



Immunization Toolkit for Immunization Providers

Communicable Disease Prevention and Control Division
Public Health Branch
Department of Health and Wellness

Contents

Introduction	3
General Vaccine Storage and Handling Guidelines	4
Vaccine Refrigerators	5
Organizing the Vaccine Fridge	6
Routine Vaccine Orders And Pickup	8
Vaccine Cold Chain Break Management And Reporting	9
Emergency Preparedness And Vaccine Storage And Handling	10
Reporting of Immunizations	11
Reporting of Adverse Events Following Immunization (AEFI)	12
Appendix A: Vaccine Cold Chain Exposure Report Form	13
Appendix B: Reciprocal Notification Form	16
Appendix C: Adverse Events Following Immunization.....	17
Appendix D: Immunization Provider Resource List	18

Introduction

This document has been developed to provide guidance and recommendations related to components of the publicly funded immunization program for Nova Scotia.

- to enhance the efficiency safety and effectiveness of the publicly funded immunization program
- to ensure maintenance of vaccine and biological product potency and reduce wasting of publicly funded products
- to provide guidelines for the standardized management and reporting of adverse events following immunization
- to provide recommendations for vaccine storage and handling for all health-care providers

General Vaccine Storage and Handling Guidelines

- Do not stockpile vaccine
- Count vaccine stock in fridge monthly
- Order the amount of vaccine you expect to use in one month^{1,2}
- Arrange vaccines the same way inside the refrigerator to avoid errors
- Protect vaccines from light at all times
- Maintain the cold chain between 2° to 8°C at all times
- Reconstitute vaccines immediately prior to use
- Use the diluent provided with the vaccine and do not substitute other diluents
- Print the date vaccine is opened on the label of multi-use vials
- Refer to the manufacturer's package insert for stability information after opening
- Contact public health before using vaccine stored outside the 2° to 8°C range
- Do not use any vaccines that are beyond their expiration date
- Remove all expired product from the fridge each month
- Adhere to strict aseptic technique when handling vaccines
- Have an emergency plan in case of a power outage
- Check and log temperature twice a day

1 Complete a Requisition for Publicly Funded Vaccine, by contacting your local Public Health office. Allow 2 – 3 business days for delivery.

2 Please refer to the [NS Immunization Manual](#) Chapter 10 for vaccine eligibility for high risk conditions. You can consult with local [Public Health](#) to request vaccine for high risk conditions on a case by case basis or if you are unsure if your patient is eligible

Vaccine Refrigerators

Any refrigerator used for vaccine storage must be:

- Large enough to hold one month's inventory³
- Equipped with a min-max thermometer or data logger⁴
- Able to maintain vaccine storage temperatures between 2°C and 8°C⁵
- Dedicated to the storage of vaccines only

3 As manufacturers of vaccine are gradually moving toward the use of pre-filled syringes, it is important to plan for the increased space requirements the changes in vaccine packaging will require.

4 The recommended type of thermometer is Canadian Scientific or another Minimum-Maximum (Min-Max) thermometer that is calibrated to +/- 1°C accuracy

5 Although there may be some commercial grade small fridges designed specifically to maintain drugs and vaccines, any other style of small, single door fridge (e.g. bar fridge) is unpredictable in terms of maintaining temperatures within the required range of 2° to 8° C and should NOT be used to store vaccines. For more detail refer to the [National Vaccine Storage and Handling Guidelines](#).

Organizing the Vaccine Fridge

- Remove expired vaccine from the fridge
- Return all expired unopened vaccine to local public health
- Order the amount of additional vaccine you will need for one month
- Ensure products that expire first are placed in front the fridge
- Store vaccine between 2°C and 8°C
- Store full bottles of water on empty shelves and in the door
- Don't store vaccines on door shelves
- Store only vaccines in the refrigerator
- Open the door only when necessary

Keep Vaccine Safe

Ordering Vaccine

- Complete a refrigerator inventory once a month, prior to placing your order.
- Maintain no more than a one month supply of vaccine.
- Order vaccine for your patient population only.

Storing Vaccine

- Store all vaccine between 2°C and 8°C.
- Keep a digital high-low thermometer in refrigerator and record temperature twice daily.
- Contact your local Public Health office for advice when vaccine has been exposed to temperatures outside of 2°C and 8°C – i.e. power outage or refrigerator failure. Keep vaccine in a functioning refrigerator until you have made contact with Public Health.
- Develop a back-up plan for power outage/refrigerator failure.
- Protect refrigerator plug – secure it so it will not accidentally become unplugged.
- Do not store vaccine in the door of the refrigerator.
- Store full bottles of water on empty shelves and on the door of the refrigerator to maintain consistency in temperature.
- Do not use a “Bar” or half-size refrigerator.
- Use products with the earliest expiry dates first; place vaccine with the longest expiry dates behind those with the earliest expiry dates.
- Do not use your vaccine refrigerator for specimen storage and non-medical purposes such as staff lunches to limit opening your refrigerator door.
- Leave space between products in the refrigerator to allow air to circulate.



Handling Vaccine

- Never leave vaccine outside of the refrigerator.
- Remove vaccine from the refrigerator only for withdrawal of the required dose(s).
- Mark the date on all multi-dose vials of vaccine when first opened – use opened vials before opening a new multi-dose vial and use within the timeframe specified by the manufacturer.
- Refer to package insert to determine how long a multi-dose vial can be used after the first dose is withdrawn.

Transporting Vaccine

- Use insulated coolers with tight fitting lids and ice packs when transporting vaccine.
- Keep ice trays and ice packs in your freezer for use during transport of vaccine.
- Do not put vaccine directly on ice pack.
- Keep vaccine in original package.
- Wrap vaccine in bubble wrap.
- For long distance travel, wrap bubble-wrapped vaccine in newspaper for extra insulation and place a thermometer in the cooler.

Disposal of Vaccine

- Vaccine expires at the end of the month (i.e. June /12 means June 30, 2012).
- Return all expired/spoiled vaccine and unused vials to your local Public Health office.

Recording Vaccine

- Complete reciprocal notification form or EMR immunization report and submit to your local Public Health office monthly.
- Document in patient chart vaccine given, dose, site, route, date, Lot #, and person who administered the vaccine.

Public Health contact information:

South Shore Health
Bridgewater Tel: 543-0850

Pictou County Health Authority
New Glasgow Tel: 752-5151

South West Health
Yarmouth Tel: 742-7141

Guysborough Antigonish Strait
Health Authority
Antigonish Tel: 867-4500 ext 4800

Annapolis Valley Health
Wolfville Tel: 542-6310

Cape Breton District Health
Authority
Sydney Tel: 563-2400

Colchester East Hants Health
Authority
Truro Tel: 893-5820

Capital Health
Dartmouth Tel: 481-5800

Cumberland Health Authority
Amherst Tel: 667-3319



Public Health Services

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13114/01/01 REV 01-13

Routine Vaccine Orders and Pickup

Supplies required for routine monthly vaccine pick up from your local public health office:

- hard sided cooler
- insulating material such as bubble wrap
- frozen ice packs
- Min-Max thermometer

Vaccine Cold Chain Break Management and Reporting

If you become aware of inappropriate vaccine storage conditions, *do not discard the vaccine*. Report details of the cold chain break to your local Public Health office.

- do not discard vaccines
- mark the products as being exposed to cold chain break
- store exposed vaccines in the fridge, in a container/bag marked "Cold Chain"
- complete the Vaccine [Cold Chain Exposure Report Form](#) in [Appendix A](#)
- document action that has been taken to protect the vaccines
- note the product's appearance (e.g., evidence of ice formation)
- document the names of the vaccine, lot number, expiry date, and quantity
- use the exposed vaccines deemed safe to use before using new vaccine
- document name, number, expiry date of vaccines not safe to use
- return unopened vials of exposed vaccine in to local public health

Emergency Preparedness and Vaccine Storage and Handling

When immunization providers have reasonable cause to believe that weather conditions, natural disasters, or other emergencies might affect vaccine storage conditions, urgent procedures should be implemented in advance of the event.

In preparation for any emergency, the following steps should be taken:

- Identify all alternative storage facilities with back-up power
- Have arrangements for transportation of vaccines
- Pack the refrigerator with adequate cold packs and water bottles while the power is still on
- Ensure availability of appropriate packing containers, cold packs, etc.
- Prepare a list of emergency phone numbers:
 - Power company
 - Temperature alarm monitoring company
 - Back up storage facility
 - Transport company
 - Weather service
 - Document vaccine details name, expiry, # doses
 - Record refrigerator temperature, time and date

Post Event: For vaccines exposed to temperatures outside 2°C to 8°C range refer to section titled [Vaccine Cold Chain Break Management and Reporting](#).

Reporting Requirements

Reporting of Immunizations to Public Health

Each person receiving an immunization should receive an individual record for personal retention and reference containing the following information:
immunization:

- | | |
|-------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Name of the person immunized | <input type="checkbox"/> Date Given (Day, Month, Year) |
| <input type="checkbox"/> DOB | <input type="checkbox"/> Site |
| <input type="checkbox"/> Gender | <input type="checkbox"/> Route |
| <input type="checkbox"/> Health Card Number | <input type="checkbox"/> Dose |
| <input type="checkbox"/> Vaccine name | <input type="checkbox"/> Professional signature |
| <input type="checkbox"/> Lot Number | |

As key participants in the publicly funded immunization program, all immunization providers must provide detailed information for each immunization provided to their local public health office.

Reporting of immunization records to local Public Health can be done through:

- Automatic monthly report from the Nightingale EMR
- Reciprocal notification form (Appendix B)
- Copy of the client's immunization record

When reporting the immunization to local public health, the following information should be provided:

- | | |
|-------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Name of the person immunized | <input type="checkbox"/> Lot Number |
| <input type="checkbox"/> DOB | <input type="checkbox"/> Date Given (Day, Month, Year) |
| <input type="checkbox"/> Gender | <input type="checkbox"/> Site |
| <input type="checkbox"/> Health Card Number | <input type="checkbox"/> Dose |
| <input type="checkbox"/> Provider or clinic name | <input type="checkbox"/> Route |
| <input type="checkbox"/> Vaccine Name | |

Reporting of Adverse Events Following Immunization (AEFI)

Under the Nova Scotia Health Protection Act and the Regulations under the Act, an Adverse Event Following Immunization is notifiable and must be reported to the Medical Officer of Health, through local Public Health. Minor expected reactions as outlined in the vaccine product monograph do not need to be reported. ([Appendix C](#))

Report AEFI to public health when the event meets any of the following:

- has a temporal association with a vaccine
- has no other clear cause at the time of reporting
- is serious in nature
- is life threatening
- results in death
- requires hospitalization \geq 24 hours
- prolongs an existing hospitalization
- results in residual disability
- is associated with a congenital malformation
- is unusual or unexpected
- occurs in a cluster

Appendix A: Vaccine Cold Chain Exposure Report Form

INCIDENT REPORT:	VACCINE COLD CHAIN FAILURE Part 1	Page _____ of _____
Site Location:	_____	Date of Incident: _____
Phone Number:	_____	Date Reported to PHS: _____
Fax Number:	_____	Date Reported to DHW: _____
Name of Contact Person:	_____	Address: _____

<p>STEP 1: CHECK ONE BOX (UNDER EITHER A, B, C, OR D) THAT BEST DESCRIBES THE PROBLEM:</p> <p>A. Power Interruption: A.1 <input type="checkbox"/> Power Outage A.2 <input type="checkbox"/> Power Interruption to Equipment</p> <p>B. Equipment Problem: B.1 <input type="checkbox"/> Equipment Breakdown B.2 <input type="checkbox"/> Other Temperature Problem</p> <p>C. Handling Error: C.1 <input type="checkbox"/> Vaccine Left Out C.2 <input type="checkbox"/> Refrigerator Door Left Open</p> <p>D. Shipment Problem: D.1 <input type="checkbox"/> Temp Reading \uparrow or \downarrow D.2 <input type="checkbox"/> Product Damaged in Transit</p> <p>E. Exposed Temperature C° Highest: _____ Duration: _____</p> <p style="padding-left: 200px;">Lowest: _____ Duration: _____</p>	<p>PLEASE DESCRIBE THE EVENT</p> <p>Immediate Advice to Person Reporting (check as completed):</p> <p><input type="checkbox"/> Isolate vaccine in question in a bag/container and keep within 2°-8°C</p> <p><input type="checkbox"/> Clearly mark the bag/container "Do Not Use: Quarantined"</p> <p><input type="checkbox"/> Mark exposed vaccines with a permanent marker indicating the cumulative length of time exposed to a cold chain break</p>
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<p>STEP 2: ANSWER EACH QUESTION BELOW (E to I):</p> <p>E. Was a min/max thermometer in the fridge? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>F. Were water bottles in the fridge and ice packs in the freezer at the time of this event? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>G. Was there a temperature log maintained for this fridge? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>H. What was the air temperature of the room where vaccines were stored? _____</p> <p>I. What actions have been taken to correct the problem? _____</p>	<p>Total value of vaccines lost to cold chain break. (REQUIRED)</p> <p style="font-size: 2em;">\$</p>
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Completed by: _____	Date: _____
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Part 2 of 2: Incident Report: Vaccine Cold Chain Failure:

Site Location: _____
 Name of Contact Person: _____
 Phone Number: _____

Date of Incident: _____
 Date Reported to Public Health: _____
 Fax Number: _____

accine Name	Lot Number	Expiry Date	# of Doses	# of Previous Exposures and Duration	Manufacturer	USE: Mark as Exposed	DO NOT USE
Act Hib					SP		
					SP		
Adacel Polio					SP		
					SP		
Boostrix					GSK		
					GSK		
Boostrix Polio					GSK		
					GSK		
Fluviral					GSK		
					GSK		
Gardasil					Merck		
					Merck		
Havrix					GSK		
					GSK		
Imovax Rabies					SP		
					SP		
Imogam Rabies Immunoglobulin					SP		
					SP		
Menveo					Novartis		
					Novartis		
Menjugate					SP		
					SP		
Menomune					SP		
					SP		
MMR 11					Merck		
					Merck		
NeisVac-C					GSK		
					GSK		
Pediaxel					SP		
					SP		
Pneumovax 23					Merck		
					MF		
Prevnar 13					Pfizer		
					Pfizer		
Priorix Tetra					GSK		
					GSK		
Recombivax HB					MF		
					MF		
Td Adsorbed					SP		
					SP		
Twinrix					GSK		
					GSK		
Tubersol					SP		
					SP		
Varilrix					GSK		
					GSK		
Total Value of Vaccine Lost							

Temperature Log

1. Record the current temperature and the minimum/maximum fridge temperature twice daily: when you first open the office and before closing.

Mon: _____ Yr: _____		REFRIGERATOR TEMPERATURE								Initial
Day of the Month	Room Temp	AM				PM				
		Time	Current C°	Min C°	Max C°	Time	Current C°	Min C°	Max C°	
1										
2										
3										
4										
5										
6										
7										
8										
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30										
31										
Signatures										

Appendix B: Reciprocal Notification Form

Reciprocal Notification Form



Public Health Services DHA _____

novascotia.ca/dhw

This form is to be completed by the person administering a vaccine.
 A copy is to be sent to the local Public Health Office.
 A copy is to be sent to or retained by the health care provider.

PATIENT INFORMATION									
Surname			Given Names				Phone Number		
Address									
Address									
Postal Code									
If Attending School, Name of School									
Y	Y	Y	Y	M	M	D	D	M	F
Date of Birth				Sex		Health Card Number			
Health Care Provider's Name (Please Print)					Health Care Provider's Phone Number				

ANTIGEN ADMINISTERED. CHECK (✓) BOXES WHERE APPROPRIATE				
DTaP-IPV-Hib <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> 3rd <input type="checkbox"/> 4th <input type="checkbox"/> Meningococcal group C <input type="checkbox"/> Tdap-IPV	Hepatitis B <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> 3rd Hepatitis A <input type="checkbox"/> 1st <input type="checkbox"/> 2nd MMRV <input type="checkbox"/> 1st <input type="checkbox"/> 2nd	Varicella <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> Pneumococcal Polysaccharide <input type="checkbox"/> Td MMRV <input type="checkbox"/> 1st <input type="checkbox"/> 2nd	Influenza <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> Hib <input type="checkbox"/> Tdap Other _____ <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> 3rd <input type="checkbox"/> 4th	Pneumococcal Conjugate <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> 3rd Hepatitis A & B <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> 3rd Other _____ <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> 3rd
Site:	Site:	Site:	Site:	Site:
Dosage:	Dosage:	Dosage:	Dosage:	Dosage:
Route:	Route:	Route:	Route:	Route:
Lot #:	Lot #:	Lot #:	Lot #:	Lot #:

Date Given (YYMM/DD)

Signature of Person Giving Vaccine

Office / Location where Immunization was Given

13189JUN13 REV13-14

Appendix C: Adverse Events Following Immunization

It's the Law: Reporting Adverse Events Following Immunization (AEFI)

What to Report

You are required **BY LAW** to report to Public Health Services the following adverse events that may occur following immunization.

Serious Adverse Events

Report within 1 working day
Any serious reaction that:

- Is life-threatening — e.g., anaphylaxis, Guillain-Barré Syndrome
- Causes or prolongs hospitalization \geq 24 hours
- Results in permanent disability or congenital malformation
- Is fatal

Other Adverse Events

Report within 5 working days

- Neurological events including febrile and afebrile convulsions
- Associated events where medical attention is required
- Events where consideration must be given to postpone or contraindicate future immunizations
- Unexpected events with no alternative explanation

What NOT to Report

Do not report minor expected reactions such as localized tenderness, as outlined in the product monograph, unless they are more severe or more frequent than expected.

How to Report

1. Consult your district Public Health Services office to determine if an AEFI form should be completed.
2. If required, download and complete the AEFI form: www.phac-aspc.gc.ca/im/ae-fi-form-eng.php
3. Send the completed form to your local or district Public Health Services office.

South Shore Health
Public Health Services
Tel: 543-0850
Fax: 543-8024

South West Health
Public Health Services
Tel: 742-7141
Fax: 742-6062

Annapolis Valley Health
Public Health Services
Tel: 542-6310
Fax: 542-6333

Colchester East Hants Health Authority
Public Health Services
Tel: 893-5820
Fax: 893-2614

Cumberland Health Authority
Public Health Services
Tel: 667-3319
Fax: 893-2614

Pictou County Health Authority
Public Health Services
Tel: 752-5151
Fax: 893-2614

Guysborough Antigonish Strait Health Authority
Public Health Services
Tel: 867-4500 ext. 4800
Fax: 863-5111

Cape Breton District Health Authority
Public Health Services
Tel: 563-2400
Fax: 563-2005

Capital Health
Public Health Services
Tel: 481-5800
Fax: 481-5889



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13087/MAR12 REV11-12

Appendix D: Immunization Provider Resource List

[NS Immunization Manual](#)

[Public Health Applications](#)

- [Application for Notifiable Disease Surveillance \(ANDS\)](#)
- [Canadian Network for Public Health Intelligence](#)

[Immunization Competencies for Health Professionals](#)

[Immunization Schedule for Adults](#)

[Immunization Schedule for Children](#)

[School Immunization Schedule](#)

[Routine Childhood Immunization Schedule in NS for Health Professionals](#)

[Tetanus Prophylaxis in Wound Management Poster](#)

[It's the Law: Reporting Adverse Events Following Immunization \(AEFI\)](#)

[National Vaccine Storage and Handling Guidelines](#)

[Canadian Immunization Guide](#)

[Epidemiology and Prevention of Vaccine-Preventable Diseases: The Pink Book](#)

[Vaccine Information Sheets](#)

[Immunize Canada](#)

[Pain Management](#)

[AEFI Reporting Form](#)