

## Vaccine Management Clinical Checklist for Community Vaccine Providers

This document is intended to support Fraser Health Authority (FHA) Community Vaccine Providers (CVPs) in ensuring BCCDC standards of vaccine management are being met. Fraser Health and the FHA Immunization Logistics Program is committed to achieving the highest standards in immunization practice. Our goal is to provide a comprehensive immunization program that meets the standards and guidelines of the [Canadian Immunization Guide](#) and the [British Columbia Communicable Disease Control Immunization Manual](#).

This document contains key vaccine management resources to support all community immunization programs. Community vaccine providers that administer publicly funded vaccines have a responsibility to make sure their staff are familiar with this information.

**This document is intended for initial set up AND also as an annual check to ensure the Publicly Funded Vaccine is protected and your office is poised for vaccine management success.**


This document was created based on the Fraser Health Authority (FHA) website [Immunization Resources for Community Vaccine Providers](#), BCCDC [Immunization Manual](#) and the BCCDC [Vaccine Management website](#).

**Please share this information with all staff who will be immunizing or involved in vaccine management**

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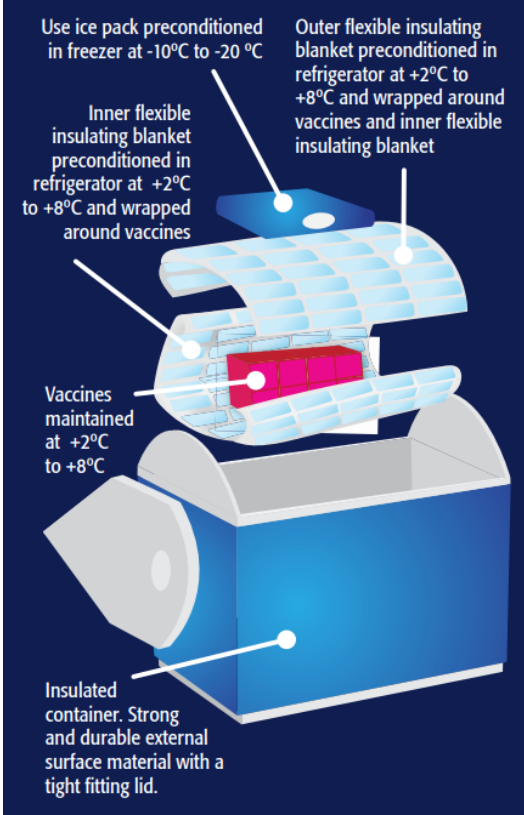
Topics	✓	Resources
<b>Resources</b>		
<b>1. Vaccine Management Resources</b>	<input type="checkbox"/>	<b>A. Bookmark on your web browser</b> <ul style="list-style-type: none"> <li>▪ <a href="#">BCCD Vaccine Management Support page</a></li> <li>▪ <a href="#">BCCDC Immunization Manual</a></li> <li>▪ <a href="#">BCCDC – Appendix E Management of Biologicals</a></li> </ul>
	<input type="checkbox"/>	<b>B. Review the FHA <a href="#">Imms resources for CVP Website</a> AND bookmark on your web browser</b> <ul style="list-style-type: none"> <li>▪ Google “FHA immunization resources” or go to the website: <a href="https://www.fraserhealth.ca/employees/immunization-resources-for-community-vaccine-providers">https://www.fraserhealth.ca/employees/immunization-resources-for-community-vaccine-providers</a></li> </ul>
	<input type="checkbox"/>	<b>C. Review and EXPAND ALL of the <a href="#">FHA website topics</a></b> <ul style="list-style-type: none"> <li>○ Vaccine ordering</li> <li>○ Vaccine storage and temperature monitoring</li> <li>○ Vaccine reporting forms</li> <li>○ Vaccine return</li> <li>○ Questions about immunizations?</li> <li>○ Cold chain incident (CCI) resources</li> <li>○ Public Health unit information</li> <li>○ Immunization logistics team contact information</li> <li>○ Education</li> <li>○ Pharmacists</li> <li>○ Vaccine schedules and eligibility guidelines</li> <li>○ Adverse event following immunization (AEFI)</li> <li>○ Other resources</li> </ul>
<b>Vaccine storage / Temperature Monitoring / Cold Chain Temperature Ranges</b>		
<b>2. Vaccine Management Binder</b>	<input type="checkbox"/>	<b>D. Create a binder for EACH vaccine fridge</b> <ul style="list-style-type: none"> <li>▪ <i>Or one binder with separate sections for each fridge</i></li> </ul>
	<input type="checkbox"/>	<b>E. Print and include in each binder:</b> <ol style="list-style-type: none"> <li>1. <a href="#">FHA refrigerator temperature form</a></li> <li>2. <a href="#">FHA refrigerator temperature form instructions and example</a></li> <li>3. <a href="#">BCCDC Vaccine storage and handling QRG</a> (Print double sided)</li> <li>4. <b>A copy of this checklist</b></li> </ol>
<b>3. Refrigerator Temperature Form</b>	<input type="checkbox"/>	<b>F. Review the * NEW * <a href="#">FHA refrigerator temperature form instructions and example</a></b>
	<input type="checkbox"/>	<b>Importance of Cold Chain Temperatures</b> <ol style="list-style-type: none"> <li>a. Maintain temperatures of +2.0°C to +8.0°C</li> <li>b. Damage from successive exposures to adverse conditions is cumulative and irreversible</li> </ol>
	<input type="checkbox"/>	<b>Refrigerator Temperature Form Instructions</b> <ul style="list-style-type: none"> <li>▪ <b>VERY IMPORTANT</b> – Review Steps 1 to 8</li> </ul>
		<ol style="list-style-type: none"> <li>1. All temperatures must be recorded in degrees Celsius (°C) to <b>1 decimal place</b> as seen on the thermometer display (Example → 4.5°C)</li> <li>2. For each new form, fill in the <b>accuracy range of the thermometer</b>, the name of the fridge and the month at the top of the form               <ol style="list-style-type: none"> <li>a. Twice each day record the current, minimum and maximum refrigerator temperatures as shown on the display (ideally at the start and end of each business day)</li> <li>b. The min/max recordings show the highest and lowest temperature reached in the total time since the thermometer was last reset – This is the most rich and important temperature data</li> </ol> </li> </ol>
		<ol style="list-style-type: none"> <li>3. Reset the min/max refrigerator thermometer after recording the temperatures</li> <li>4. Record the time the readings were taken, the room temperature, the dial setting of the refrigerator, and your initials</li> </ol>

Topics	✓	Resources
		<p>5. It is recommended that you also plot on the top grid the current, minimum and maximum temperatures the vaccines were exposed to since they were last checked</p> <ol style="list-style-type: none"> <li>a. This allows for a quick visual assessment of how well the refrigerator temperature is being maintained and will help identify cold chain incidents</li> </ol> <p>6. Keep vaccines and other biological products refrigerated between +2°C to +8°C at all times</p> <p>7. If the temperature recorded is in the shaded zones, immediate action is needed to bring the temperature back into range</p> <p>8. Retain these records for a minimum of three years</p> <p><input type="checkbox"/> <b>Always document to ONE DECIMAL place</b></p> <ul style="list-style-type: none"> <li>▪ When there is NO decimal place this will result in a .9°C being added to values missing a decimal if a CCI occurs</li> </ul> <p><input type="checkbox"/> <b>Review the definition of each temperature recording value</b></p> <ol style="list-style-type: none"> <li>a. <b>Current Temp</b> = The “now” temperature of the refrigerator – This shows a small window of time</li> <li>b. <b>Min / Max Temp Range</b> = The highest and lowest temperature reached in the total time since the thermometer was last reset - <i>Most rich &amp; important temperature data</i></li> <li>c. <b>Dial/Temp Setting</b> = The programed temperature or actual dial setting on the fridge <b>** The recommended fridge dial/temp setting should allow the fridge’s resting temperature to sit between +4.0°C to +5.0°C **</b></li> </ol> <p><input type="checkbox"/> <b>Cold Chain Incident Considerations</b></p> <ol style="list-style-type: none"> <li>a. Vaccine exposed to temperatures outside of 0.0°C to +8.0°C may not be effective in building adequate immunity for disease prevention</li> <li>b. <b>The Thermometer Accuracy Range MUST be taken into account</b></li> <li>c. A temperature reading of 7.8°C on a thermometer with an accuracy range of (+/-) 0.5°C → <i>The Actual temperature could be anywhere from 7.3°C to 8.3°C = Possible (CCI)</i></li> <li>d. <b>MUST report Cold Chain Incidents to Public Health</b></li> </ol> <p><input type="checkbox"/> <b>Review the Example of Correctly Filled Out Refrigerator Temperature Form</b></p> <ul style="list-style-type: none"> <li>▪ Pg 2 of <a href="#">FHA refrigerator temperature form instructions and example</a></li> <li>▪ Observe the highlighted CCIs</li> </ul>
<p><b>4. Vaccine Thermometers</b></p>		<p><b>Accurate temperature recordings are the foundation of vaccine management</b></p> <p><b>G. Ensure EACH vaccine fridge has a digital thermometer with the following features:</b></p> <p><input type="checkbox"/> Records temperatures to 1 decimal place (Example 4.5°C)</p> <p><input type="checkbox"/> <b>Accuracy range - FHA recommends and strongly suggests a device with an accuracy of at least 0.5°C (+/-)</b></p> <ul style="list-style-type: none"> <li>• It <b>MUST</b> have a (+/-) accuracy range listed on the manual of at least 1.0°C (+/-) or better</li> </ul> <p><input type="checkbox"/> Has a long enough probe to place in the middle of the refrigerator while the digital display sits on the outside of the refrigerator</p> <p><input type="checkbox"/> A probe with a vial size glycol tip/end is very useful and provide much more stable recordings - however this is not mandatory</p> <p><input type="checkbox"/> <b>Records current, minimum and maximum refrigerator temperatures</b></p> <p><input type="checkbox"/> <b>ALSO Records the room/ambient temperature</b></p> <ul style="list-style-type: none"> <li>○ If ONE device does not record the min/max, current <b>and room temperature</b>, a <b>SECOND</b> thermometer must be used to record the room temperature separately</li> </ul> <p><input type="checkbox"/> <b>H. Thermometers MUST be calibrated/temperature verified every year at scheduled maintenance visits (refrigerator and thermometer)</b></p> <ul style="list-style-type: none"> <li>○ Ensures the temperature showing is accurate and can be trusted</li> </ul>

Topics	✓	Resources
		<p>I. <b>FHA recommends purchasing and replacing a Min/Max thermometer every 1-2 years</b></p> <ul style="list-style-type: none"> <li>○ Over time thermometers become less reliable and accurate and more likely to malfunction – Causing possible unnecessary CCIs and vaccine wastage</li> </ul> <p>J. <b>Review additional detailed resources/information found:</b></p> <ul style="list-style-type: none"> <li>▪ <a href="#">FHA refrigerator temperature form instructions and example</a></li> <li>▪ BCCDC Imms manual - <a href="#">Appendix E Management of Biologicals (page 5)</a></li> </ul> <p>K. <b>Example Thermometer</b></p> <ul style="list-style-type: none"> <li>▪ For Min/Max temperatures - Traceable 4227 Refrigerator/Freezer Plus Thermometer</li> </ul>  <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-left: 20px;">A second thermometer is then used for ROOM temperature</div>
<b>Vaccine Refrigerator Setup / Temperature Stability / Maintenance / Emergency Plan</b>		
5. Refrigerator Setup	□	<p>L. <b>Review “Refrigerators” Section in the following:</b></p> <ul style="list-style-type: none"> <li>▪ (Pg 2) on the <a href="#">BCCDC Vaccine storage and handling QRG</a></li> <li>▪ “3.1 Refrigerators” (Pg 3+4) on the <a href="#">BCCD – Appendix E Management of Biologicals</a></li> </ul>
	□	<p><b>Ensure Your Office Has an Acceptable Refrigerator(s) for Vaccine Storage:</b></p> <ul style="list-style-type: none"> <li>○ <b>Purpose-built refrigerator</b> (Also called a pharmacy, vaccine, biologicals, laboratory or industrial grade refrigerator)</li> <li>○ <b>Domestic frost free refrigerator can be used HOWEVER:</b> <ul style="list-style-type: none"> <li>▪ <b>Temperatures may fluctuate in different compartments within this type of refrigerator</b></li> <li>▪ <b>** Do not store vaccine in the door or crisper drawers **</b></li> </ul> </li> </ul>
	□	<p><b>NOT-Acceptable Refrigerator for Vaccine Storage:</b></p> <p>a. <b>DO NOT USE A STANDARD “BAR FRIDGE”</b></p> <p>i. <b>Are not adequate because they do not maintain cold chain temperatures</b></p>
	□	<p><b>Create Signs for Fridges</b></p> <p>a. A “DO NOT UNPLUG” sign should be placed next to the power outlet</p> <p>b. A “VACCINE REFRIGERATOR-DO NOT DISCONNECT/DO NOT SWITCH OFF” sign should be placed on the vaccine refrigerator’s power breaker switch in the electrical panel box</p>
	□	<p>Place the refrigerator away from the wall or surrounding structures to provide proper ventilation and air circulation on all sides</p>
	□	<p>Protect the refrigerator from direct sunlight</p>
	□	<p>Connect the refrigerator to a dedicated electrical circuit not used for other appliances</p>
	□	<p>Use a plug guard on the electrical outlet for the refrigerator to prevent accidental disconnection from power</p> <p>“First to expire, first out” - Rotate vaccine stock according to expiry date</p>
6. Refrigerator Stability	□	<p>M. <b>Review Refrigerators Sections</b></p> <ul style="list-style-type: none"> <li>▪ (Pg 3) on the <a href="#">BCCDC Vaccine storage and handling QRG</a></li> <li>▪ “3.1 Refrigerators” (Pg 3+4) on the <a href="#">BCCD – Appendix E Management of Biologicals</a></li> </ul>
	□	<p><b>Maintain the refrigerator temperature between +2.0°C to +8.0°C</b>          The fridge dial/temp setting should allow the fridge’s resting temperature to rest between +4.0°C to +5.0°C</p>
	□	<p><b>DO NOT STORE VACCINE ON FRIDGE DOOR SHELVES</b> or crisper drawers</p> <ul style="list-style-type: none"> <li>▪ More susceptible to temperature fluctuations</li> </ul>
	□	<p><b>If temperatures are in the grey shaded areas on the temp form (close to 2.0°C or 8.0°C)</b></p> <ul style="list-style-type: none"> <li>▪ Adjust the refrigerator temperature setting to restore to the recommended (between +2.0°C to +8.0°C) range immediately</li> <li>▪ If this doesn’t help – HAVE THE FRIDGE SERVICED by a professional</li> </ul>

Topics	✓	Resources
		<input type="checkbox"/> <b>Open refrigerator only when necessary</b> For times when there will be multiple vaccines needed: <b>Use a correctly packed insulated cooler</b> to store the estimated amount of vaccine needed for that clinic <ul style="list-style-type: none"> <li>▪ Avoids excessive opening/closing of the fridge (<b>Pg 8</b>) on the <a href="#">BCCDC Vaccine storage and handling QRG</a></li> </ul> <input type="checkbox"/> <b>Refrigerators should be vaccine only</b> – Avoids unnecessary opening/closing of the door <input type="checkbox"/> <b>Store FULL sealed bottles of water on empty shelves and in the doors</b> → <i>Provides a cold mass and helps maintain stable temperatures</i> <input type="checkbox"/> <b>You CAN</b> store flexible insulating blankets or gel packs that will be used as insulating material (during vaccine cooler use) in the refrigerator <input type="checkbox"/> <b>TWICE DAILY - Check thermometers, record temperatures and the RESET the min/max memory to begin recording the new data</b> <ul style="list-style-type: none"> <li>▪ Look for possible CCIs (take into account the accuracy range of the thermometer)</li> <li>▪ <b>Remember to always reset thermometer after recording the values</b> <ul style="list-style-type: none"> <li>○ This will ensure the memory records any NEW high or low temperatures</li> </ul> </li> </ul> <input type="checkbox"/> <b>N. Equipment Not Working Properly?</b> <ol style="list-style-type: none"> <li>a. Check to see if the refrigerator door is closed and the seal it tight</li> <li>b. Is the thermometer working correctly (compare with another – needs replacement?)</li> <li>c. Check that the refrigerator has not been unplugged</li> <li>d. If refrigerator temperature requires adjustment, turn dial by a small amount and monitor temperature closely</li> <li>e. <b>When in doubt - Have the refrigerator serviced by a professional</b> <ul style="list-style-type: none"> <li>○ <b>This should be done once per year for preventative maintenance no matter what</b></li> </ul> </li> </ol>
7. Refrigerator Maintenance		<input type="checkbox"/> <b>O. Area around the refrigerator is clean and dust free</b> <input type="checkbox"/> <b>P. Have a refrigerator maintenance check (cleaning coils, checking door seals, calibrate thermometer, ensure its maintain stable temps) done regularly (at minimum, annually)</b> <ul style="list-style-type: none"> <li>○ Regular maintenance promotes proper functioning of the refrigerator and maintenance of the required temperature, and extends the useful life of the unit (See <a href="#">National Guidelines</a> for a “maintenance” checklist)</li> </ul> <input type="checkbox"/> <b>NOTE → Refrigerator malfunction can and does occur</b> <ul style="list-style-type: none"> <li>▪ Have a plan in place to deal with equipment malfunction - The most important action to take should this happen is to protect the vaccine supply as quickly as possible</li> </ul>
8. Emergency Plan		<input type="checkbox"/> <b>Q. Read Power Outages (pg 11) in <a href="#">BCCDC Vaccine storage and handling QRG</a></b> <input type="checkbox"/> <b>R. Establishing an office-specific emergency plan for power failures or equipment malfunction:</b> <ol style="list-style-type: none"> <li><input type="checkbox"/> 1. Identify a back-up refrigerator that is accessible, monitored and functional at all times</li> <li><input type="checkbox"/> 2. On the temperature form, record the refrigerator temperature (minimum, maximum and current), room temperature, and time, as soon as possible after the start of the power failure or malfunction. Reset the thermometer</li> <li><input type="checkbox"/> 3. Place a “DO NOT USE” sign on the refrigerator. Do NOT open the refrigerator except to remove vaccines for alternate storage</li> <li><input type="checkbox"/> 4. If power is expected to be restored within four hours or less, keep the vaccines in the refrigerator and keep the refrigerator doors closed</li> <li><input type="checkbox"/> 5. If a longer power outage is expected, or if the refrigerator temperature is going out of range quickly, move vaccines to a cooler with ice packs and insulating material. Take the vaccines to a facility that has a functioning monitored refrigerator (i.e., that has power or a back up generator) as per the local emergency plan</li> </ol>

Topics	✓	Resources	
		<input type="checkbox"/>	6. Continue to monitor and record refrigerator temperatures for the duration of the outage. If power failures are a common occurrence, centralize vaccine storage to a more power-stable facility
		<input type="checkbox"/>	7. Record the time and refrigerator temperatures (current, minimum and maximum) when the power is restored
<b>Vaccine Ordering / Vaccine Transportation / Insulated Containers</b>			
<b>9. Vaccine Ordering</b>		<input type="checkbox"/>	<b>S. Review FHA <a href="#">Imms resources for CVP Website</a> → Vaccine Ordering drop down</b>
		<input type="checkbox"/>	Order via the CheckBox link
		<input type="checkbox"/>	Order up to 4 weeks of vaccine stock for your office at a time
		<input type="checkbox"/>	Provide a minimum of 2 business days (MON-FRI) for orders
		<input type="checkbox"/>	<b>URGENT Orders</b> → Place your order via the online vaccine order form and follow up with a call to the local public health unit
<b>10. Picking up &amp; Transporting Vaccine</b>		<input type="checkbox"/>	<b>T. Arrive with appropriate cooler and materials for transportation</b> <ul style="list-style-type: none"> <li>Public health is unable to provide these to our immunizing partners</li> <li>See below</li> </ul>
		<input type="checkbox"/>	<b>Unpack vaccines as soon as possible</b> <ul style="list-style-type: none"> <li>All staff need to be aware of the urgency of this process</li> <li>Transfer vaccines to the refrigerator immediately, minimizing the time that the refrigerator door is open</li> </ul>
		<input type="checkbox"/>	<b>When transporting vaccines, use an insulated container (cooler) of appropriate size for vaccine order</b> <ul style="list-style-type: none"> <li><b>SEE # 11 – Cooler Packing below</b></li> <li><b>Cooler should contain ice packs and insulating materials</b></li> <li>Keep cooler out of direct sunlight and keep trips as short and direct as possible from the public health unit to your office</li> </ul>
<b>11. Cooler Packing</b>		<input type="checkbox"/>	<b>U. Read Transporting Vaccines <a href="#">BCCDC Vaccine storage and handling QRG (Pg 6 to 8)</a></b>
		<input type="checkbox"/>	Read Insulated Containers – <a href="#">Pg 6</a>
		<input type="checkbox"/>	Read Insulating Materials – <a href="#">Pg 7</a> <ul style="list-style-type: none"> <li>Used as a barrier to prevent direct contact between vaccines and ice packs</li> <li>Include flexible insulating blankets and gel packs at refrigerator temperature (+2°C to +8°C)</li> <li><b>A layer of paper towel IS NOT sufficient</b></li> </ul>
		<input type="checkbox"/>	Read <b>HOW to PACK</b> an Insulated Container – <a href="#">Pg 8 BCCDC Vaccine storage and handling QRG</a>

Topics	✓	Resources
		 <p>Use ice pack preconditioned in freezer at -10°C to -20 °C</p> <p>Outer flexible insulating blanket preconditioned in refrigerator at +2°C to +8°C and wrapped around vaccines and inner flexible insulating blanket</p> <p>Inner flexible insulating blanket preconditioned in refrigerator at +2°C to +8°C and wrapped around vaccines</p> <p>Vaccines maintained at +2°C to +8°C</p> <p>Insulated container. Strong and durable external surface material with a tight fitting lid.</p>

**COLD CHAIN INCIDENTS**

<p><b>12. Cold Chain Incident (CCI)</b></p>	<input type="checkbox"/>	<p><b>V. Review Cold Chain Incident Resources</b></p> <ul style="list-style-type: none"> <li>• Pg 9 to 10 - <a href="#">BCCDC Vaccine storage and handling QRG</a></li> <li>• Pg 14 – 15 - <a href="#">BCCD – Appendix E Management of Biologicals</a></li> </ul> <p><input type="checkbox"/> <b>Any temperature outside of the +2°C to +8°C range requires immediate action</b></p> <p><input type="checkbox"/> <b>Thermometer Accuracy Range MUST be taken into account</b></p> <ul style="list-style-type: none"> <li>• A temperature reading of 7.8°C on a thermometer with an accuracy range of (+/-) 0.5°C → <i>The Actual temperature could be anywhere from 7.3°C to 8.3°C = Possible (CCI)</i></li> </ul> <p><input type="checkbox"/> Exposure of vaccines to 0°C to +2°C does not constitute a cold chain incident, <b>taking into account the accuracy of the thermometer</b></p> <ul style="list-style-type: none"> <li>• Extremely important to adjust the refrigerator temperature and restore the temperature to within the recommended +2°C to +8°C range immediately</li> <li>• Further temperature declines to below 0°C could result in freezing of vaccines</li> </ul> <p><input type="checkbox"/> <b>What to do with the vaccine?</b></p> <ul style="list-style-type: none"> <li>• Read pg 10 <a href="#">BCCDC Vaccine storage and handling QRG</a></li> </ul> <p><input type="checkbox"/> <b>What do you record?</b></p> <ul style="list-style-type: none"> <li>• Read pg 10 <a href="#">BCCDC Vaccine storage and handling QRG</a></li> </ul> <p><input type="checkbox"/> <b>Who do you inform?</b></p> <ul style="list-style-type: none"> <li>• Read pg 10 <a href="#">BCCDC Vaccine storage and handling QRG</a></li> </ul> <p><input type="checkbox"/> <b>ALL Cold Chain Incident (CCI) FORMS and Health Unit contact information for reporting</b> → Located on the <a href="#">FHA Imms resources for CVP Website under the Cold Chain Incident Resources drop down</a></p>
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