Paediatric and Adult Immunizations

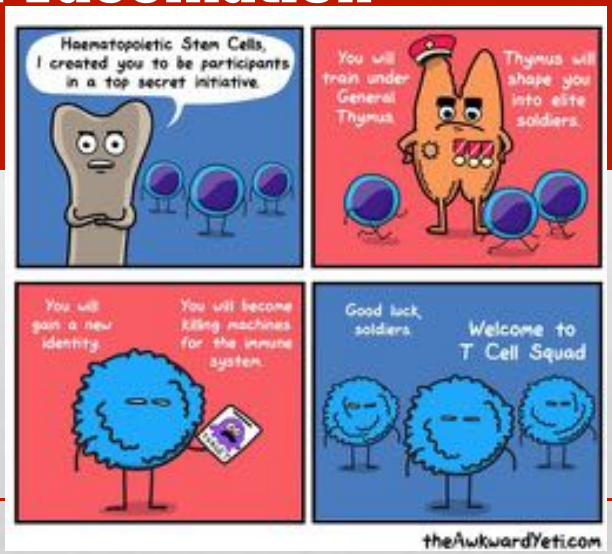
Developed by: Aric Rankin NP-PHC, MN

Module 7

1. Principals of Immunity and Vaccination
2. Getting to know Vaccines
3. Immunization Procedures
4. Case Studies
5. Barriers to Vaccination
6. Consent and Documentation
7. Other Vaccines
8. Reporting Adverse Events
9. Needle Stick Injury Procedure
10. Cold Chain Procedure
11. Emergency Measures

Outline

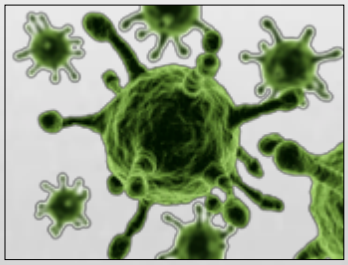
Principals of Immunity and Vaccination



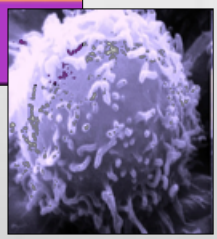
PART 1

What is the purpose of immunity?

- Recognize self from non-self
- Recognize and eliminate infectious agents such as viruses and bacteria
- Prevent infection in the future



Principles: Immunity



- https://www.youtube.com/watch?v=GIJK3dwCWCw
- https://www.youtube.com/watch?v=2DFN4IBZ3rI
- https://www.youtube.com/watch?v=rd2cf5hValM

Immunology 101

Getting to Know Vaccines

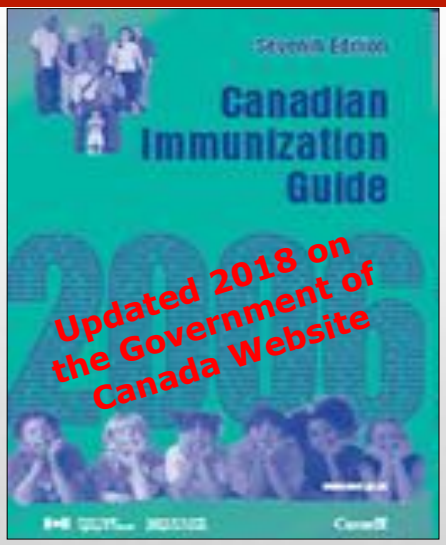
PART 2

Live vs Dead

- Induce immunity by actively replicating within the host
- Vaccine strains are weakened so that infection is either not apparent or very mild *(attenuated)*
- Mimics natural infection
- Leads to T and B cell activation
- Contraindicated in patient with immunodeficiency
- Together or 4 weeks apart

- Contain killed *(inactivated)* bacteria or virus
- Activate innate responses at their site of injection
- Need to be injected into well vascularised muscle to be effective
- Most always require multiple doses
- May require periodic supplemental doses to increase (boost) antibody levels

Types of Immunizing Products



Now lets review the online guide...

https://www.canada.ca/en/public-health/services/canadian-immunization-guide.html

Canadian Immunization Guide

(T)Clostridium tetani
- Direct-contact
- 99% efficacy

(ap)Bordetella pertussis
- Airborne-contact & direct-contact
- 80%-85% efficacy

(IPV)Poliovirus
- Faecal-oral contact
- 100% efficacy

(d)C. Diphtheriae
- Direct-contact & airborne-contact
- 97% efficacy

Haemophilus influenzae Type B
- Airborne-contact & direct-contact
- 95%-100% efficacy

Routine:
4-dose schedule at 2, 4, 6 & 18 months. The series should start no earlier than 6 weeks of age.

Tdap-IPV-Hib
(Pediacel)

(T)Clostridium tetani
- Direct-contact
- 99% efficacy

(d)C. Diphtheriae
- Direct-contact & airborne-contact
- 97% efficacy

(ap)Bordetella pertussis
- Airborne-contact & direct-contact
- 80%-85% efficacy

(IPV)Poliovirus
- Faecal-oral contact
- 100% efficacy

Routine: **1 dose (4y-6y)**

Tdap-IPV
(Adacel-Polio)

(T)Clostridium tetani
- Direct-contact
- 99% efficacy

(d)C. Diphtheriae
- Direct-contact & airborne contact
- 97% efficacy

(ap)Bordetella pertussis
- Airborne-contact & direct-contact
- 80%-85% efficacy

Routine: 1 dose 14y-16 y (10y after the 4-6y booster)

Tdap
(Adacel)

(T)Clostridium tetani
- Direct-contact
- 99% efficacy

(d)C. Diphtheriae
- Direct-contact & airborne-contact
- 97% efficacy

Routine: 1 dose Q10y

Td
(Td Adsorbed)

Streptococcus pneumoniae
• Airborne-contact & direct-contact
• 89%-97% efficacy

SE: redness, swelling, soreness

Routine: 3-dose schedule at 2 & 4 months and 12 months of age for all low risk children < 2 years of age.

High Risk Criteria:

Pneumococcal Conjugate
(Prevnar)

Polysaccharide format:
Streptococcus pneumoniae
• Airborne-contact & direct-contact
• 50%-80% efficacy among elderly and specific groups

Routine: 65y and booster 5 y later

High risk Criteria:
• 2y-64y

Pneumococcal Polysaccharide 23
(Pneumovax 23)

Rotavirus
- Faecal-oral contact
- 85%-98% efficacy
- NEW! 5-valent vaccine
- NEW! 3-dose series

Routine:
- **3-doses scheduled at 2, 4 and 6 months.**
- **Doses must be at least 4 weeks apart**
- **Do not initiate if infant is over 15 wks of age**
- **Completion of series before 8 mos of age.**

Live

Rotavirus
(Rotateq)

N. Meningitidis
- Airborne-contact & direct-contact
- 97% efficacy

Routine: Children aged 1 year old should receive a single dose

High Risk Criteria:
- 2 to 4 doses 2m apart

Meningococcal Conjugate C
(Menjugate)

N. Meningitidis
• Airborne-contact & direct-contact
• 80%-85% efficacy within 3-4 years of vaccination

SE: redness, swelling, soreness at injection site

Routine: Students in grade 7 are eligible to receive a single dose of Men-C-ACYW.

High Risk Criteria:

Meningococcal Conjugate ACYW-135 (Menactra)

Measles virus
• Airborne-contact
• 100% efficacy

Mumps virus
• Airborne-contact & direct-contact
• 76%-95% efficacy

Rubella virus
• Airborne-contact
• 97% efficacy

SE: pain, redness at injection site, low-grade fever and rash

Routine: The 1st dose of MMR should be given on or after the 1st birthday The 2nd dose should be given as MMRV at 4-6 years of age.

Outbreak of Mumps in SLZ in 2017

Live

Measles, Mumps, Rubella (MMRII, Priorix)

Varicella zoster
• Airborne-contact
• 94.4%-98.3% efficacy

SE: pain, swelling, redness at injection site, low-grade fever and varicella like rash (3%-5% of vaccines)

Routine: Children 15 months of age should receive the 1st dose. The 2nd dose should be given as MMRV at 4-6 years of age.

Live

Varicella

(Varivax III, Varilrix)

Measles virus
• Airborne-contact
• 100% efficacy

Mumps virus
• Airborne-contact & direct-contact
• 76%-95% efficacy

Rubella virus
• Airborne-contact
• 97% efficacy

Varicella zoster
• Airborne-contact
• 94.4%-98.3% efficacy

Routine: given at 4-6 years of age.

Live

Measles, Mumps, Rubella, Varicella

(ProQuad, Priorix-Tetra)

Hepatitis B Virus
- *Direct*-contact
- 95%-100% efficacy pre-exposure

SE: irritability, headache, fatigue, pain/redness at injection site

Routine: 2-dose* schedule for grade 7 students give 4-6 months apart depending on the product used

Hepatitis B
(Recombivax)

1. Infants born to HBV-positive carrier mothers:
   - premature infants weighing <2,000 grams at birth (4 doses)
   - premature infants weighing ≥2,000 grams at birth and full/post term infants (3 doses)
2. Children <7 years old whose families have immigrated from countries of high prevalence for HBV and who may be exposed to HBV carriers through their extended families (3 doses)
3. Household and sexual contacts of chronic carriers and acute cases (3 doses)
4. History of a sexually transmitted disease (3 doses)
5. **Intravenous drug use** (3 doses)
6. **Liver disease** (chronic), including hepatitis B and C (3 doses)
7. Awaiting liver transplants (2nd and 3rd doses only)
8. Men who have sex with men (3 doses)
9. **Multiple sex partners** (3 doses)
10. Needle stick injuries in a non-health care setting (3 doses)
11. On renal dialysis or those with diseases requiring frequent receipt of blood products (e.g., haemophilia) (2nd and 3rd doses only)

Hepatitis B (High Risk Criteria)

Influenza A virus,
Influenza B virus
• Airborne-contact
• 30% efficacy against influenza-like illness (80% efficacy against laboratory confirmed influenza)

Routine: Age 6m-9y should received 2 doses 4w apart for initial dose then annually prior to flu season

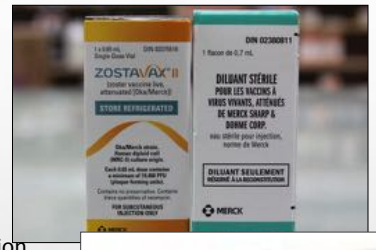
Influenza

(FluLaval Tetra, Fluzone Quadrivalent; FluMist Quadrivalent and Fluzone trivalent – 2018/19)

Herpes zoster
• Direct-contact & rarely airborne-contact
• 51% efficacy
• 65.5% preventing PHN

SE: pain, swelling, redness to injection site

Publicly Funded: 65y-70y
Self-Pay: May have age 50+



Live

Herpes Zoster (Shingles)

(Zostavax II & Shingrix)

Human papillomavirus
- Direct-contact
- 99% protection with 3 dose series
- quadravalent and 9-valent preparations available

Routine:
- **Healthy males/ females 9-14 yrs:**
  - **2 doses (0m and 6m)**
- **Healthy males/ females >15yrs:**
  - **3 doses (0m, 2m, 6m)**

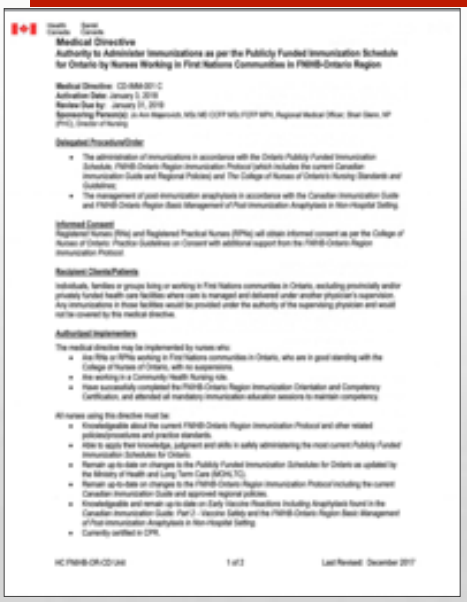
Human papillomavirus

(Cervarix, Gardasil-4, Gardasil-9)

High Risk Vaccine Program

Immunization Procedures

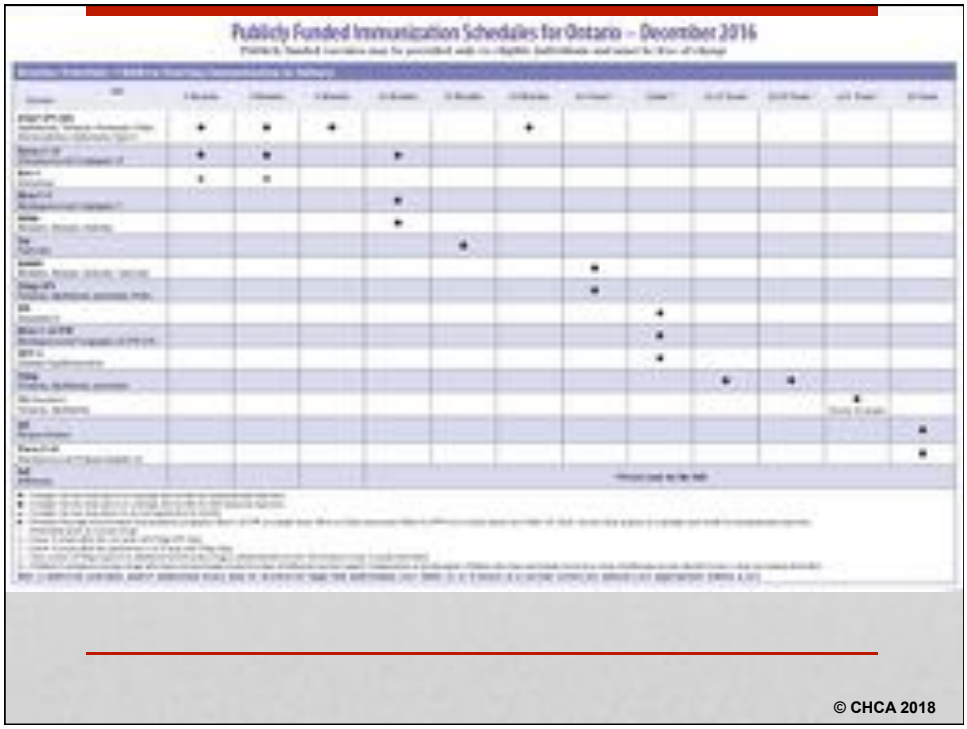
PART 3

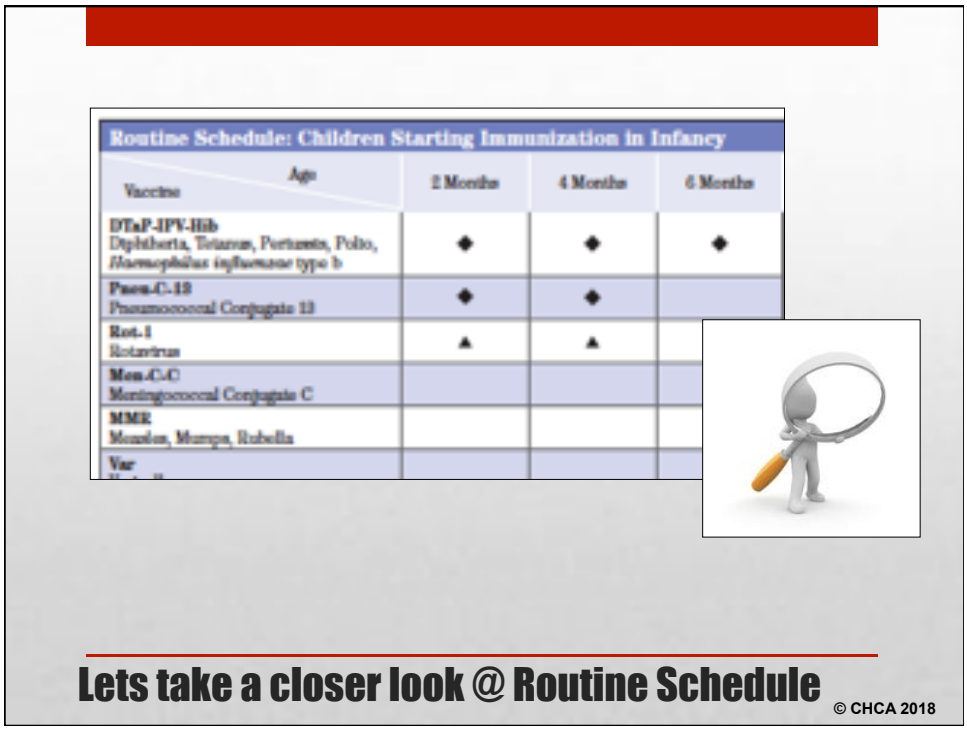


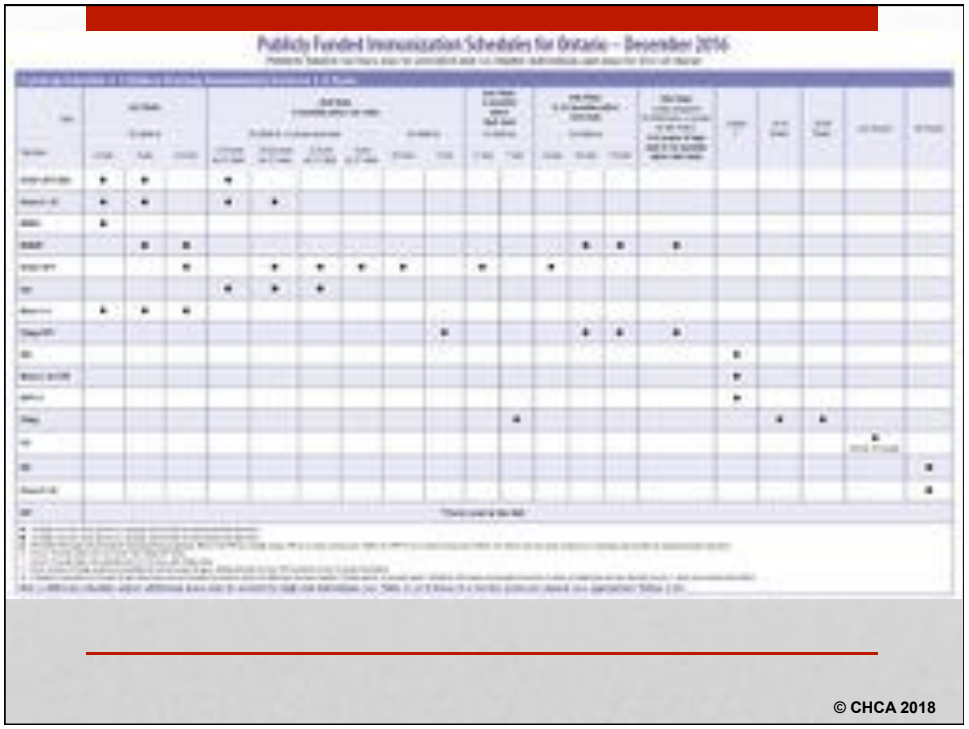
Medical Directive
Authority to Administer Immunizations as per the Publicly Funded Immunization Schedule for Ontario by Nurses Working in First Nations Communities in FNIHB-Ontario Region

Medical Directive:

- Is given in advance by physicians/ordering authorizers to enable an implementer to decide to perform the ordered procedure(s) under specific conditions without a direct assessment by the physician or authorizer at the time.


Publicly Funded Immunization Schedules for Ontario – December 2016
© CHCA 2018


Routine Schedule: Children Starting Immunization in Infancy
Age
Vaccine
2 Months
4 Months
6 Months
DTaP-IPV-Hib
Diphtheria, Tetanus, Pertussis, Polio,
Haemophilus influenzae type b
Pneu-C-13
Pneumococcal Conjugate 13
Rot-1
Rotavirus
Men-C-C
Meningococcal Conjugate C
MMR
Measles, Mumps, Rubella
Var
Lets take a closer look @ Routine Schedule
© CHCA 2018


Publicly Funded Immunization Schedules for Ontario – December 2016
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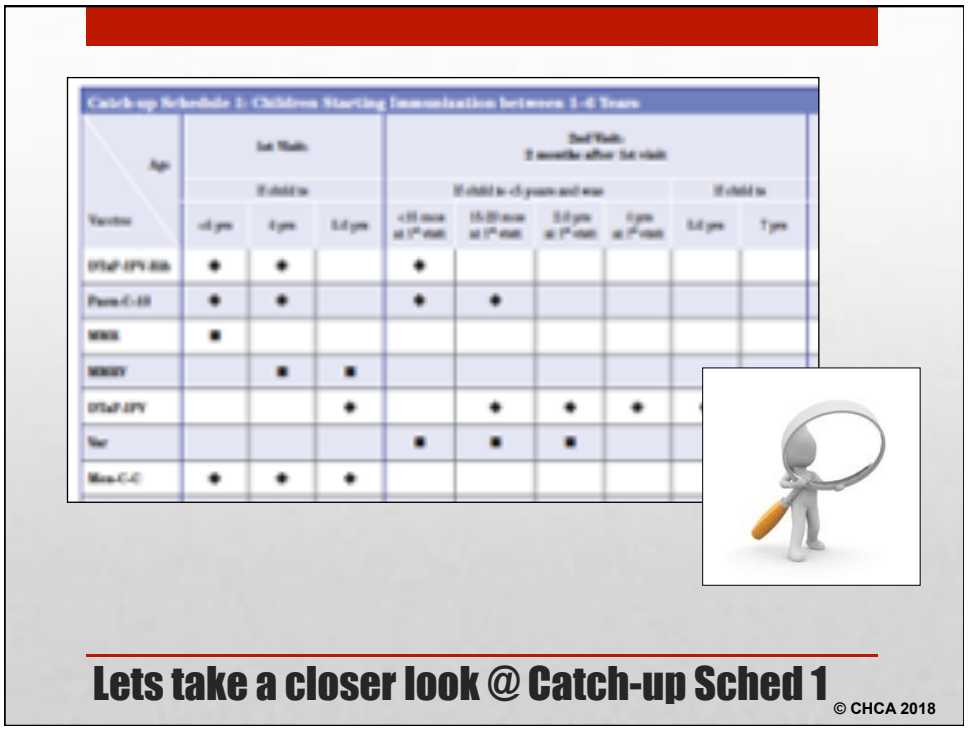
Catch-up Schedule 1: Children Starting Immunization between 1-6 Years
Lets take a closer look @ Catch-up Sched 1
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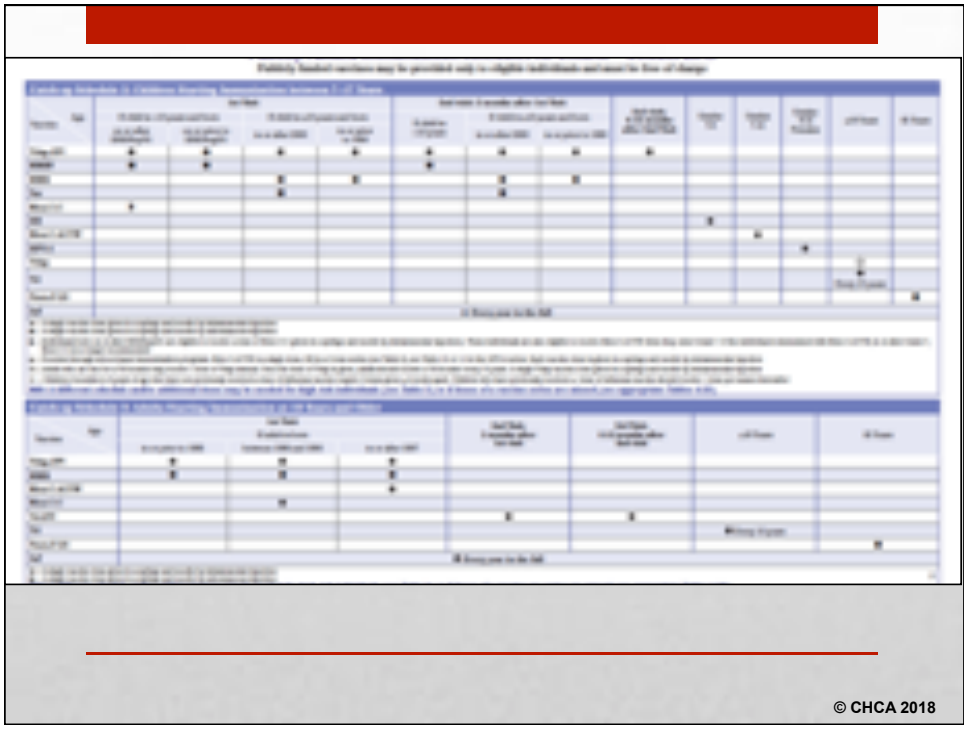

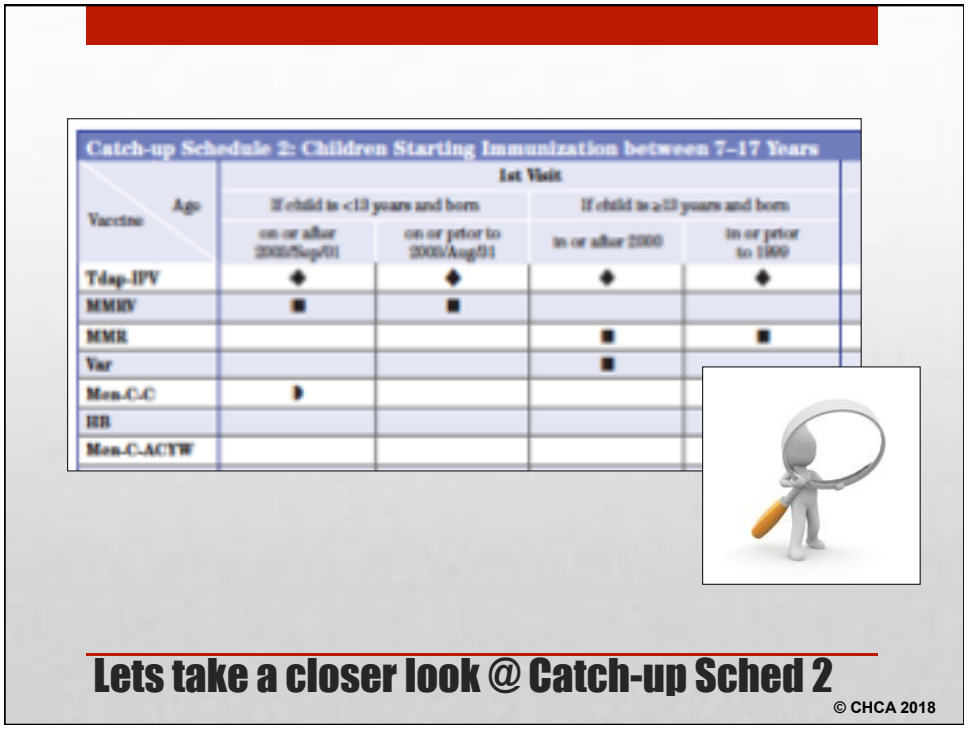
Catch-up Schedule 2: Children Starting Immunization between 7–17 Years
Vaccine
Age
1st Visit
If child is <13 years and born
on or after 2005/Sep/01
on or prior to 2005/Aug/31
If child is ≥13 years and born
on or after 2000
on or prior to 1999
Tdap-IPV
MMRV
MMR
Var
Men-C-C
HB
Men-C-ACYW
Lets take a closer look @ Catch-up Sched 2
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"Interruption of a series of vaccinations for any reason does not require starting the series over again, regardless of the interval elapsed."

General Principle

Case Studies

PART 4

- Nipin is 6 months old and attends the clinic for her well child visit with her mother. According to her chart she is up to date with her immunizations. Which immunizations would you provide at this visit?

- Which vaccines would you review with the family for her next visit?

Case Study #1

- Ricky, 12 months, is brought in for his well child visit with his parents. You notice that he missed his 4 and 6 month well child visits and immunizations.
- What does Ricky require for his immunization catch-up?

- Which vaccines would you review with the family for his next visit?

Case Study #2

- Ruby, 65 years of age attends the clinic today for a periodic health exam. She said she was watching an episode of Dr. Oz and he talked about vaccines for adults. She would like to know what she could receive.
- What immunizations would you discuss with her given her age?

What else would you want to ask her?

Case Study #3

Barriers to Vaccination

PART 5

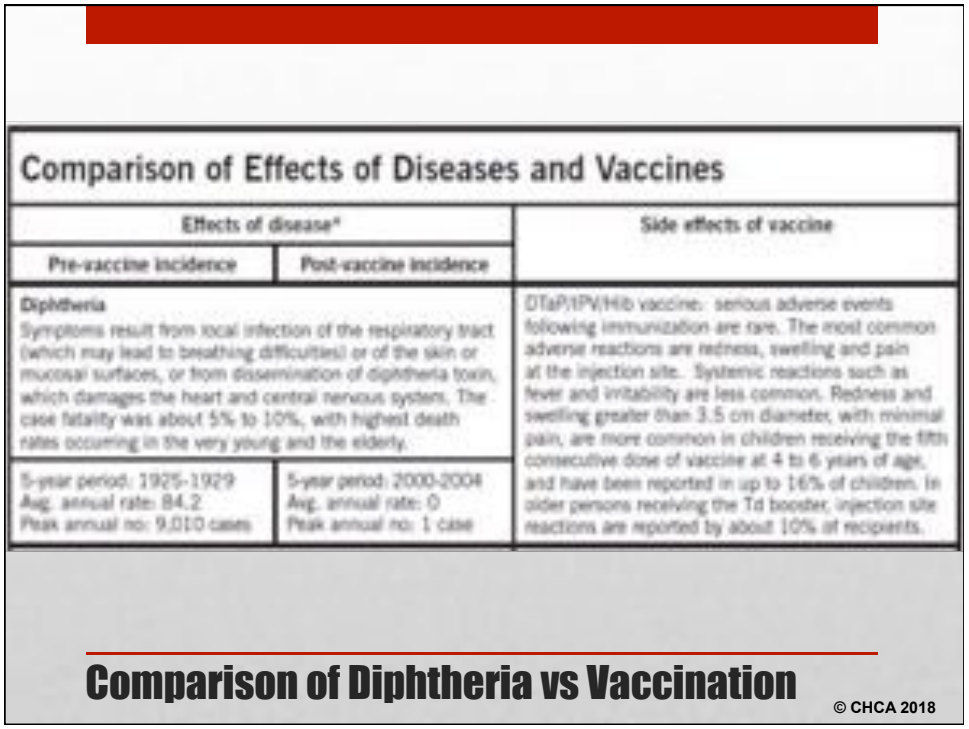
- Immunization service should be responsive to the needs of vaccine recipient.
- When feasible, providers should schedule immunization appointments in conjunction with appointments for other health services.

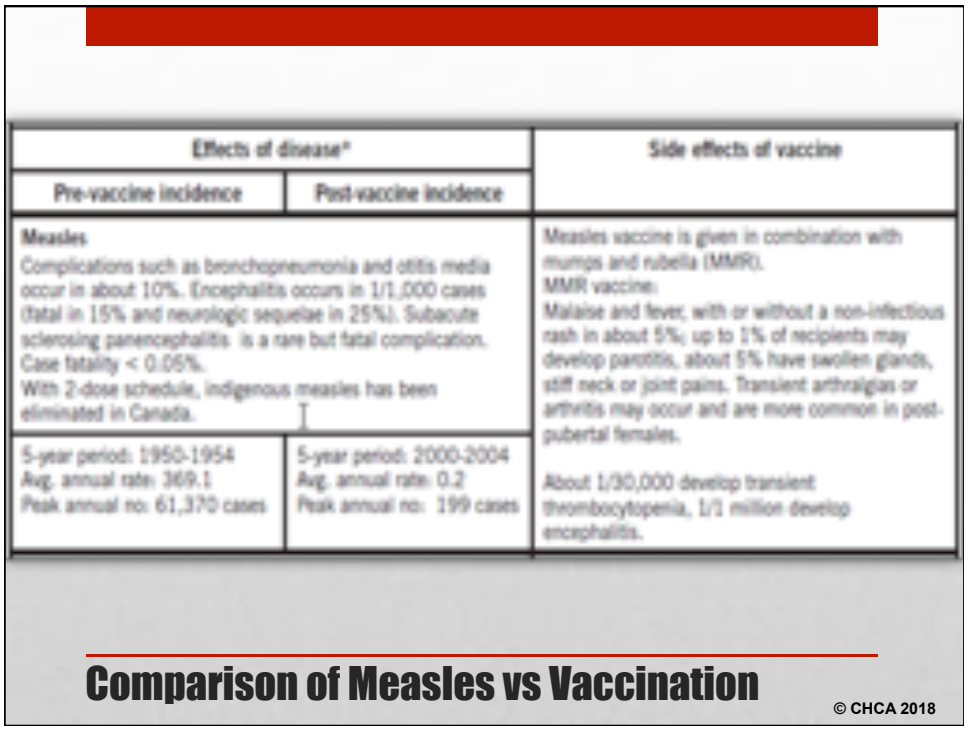
Barriers to Immunization

- **Are vaccines safe?**
  - At least 10 years of research to be approved by Health Canada
  - Vaccines used in Canada are safe and effective.
  - Furthermore, vaccines are readily monitored
- **Will vaccines make me sick?**
  - No
- **What is found in vaccines?**
  - Dead or weakened viruses or bacteria
  - Adjuvants which help the body's immune system respond better to the vaccine
  - Additives (Gelatin) and preservatives which help to maintain the quality and effectiveness of the vaccine

https://www.youtube.com/watch?v=QgpfNScEd3M

Anti-vaccine movement


Comparison of Effects of Diseases and Vaccines
Effects of disease*
Pre-vaccine incidence
Post-vaccine incidence
Side effects of vaccine
Diphtheria
Symptoms result from local infection of the respiratory tract (which may lead to breathing difficulties) or of the skin or mucosal surfaces, or from dissemination of diphtheria toxin, which damages the heart and central nervous system. The case fatality was about 5% to 10%, with highest death rates occurring in the very young and the elderly.
5-year period: 1925-1929
Avg. annual rate: 84.2
Peak annual no: 9,010 cases
5-year period: 2000-2004
Avg. annual rate: 0
Peak annual no: 1 case
DTaP/IPV/Hib vaccine: serious adverse events following immunization are rare. The most common adverse reactions are redness, swelling and pain at the injection site. Systemic reactions such as fever and irritability are less common. Redness and swelling greater than 3.5 cm diameter, with minimal pain, are more common in children receiving the fifth consecutive dose of vaccine at 4 to 6 years of age, and have been reported in up to 16% of children. In older persons receiving the Td booster, injection site reactions are reported by about 10% of recipients.
Comparison of Diphtheria vs Vaccination
© CHCA 2018

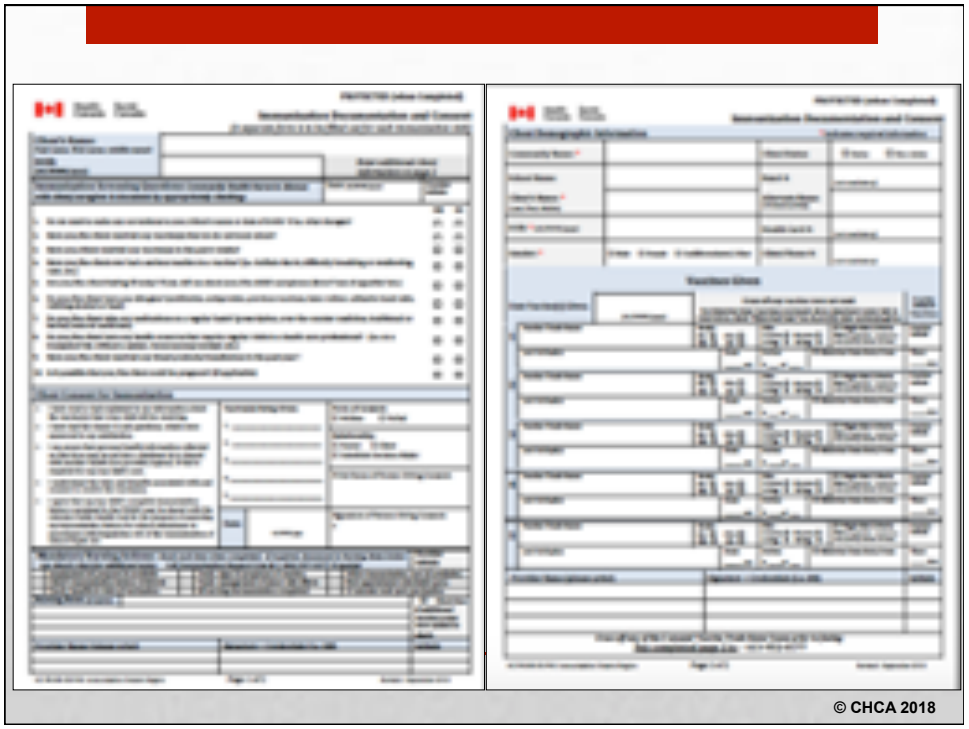

Effects of disease*
Pre-vaccine incidence
Post-vaccine incidence
Side effects of vaccine
Measles
Complications such as bronchopneumonia and otitis media occur in about 10%. Encephalitis occurs in 1/1,000 cases (fatal in 15% and neurologic sequelae in 25%). Subacute sclerosing panencephalitis is a rare but fatal complication. Case fatality < 0.05%.
With 2-dose schedule, indigenous measles has been eliminated in Canada.
5-year period: 1950-1954
Avg. annual rate: 369.1
Peak annual no: 61,370 cases
5-year period: 2000-2004
Avg. annual rate: 0.2
Peak annual no: 199 cases
Measles vaccine is given in combination with mumps and rubella (MMR).
MMR vaccine:
Malaise and fever, with or without a non-infectious rash in about 5%; up to 1% of recipients may develop parotitis, about 5% have swollen glands, stiff neck or joint pains. Transient arthralgias or arthritis may occur and are more common in post-pubertal females.
About 1/30,000 develop transient thrombocytopenia, 1/1 million develop encephalitis.
Comparison of Measles vs Vaccination
© CHCA 2018

Consent and Documentation

PART 6

- To obtain informed consent for the administration of immunizations parent/ guardian or individual must be given information about:
  - the disease related to the vaccine,
  - the component of the vaccine,
  - the immune process and
  - information about the immunization schedule for the vaccine.

Informed Consent



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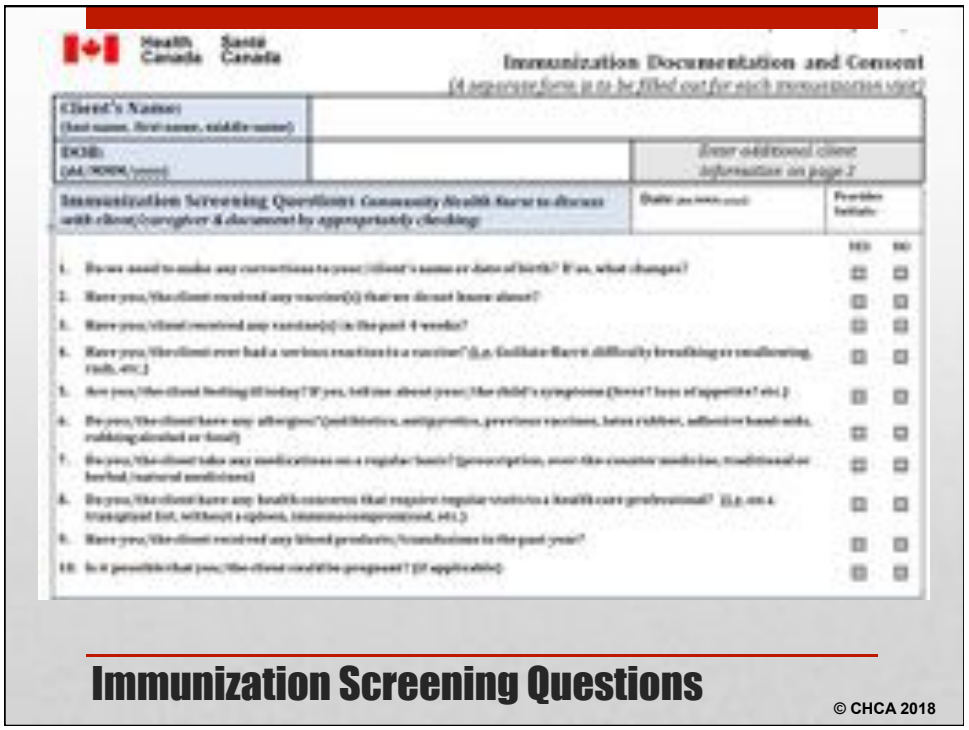
Health Canada
Santé Canada
Immunization Documentation and Consent
Client's Name:
DOB:
Enter additional client information on page 2
Immunization Screening Questions
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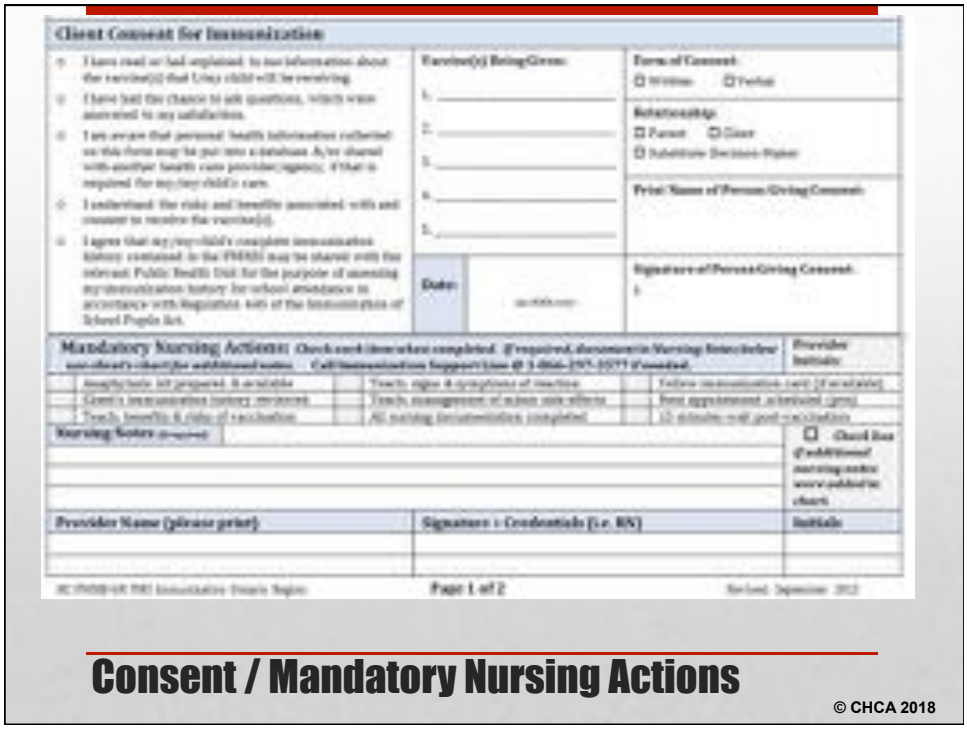
Client Consent for Immunization
Mandatory Nursing Actions
Provider Name (please print)
Signature + Credentials (i.e. RN)
Initials
Page 1 of 2
Consent / Mandatory Nursing Actions
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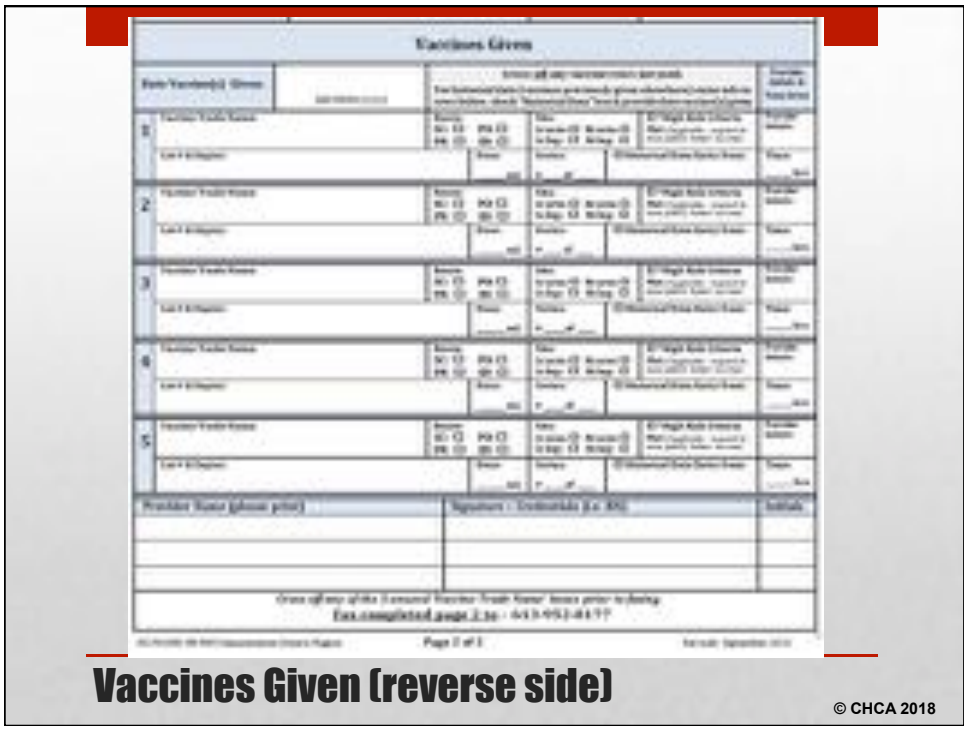
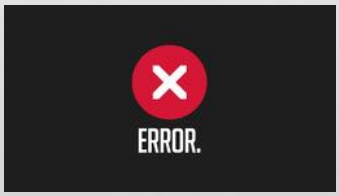

Vaccines Given
Page 2 of 2
Vaccines Given (reverse side)
© CHCA 2018

- Errors must be documented on a med error form and reported to your NIC and/or NPC
- Errors may also be found on documentation forms that are sent in for data entry. This must be reported to the immunizing nurse (for clarification) & if warranted, the NIC or zone NPC

This system is not meant to be punitive, rather, to see where more support can be offered to nurses in the field.



Immunization Errors

Other Vaccines

PART 7

- Immune globulins are proteins extracted from blood serum
- It contains antibodies that recognize and attack specific antigens
- Non-specific immune globulins administered intramuscularly are used to prevent Measles and Hepatitis A or B
- Immune Globulins are short acting, therefore, vaccinations need to be given in addition for a long lasting effect

Principles: Immune Globulins

Clostridium perfringens Anti toxin

- Anti-toxins are antibodies that have the ability to neutralize a specific toxin.
- They are produced by injecting animals with a specific toxin.

Examples: diphtheria, gas gangrene, botulism tetanus

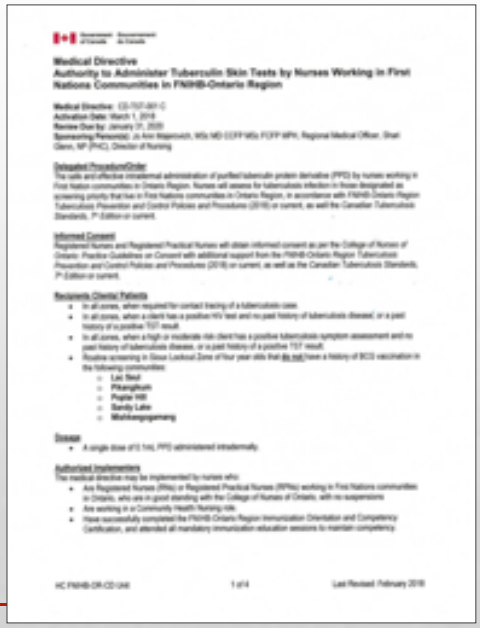
Principles: Anti-Toxins

Tuberculin Skin Test (TST)

Delegated procedure

Recipient Client/Patients:

- Contacts of active TB cases
- Routine screening of 4 and 14 year olds in TBZ and MFZ
- Routine Screening of 4 year olds with no BCG History in Lac Seul, Pikangikum, Poplar Hill, Sandy Lake and Mishkeegogamang
- When required prior to giving BCG



Medical Directive
Authority to Administer Tuberculin Skin Tests by Nurses Working in First Nations Communities in FNIHB-Ontario Region

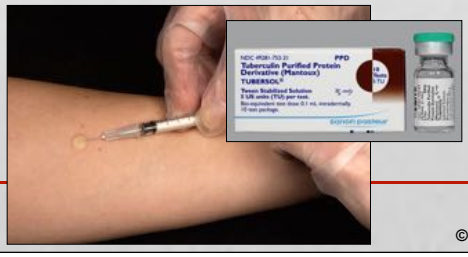
BCG

BCG vaccination is not currently being provided: pending review –Agency RNs are not certified to administer

- *Bacillus Calmette–Guérin (BCG)* vaccine is a vaccine primarily used against tuberculosis.
- BCG is still given in some Northern Communities at Birth
- Agency nurses are **not** certified to give BCG
- Given in Right deltoid
- Can create an open sore for up to 6 weeks
- Dry dressing only. No topical antimicrobials

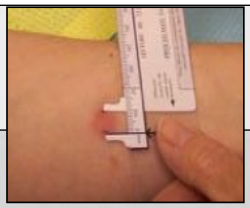
TST

- The Tuberculin Skin Test (TST) or Mantoux test is a tool for screening for tuberculosis (TB) and for tuberculosis diagnosis.
- TST is given at 4-6 years old
- Two step test
- Check at 48-72 hours
- Measure induration only
- What is the work up if positive?

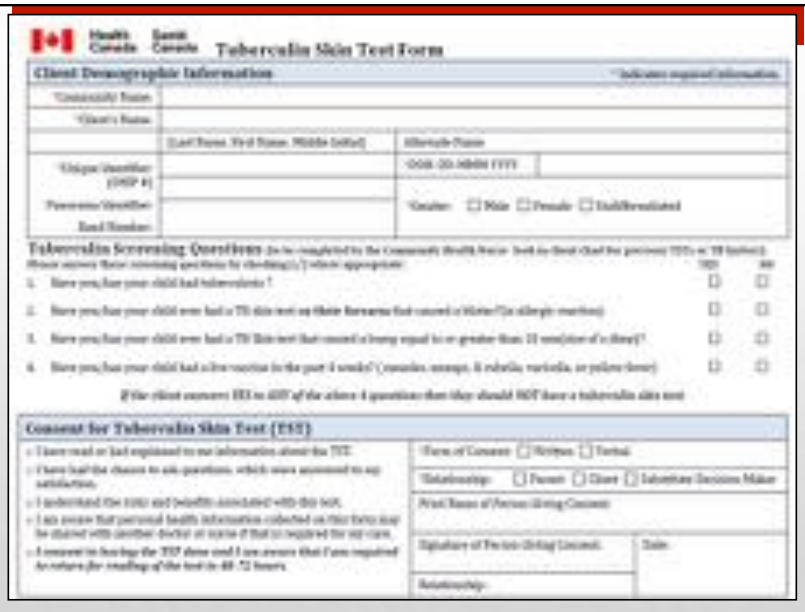


BCG vs. TST

TST Reaction Size	Situation When Result is Considered Positive
0 - 4mm	In general this is considered negative and no tx is indicated Child less than 5 years and high risk of TB infection
5 - 9mm	HIV infection Contact with infectious TB within the past 2 years Fibronodular disease on chest x-ray (healed TB but not previously treated) Organ transplantation (related to immune suppressant therapy) TNF alpha inhibitors Other immunosuppressive drugs e.g. corticosteroids End-stage renal disease
≥ 10mm	TST conversion (within 2 years) Diabetes, malnutrition Silicosis Hematologic malignancies



TST interpretation


Health Canada / Santé Canada

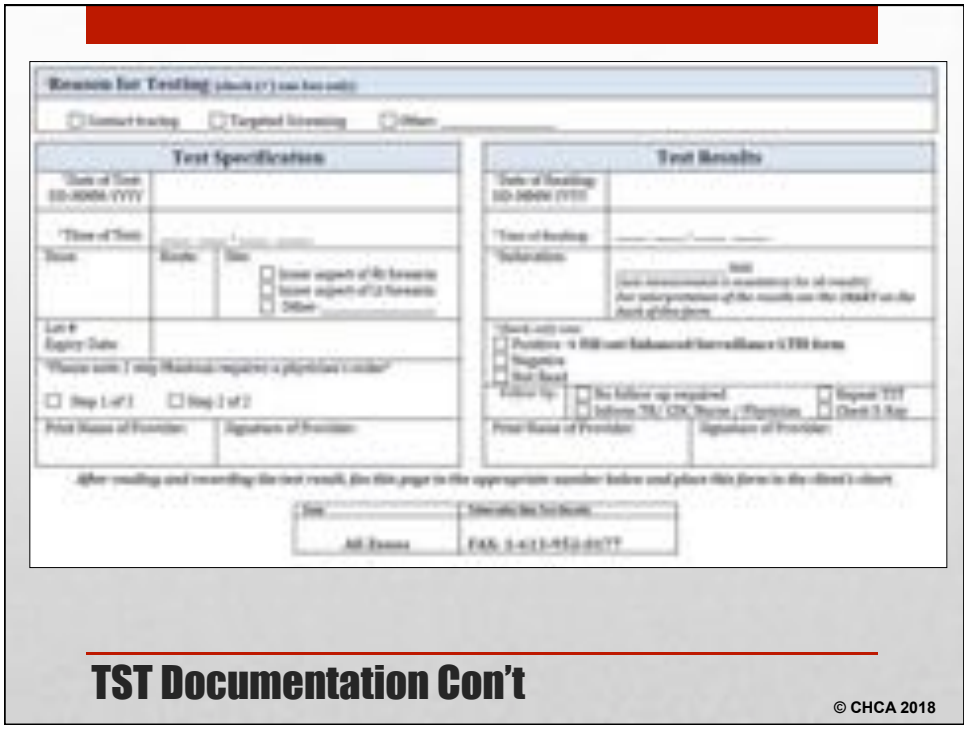
Tuberculin Skin Test Form

Client Demographic Information

Tuberculin Screening Questions

Consent for Tuberculin Skin Test (TST)

TST Documentation


Test Specification
Test Results
TST Documentation Con't
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Reporting Adverse Events
PART 8
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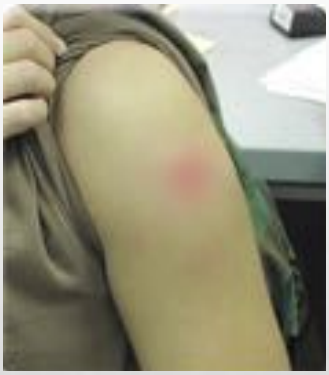
Management of Adverse Events

- Vaccines are safe and continue to be a positive contribution to overall population health, however, there is a slight risk of adverse reactions as a result of vaccination.
- Local reactions are the most common occurrence after a vaccination
- They normally present as indurations, pain or sensitivity, redness or heat at the injection site
- These are generally self limiting and require no treatment

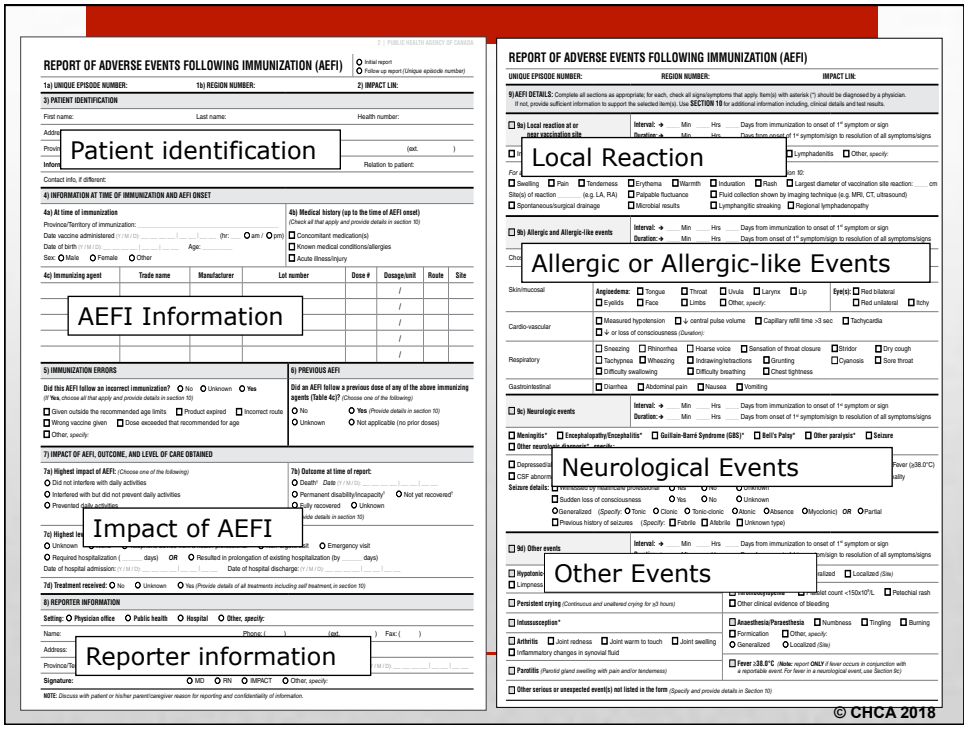


Injection site reaction

Reportable Adverse Events

Adverse Events Following Immunization (AEFI) are defined as:

- any untoward medical occurrence in a vaccine which follows immunization and which does **not** necessarily have a causal relationship with the administration of the vaccine.
- adverse event may be any unfavourable and/or unintended sign, abnormal laboratory finding, symptom or disease.



- REPORT if the AE has a temporal association with immunization (i.e. the event follows immunization); and
- If the AE has no other clear cause when reporting
- A causal relationship does not need to be proven, and submitting a report does not imply causality.
- Expected AE found in the vaccine's product monograph DO NOT NEED TO BE REPORTED
- If there is any doubt as to whether or not an event should be reported, a conservative approach should be taken and the event should be reported.

What AEFI should be reported?

- Nurse who identifies AEFI notifies the Zone CD Nurse by phone immediately, once the patient is stabilized, fax of the AEFI form (within 24hrs)
- Nurse will inform the patient that the AEFI will be reported to the local public health unit and Health Canada and that they will be contacted with recommendations for future immunization.
- The Zone CD Nurse forwards copies to the Zone Medical Officer, Local PHU and the Regional Communicable Disease Coordinator
- A copy of the AEFI report with recommendation for future immunization is sent by the Zone CD Nurse within two weeks who will contact the nurse
- Nurse will review recommendations with patient

Procedure for reporting AEFI

Needle Stick Injury Procedure

PART 9

- Nurses should avoid needle stick injuries by the use of routine practices such as using the correct personal protective equipment and avoiding recapping needles.

Avoid recapping and reduce needle stick injury

Needle Stick Injuries

1. Report the injury to the NIC
2. Allow the wound to bleed freely, then wash with copious amount of soap and water
3. Complete the "Unusual Occurrence form" and forward to the Zone Nursing Office within 24 hours
4. Review the client's blood serum status (HBsAg, Anti-HBs, Hepatitis C, HIV). If blood status is unknown, obtain consent from the client to obtain the above
5. Test for Anti-HBs, Hepatitis C, HIV as soon as possible
6. Consult physician regarding need for post-exposure prophylaxis (PEP)

Needle Stick Injury Procedure

Cold Chain Procedure

PART 10

Ministry of Health and Long-Term Care (MOHLTC)

(Fund vaccines)

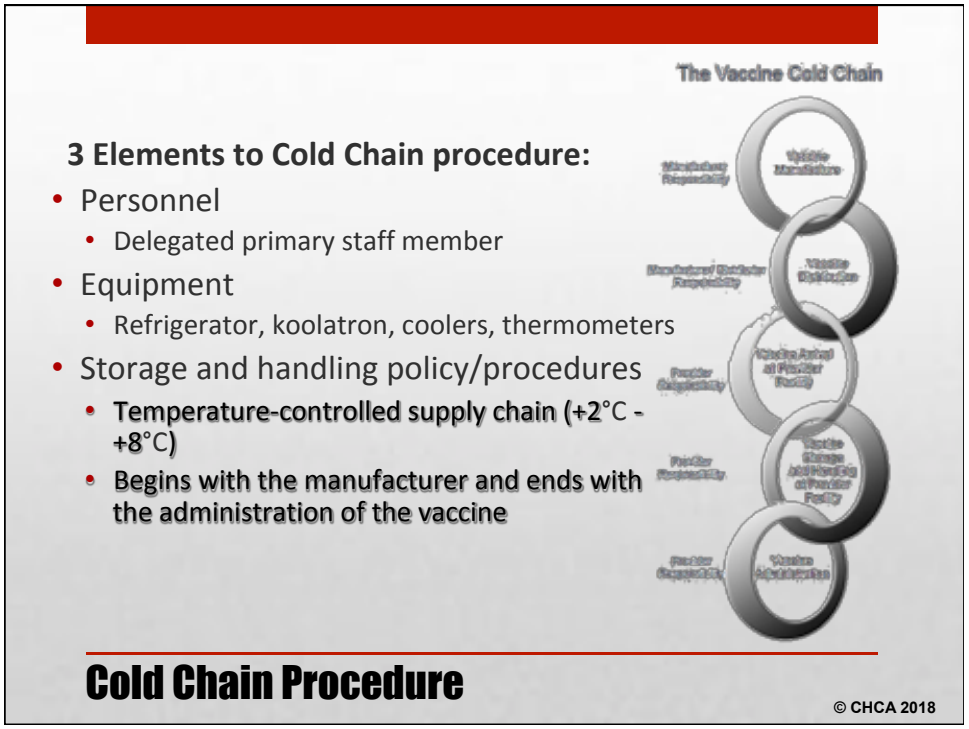
Local Public Health Unit

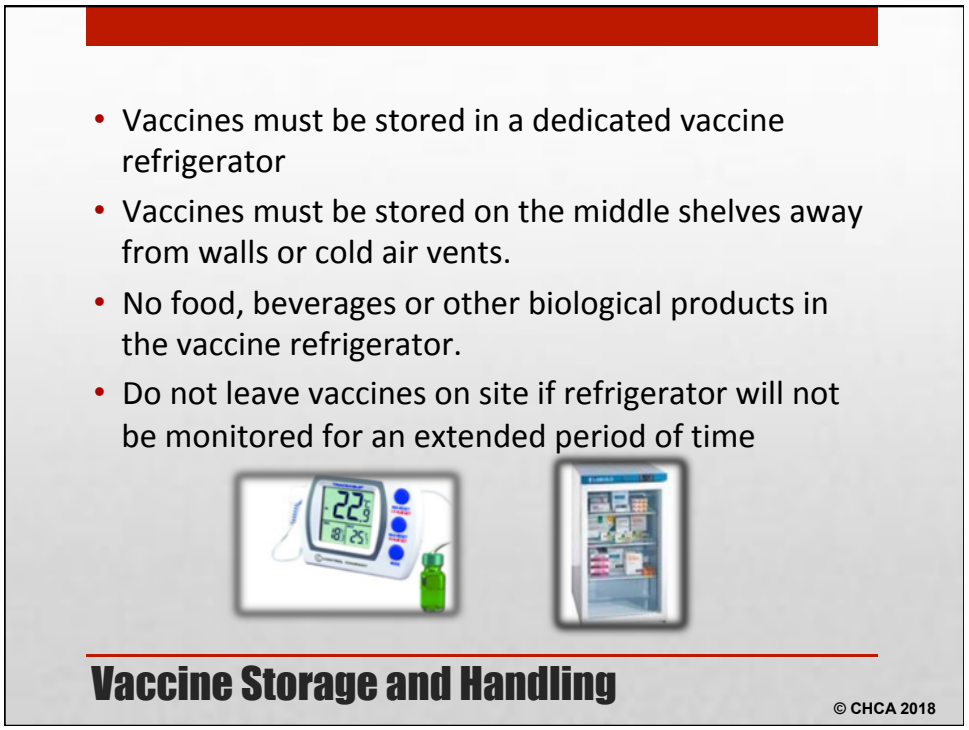
(Store and Dispense vaccines)

First Nation Community

(Provide vaccines)

Vaccine Supply in Ontario

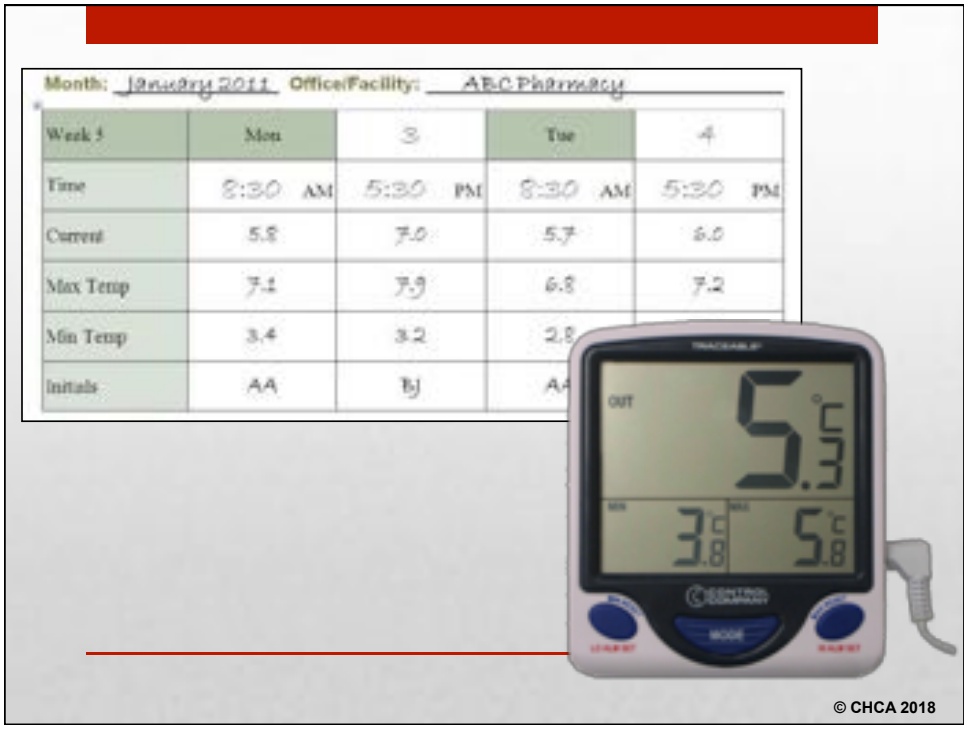

3 Elements to Cold Chain procedure:
• Personnel
• Delegated primary staff member
• Equipment
• Refrigerator, koolatron, coolers, thermometers
• Storage and handling policy/procedures
• Temperature-controlled supply chain (+2°C - +8°C)
• Begins with the manufacturer and ends with the administration of the vaccine
The Vaccine Cold Chain
Cold Chain Procedure
© CHCA 2018


• Vaccines must be stored in a dedicated vaccine refrigerator
• Vaccines must be stored on the middle shelves away from walls or cold air vents.
• No food, beverages or other biological products in the vaccine refrigerator.
• Do not leave vaccines on site if refrigerator will not be monitored for an extended period of time
Vaccine Storage and Handling
© CHCA 2018

Vaccine fridge layout

Lets take a closer look

Daily Vaccine log

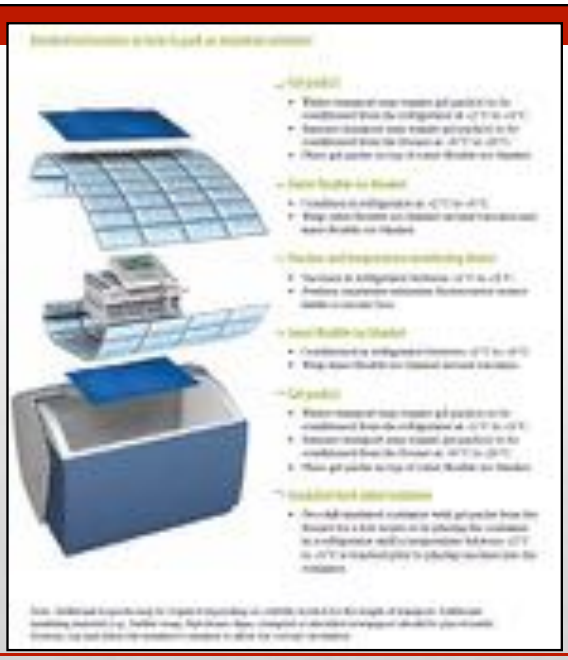


The following 9 steps must be taken in response to a cold chain break:

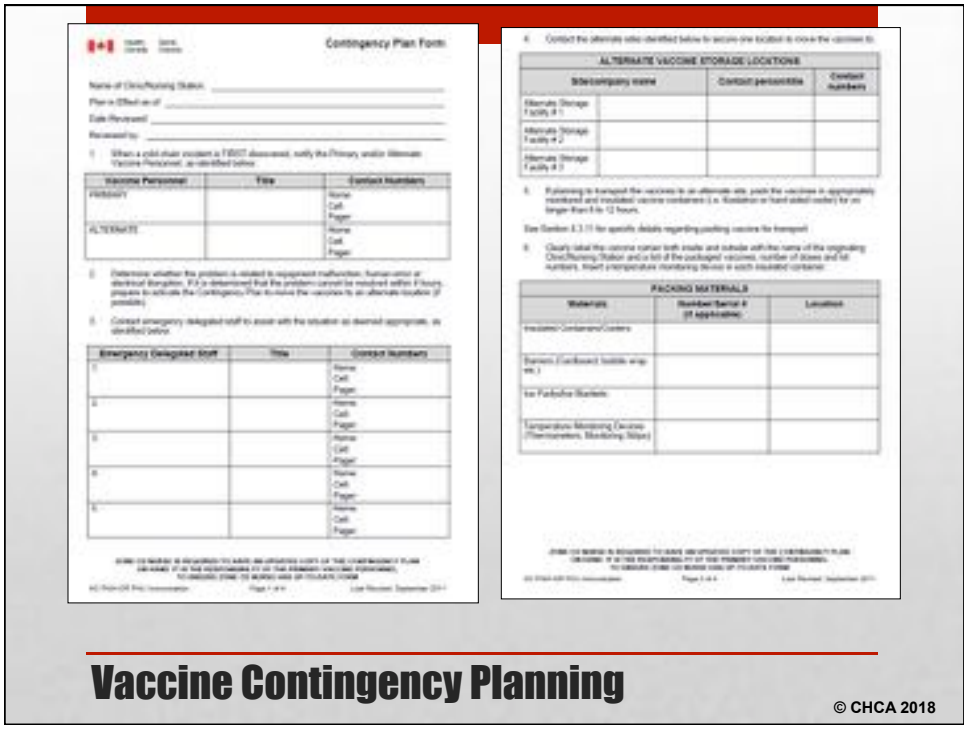
1. **Notify** the vaccine manager immediately of any situation when the refrigerator temperature goes outside of the +2C to +8C range.
2. **Complete** the cold chain Failure/Exposure/Wastage Report form.
3. **Record the date and time** of discovery of the problem.
4. **Record the temperature** (current, minimum, maximum) at the time of discovery of the problem.
5. **Record the estimated duration** of exposure.

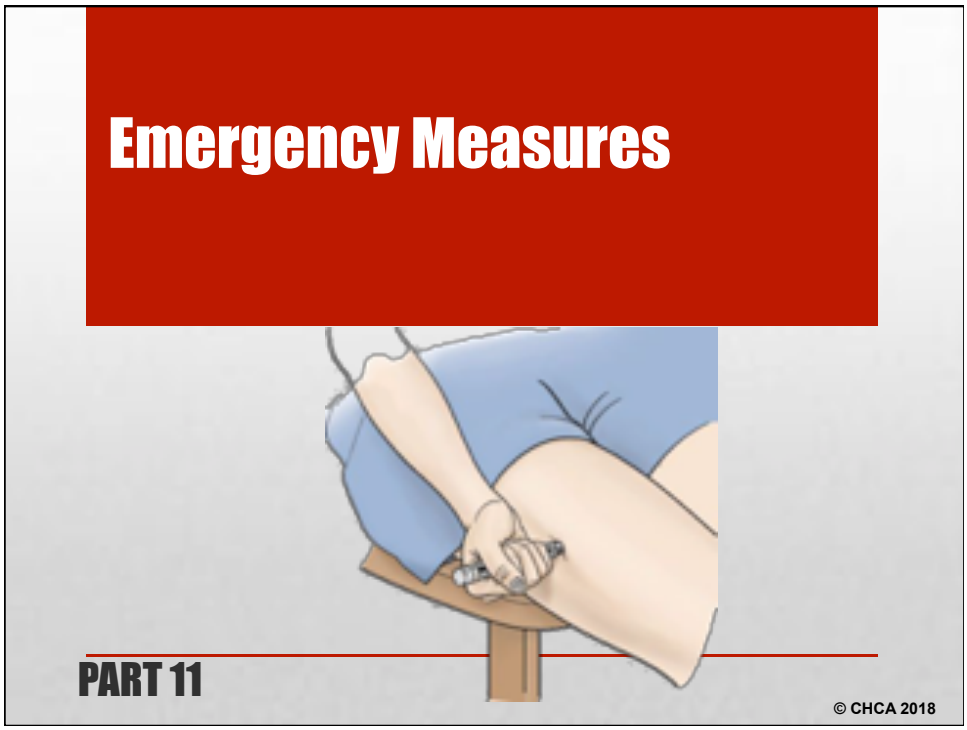
... continued

6. **Record the date and time** of the last recorded temperature which was in the correct temperature range of +2C to +8C.
7. **Record the current inventory** of the vaccines inside the refrigerator. DO NOT open the door unnecessarily, this will cause further temperature fluctuations inside the refrigerator.
8. **Package the vaccine** and label as "DO NOT USE", transfer to a functioning refrigerated unit with the temperature monitor.
9. **Determine** whether the problem is related to the status of the equipment or an electrical problem.



OFF site storage and handling


Contingency Plan Form
ALTERNATE VACCINE STORAGE LOCATIONS
PACKING MATERIALS
Vaccine Contingency Planning
© CHCA 2018


Emergency Measures
PART 11
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- Anaphylaxis is an acute hypersensitivity reaction with multi-organ system involvement that can rapidly progress to a severe life threatening reaction.
- Anaphylaxis following immunization is rare.
- Anaphylaxis generally begins a few minutes after injection and is usually evident within 30 minutes.

Table 1 Mueller's grading for systemic allergic reactions[12]

I	Generalised urticaria, periorbital oedema, itching, malaise, anxiety
II	Angioedema or two or more of the following: chest or throat tightness, nausea, vomiting, diarrhoea, abdominal pain, dizziness
III	Dyspnoea, wheezing, or stridor, or two or more of the following: dysphagia, dysarthria, hoarseness, weakness, confusion, feeling of impending disaster
IV	Hypotension, collapse, loss of consciousness, incontinence, cyanosis

Identification of Anaphylaxis

Basic Management of Post-Immunization Anaphylaxis in Non-Hospital Setting

EARLY RECOGNITION AND TREATMENT IS VITAL

1. Promptly administer aqueous epinephrine 1:1000 by IM in the mid-anterolateral aspect of the thigh.
   - Record time of dose
   - Repeat Q5-15 min PRN; max. 3 doses (don't use the same site as immunization)
2. Activate the emergency Response System (911) or other service as per community protocol
3. Position client:
   - On back or position of comfort
   - Elevate lower extremities
   - Place on side if vomiting or unconscious
   - Pregnancy- place in semi-recumbent position on left side with legs elevated
4. Monitor airway, skin, HR, BP frequently for change in condition. Establish oral airway if necessary
5. Stabilize:
   - Give adjunctive treatment such as diphenhydramine IM if indicated
   - Perform CPR if necessary
6. Arrange for transportation for local hospital or other facility as per community protocol

Treatment Protocol

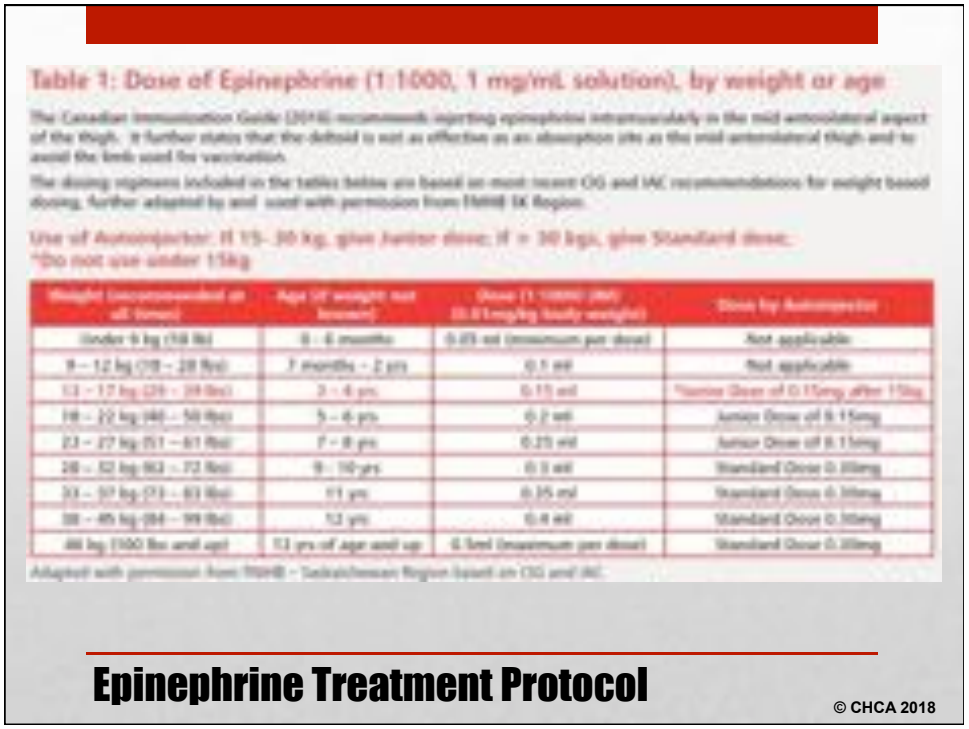


Table 1: Dose of Epinephrine (1:1000, 1 mg/mL solution), by weight or age
Epinephrine Treatment Protocol
© CHCA 2018

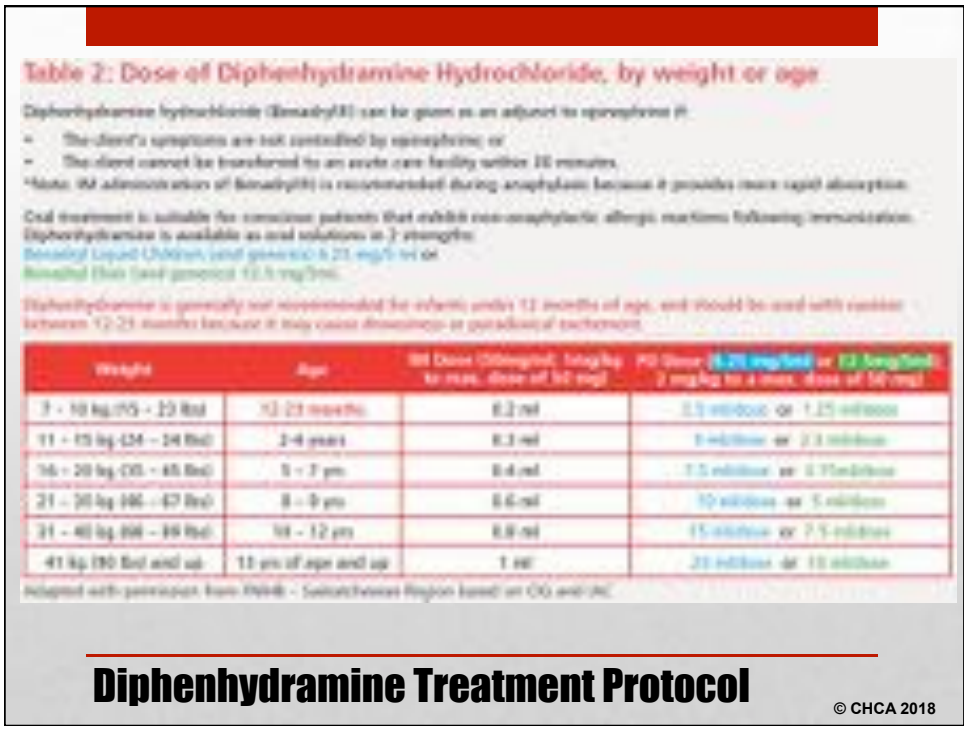
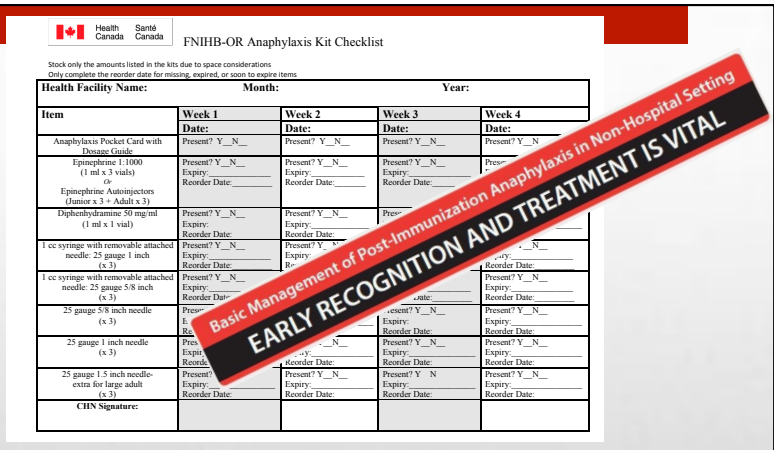


Table 2: Dose of Diphenhydramine Hydrochloride, by weight or age
Diphenhydramine Treatment Protocol
© CHCA 2018



Health Canada / Santé Canada

FNIHB-OR Anaphylaxis Kit Checklist

Stock only the amounts listed in the kits due to space considerations
Only complete the reorder date for missing, expired, or soon to expire items

Health Facility Name:	Month:		Year:	
Item	**Week 1 Date:**	**Week 2 Date:**	**Week 3 Date:**	**Week 4 Date:**
Anaphylaxis Pocket Card with Dosage Guide	Present? Y__N__	Present? Y__N__	Present? Y__N__	Present? Y__N
Epinephrine 1:1000 (1 ml x 3 vials) Or Epinephrine Autoinjectors (Junior x 3 + Adult x 3)	Present? Y__N__ Expiry:_____ Reorder Date:_____	Present? Y__N__ Expiry:_____ Reorder Date:_____	Present? Y__N__ Expiry:_____ Reorder Date:_____	Pres...
Diphenhydramine 50 mg/ml (1 ml x 1 vial)	Present? Y__N__ Expiry: Reorder Date:	Present? Y__N__ Expiry:_____ Reorder Date:	Pres...	
1 cc syringe with removable attached needle: 25 gauge 1 inch (x 3)	Present? Y__N__ Expiry:_____ Reorder Date:_____	Present? Y__N__ Expiry: R...		...Y:__N__ Reorder Date:
1 cc syringe with removable attached needle: 25 gauge 5/8 inch (x 3)	Present? Y__N__ Expiry:_____ Reorder Date:_____			Present? Y__N__ Expiry:_____ Reorder Date:_____
25 gauge 5/8 inch needle (x 3)	Pres... E... Re...		...esent? Y__N__ Expiry: Reorder Date:	Present? Y__N__ Expiry:_____ Reorder Date:
25 gauge 1 inch needle (x 3)	Pres... Expir... Reorde...		...Y:__N__ Reorder Date:	Present? Y__N__ Expiry:_____ Reorder Date:
25 gauge 1.5 inch needle-extra for large adult (x 3)	Present? Expiry:_____ Reorder Date:	Present? Y__N__ Expiry:_____ Reorder Date:	Present? Y N Expiry:_____ Reorder Date:	Present? Y__N__ Expiry:_____ Reorder Date:
CHN Signature:				

Basic Management of Post-Immunization Anaphylaxis in Non-Hospital Setting

EARLY RECOGNITION AND TREATMENT IS VITAL

- Ensure all supplies are stocked in Anaphylaxis Kits, as per recommendations (checklist on LMS)
- Maintain Anaphylaxis Kits, ensuring supplies are sufficient and expiry dates are not surpassed, check weekly.
- Ensure that reference material is current and up to date

Role of Community Health Nurse

- Be familiar with the immunizations
- Observe storage & handling procedures to minimize risks & optimize effectiveness
- Use every opportunity to update a person's immunization status
- It is safe & effective to give multiple injections
- Do not defer vaccination unless there is a true contraindication
- Never mix vaccines in the same syringe
- Always give full doses
- Do not re-initiate a primary vaccine schedule
- Always observe a 15 minute waiting period following immunization

Lets wrap it up···

The Immunization Support Line

1-866-297-3577

Monday – Friday

8:00am-4:00pm Eastern Time

Immunization Support Line

1. Canadian Immunization Guide. Public Health Agency of Canada retrieved from https://www.canada.ca/en/public-health/services/canadian-immunization-guide.html
2. Immune System Part 1- Innate Immune System retrieved from https://www.youtube.com/watch?v=GIJK3dwCWCw
3. Immune System Part 2- Adaptive Immune System retrieved from https://www.youtube.com/watch?v=2DFN4IBZ3rI
4. Immune System Part 3- Cellular Immune Response retrieved from https://www.youtube.com/watch?v=rd2cf5hValM
5. Ontario Immunization Schedule. Government of Ontario. Retrieved from http://www.health.gov.on.ca/en/pro/programs/immunization/docs/immunization_schedule.pdf
6. Immunization Schedule Tool. Government of Canada. Retrieved from https://www.canada.ca/en/public-health/services/provincial-territorial-immunization-information.html?_ga=2.143618044.858817293.1523022460-1921619209.1497638873
7. Immunizations Questions and Answers. Immunize.ca. Retrieved from https://immunize.ca/questions-and-answers
8. Education Program for Immunization Competencies. Advanced Practice. Module 1 – 14
9. M. Lima (2017). Immunization Orientation Sessions 1-3. First Nation Inuit Health Branch- Ontario Region.
10. Adverse Events Following Immunization Form. Government of Canada. Retrieved from https://www.canada.ca/en/public-health/services/immunization/reporting-adverse-events-following-immunization.html
11. Vaccine Storage and Handling Guidelines. Government of Ontario. Retrieved from http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/guide_vaccine_storage.pdf
12. Basic Management of pot-Immunization Anaphylaxis in Non Hospital Setting. Early Recognition and Treatment is Vital (2017). Government of Canada.

References