Basic Principles for Packing (refrigerated and frozen vaccines).

8.2. Ministry of Health – Saskatchewan Drug Plan – Seasonal Influenza Immunization Program for provincial requirements that must be adhered to by pharmacies and pharmacists participating in the publicly funded seasonal flu program:

- Pharmacy registration form for Seasonal Influenza Immunization Program
- Saskatchewan Influenza Immunization Policy (SIIP)
- Important Information and standard forms from the SIIP
- Saskatchewan Drug Plan Influenza Immunization Policy
- Saskatchewan Immunization Manual link and recently changed sections

8.3. Ministry of Health - Saskatchewan Immunization Manual (SIM)

- For the publicly funded influenza vaccine – a provincial requirement for pharmacists participating in the seasonal flu program is to adhere to the management of biological products procedures and guidelines in SIM Chapter 9 (Review Ministry requirements annually).
- For privately purchased vaccines – provides best practice recommendations:
    - Chapter 9 Section 2.3 Insulated Containers/ Ice Packs/ Gel Packs/ Insulating Materials
    - Chapter 9 Section 2.4 Vaccine Storage Unit Maintenance
    - Chapter 9 Section 2.6 Checking and Recording Temperatures
    - Chapter 9 Section 3.3.3 Shipping Vaccines
    - Chapter 9 Section 3.3.4 Packing Vaccine for Transport to Off-Site Clinics
- See also, Administration by Injection FAQs – “What should pharmacists know about the SIM?”

8.4. NAPRA

- Model Standards of Practice for Canadian Pharmacists
- Model Standards of Practice for Canadian Pharmacy Technicians

8.5. Health Canada – Guidelines for environmental control of drugs during storage and transportation

- Information on using dry ice to transport drugs

9. AUTHORITY

The Pharmacy and Pharmacy Disciplines Act

APPENDIX A – SAMPLE TEMPERATURE LOG

Record all temperatures ***twice*** **daily** for all vaccine storage units. Retain records for 2 years from the date of last event in a retrievable location.

Month:							Post on or beside refrigerator.						
Location/Pharmacy:													
	AM						PM						
		Vaccine Storage Unit						Vaccine Storage Unit					
Day	Time	Current	Min	Max	Room Temp	Initial	Time	Current	Min	Max	Room Temp	Initial	Comments
1													
2													
3													
4													
5													
6													
7													
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Check fridge temperature at the beginning and end of each day. Vaccines must be stored between 2°C - 8°C at all times.

Take immediate action if products have been exposed to temperatures outside of 2°C - 8°C. DO NOT DISCARD PRODUCTS! Quarantine products, label DO NOT USE and maintain between 2°C - 8°C while awaiting direction as per the Cold Chain Break Protocol.

APPENDIX B – SAMPLE VACCINE STORAGE TROUBLESHOOTING RECORD

Date/ Time	Storage Unit Temp	Room Temp	Problem	Action Taken	Results	Initials

Retain records for 2 years from the date of last event in a retrievable location

APPENDIX C – SAMPLE ROUTINE VACCINE STORAGE AND HANDLING PROTOCOLS CHECKLIST

The following is a sample checklist of items that may be included in the routine vaccine storage and handling protocols. The protocols should be available in an accessible area near the vaccine storage unit. See PHAC National Vaccine Storage and Handling Guidelines Section 2 for details.

- ☐ Up-to-date contact information for the following:
  - Designated vaccine coordinators and delegates who are responsible for routine vaccine storage and handling
  - Provincial, territorial, local, or jurisdictional public health office or immunization programs
  - Refrigerator and freezer maintenance and repair company
  - Vaccine storage unit alarm company (if applicable)
  - Sources of packing materials and calibrated thermometers
- ☐ Descriptions of the roles and responsibilities of the designated vaccine coordinators, delegates, and other staff members
- ☐ Summaries of the storage requirements for each vaccine and diluent in your inventories
- ☐ Samples of the forms used in each immunization program

Source: PHAC National Vaccine Storage and Handling Guidelines 2015

APPENDIX D – SAMPLE URGENT VACCINE STORAGE AND HANDLING PROTOCOLS CHECKLIST

The following is a sample checklist of the items that may be included in the urgent vaccine storage and handling protocols. The protocols should be available in an accessible area near the vaccine storage unit. See PHAC National Vaccine Storage and Handling Guidelines Section 2 for details to be included under each item of the checklist.

- ☐ Contact List
  - Emergency staff contact list in order of contact preference
  - Current contact information for all possible players in the event of an emergency
    - Designated vaccine coordinators and delegates
    - Emergency staff contact list
    - Alternative vaccine storage facility or facilities
    - Provincial, territorial, or local health department immunization program
    - Electric power company
    - Emergency generator repair company
    - Refrigerator and freezer maintenance and repair company
    - Vaccine storage unit/temperature alarm monitoring company (if applicable)
    - Security alarm company (if applicable)
    - Weather service
    - Sources of packing materials and calibrated thermometers
    - Local refrigeration company and alternative
- ☐ Designated vaccine coordinators'/delegates' responsibilities
- ☐ Power outages
  - A list of the most common causes of power interruption for your facility
- ☐ Vaccine storage unit specifications (type, brand, model number, serial number, location)
- ☐ Vaccine storage facility
  - Alternative vaccine storage facility or facilities
  - Written protocols, vehicles, and drivers for transporting vaccine to and from the alternative vaccine facility
  - Written accessible instructions for entering your facility and vaccine storage spaces in an emergency if the building is closed or if it is after hours
- ☐ Vaccine storage at alternative facilities
  - Written protocol for appropriately storing vaccine at the alternative vaccine storage facility

- Appropriate packing materials to safely transport or temporarily store vaccine
- Written protocol for vaccine packing

☐ Refrigerated and frozen vaccines

- Separate protocols for specific packing requirements of refrigerated and frozen vaccines

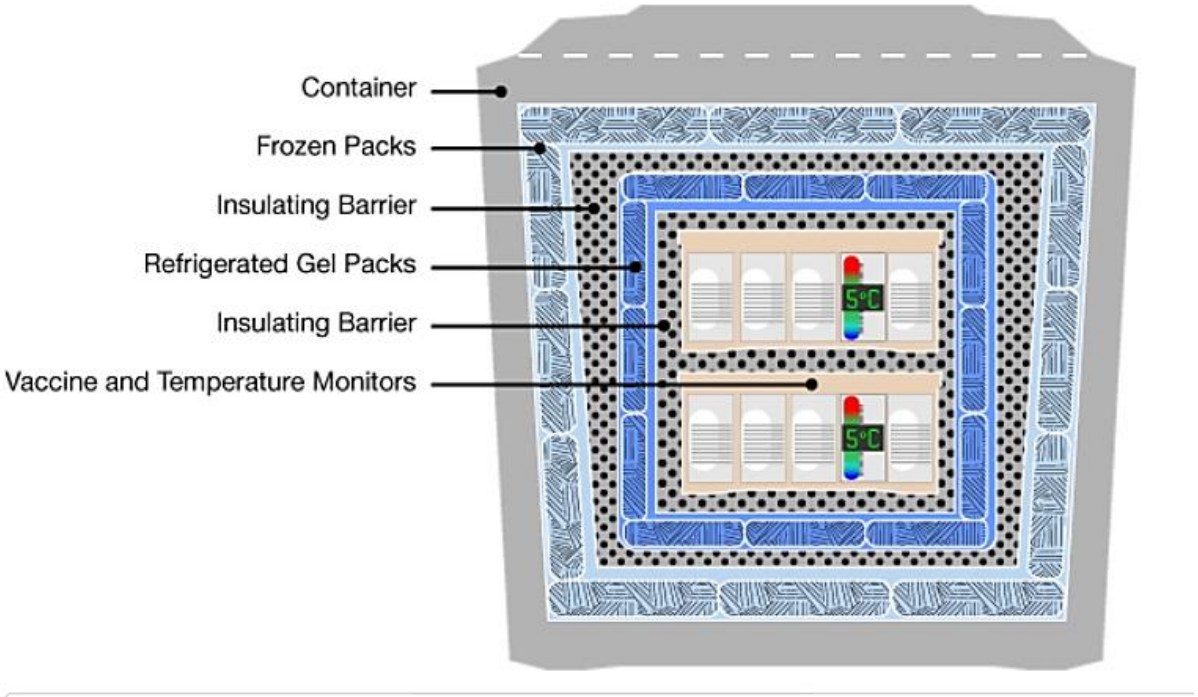
☐ General principles

Source: PHAC National Vaccine Storage and Handling Guidelines 2015

APPENDIX E – PACKING VACCINES FOR TRANSPORT TO OFF-SITE CLINICS

See section PHAC National Guidelines Section 9.3. for general recommendations, basic principles for packing vaccines, packing materials and maintaining appropriate temperatures during off-site clinics.

Below is an example of how a shipping container can be packed. Note that packing configurations may vary according to time of year and length of shipment.



Source: PHAC National Vaccine Storage and Handling Guidelines 2015