

4.0 Guidelines for Special Populations

Contents:

Introduction

4.1 Immune Compromised Individuals

4.2 Individuals with Chronic Illnesses

4.3 Pregnant and Breastfeeding Women

4.4 Premature Infants

4.5 Travelers

4.6 Health Care Providers

4.7 Individuals with Inadequate Immunization Records

4.0 Guidelines for Special Populations

Introduction

The purpose of this section is to identify and provide guidance for the immunization of special populations in Nunavut. The special populations that will be discussed in this section are: immune compromised individuals, those with chronic diseases, pregnant and breastfeeding women, premature infants, travelers, health care providers, and those with inadequate immunization records.

4.1 Immune Compromised Individuals

Nunavummiut with immune compromise require special consideration regarding immunizations. These individuals are at high risk of acquiring communicable diseases and each require a thorough assessment and special recommendations for immunizations. Routine questioning for immunodeficiency should be done for all Nunavummiut prior to administering any vaccines.

The 2 major causes of immunodeficiency are congenital (primary) and acquired (secondary) immunodeficiency.

Congenital immunodeficiency is usually inherited and includes the following conditions:

- defects in antibody production (e.g., agammaglobulinemia, isotype and IgG subclass deficiencies, common variable immunodeficiency)
- complement deficiencies (e.g., properdin or factor D deficiency)
- defects in one or more aspects of cell-mediated immunity
- mixed deficits

Acquired immunodeficiency can be caused by:

- malignant hematologic disorders (e.g., leukemia, lymphoma)
- solid tumors
- hematopoietic stem cell transplantation
- solid organ transplantation
- HIV infection
- Long-term immunosuppressive therapy, such as:
 - Long-term steroids
 - Cancer chemotherapy
 - Radiation therapy
 - Medications used to treat auto-immune diseases (e.g., inflammatory bowel disease, psoriasis, and systemic lupus erythematosus)

All Nunavummiut identified with an immune deficiency should be considered individually on a case-by-case basis related to their immunizations.

Inactivated vaccines may be given to immune compromised individuals if indicated. Note that the immune response may not be adequate and further laboratory testing may be required to ensure immunity. Consult the resources listed below for guidance on each vaccine and specific condition causing immune suppression.

In general, live vaccines **should not** be given to immune compromised individuals due to the risk of adverse reactions and potential infection from the disease agent. Always consult with the resources listed below before giving any live vaccine.

Close contacts of immune compromised individuals are strongly encouraged to be fully up-to-date with their vaccinations in order to protect the individual at risk.

Infants born of mothers receiving immune suppressing medications during pregnancy should not receive live vaccines (e.g. BCG vaccine) without further consultation with RCDC.

Immunization providers should consult the following resources when assessing the vaccination needs of immune compromised individuals:

- Canadian Immunization Guide (CIG) Evergreen edition – Part 3 – Vaccination of Specific Populations: <http://www.phac-aspc.gc.ca/publicat/cig-gci/p03-07-eng.php#a5>
- Vaccine specific product monographs/protocols
- Regional Communicable Disease Coordinator
- Primary care physicians/specialists

4.2 Individuals with Chronic Illnesses

Chronic diseases can increase an individual's risk of infection from vaccine preventable diseases and they may be more likely to become seriously ill with complications from the disease. It is important that all individuals with chronic illnesses who are immune competent be completely vaccinated with both live and inactivated vaccines. It is important to note that additional doses or higher dosages of vaccines may be required to provide adequate protection.

The chronic illnesses that require further exploration and review by immunization providers include:

- Asplenia or hyposplenia
- Chronic renal disease/dialysis
- Neurologic disorders
- Chronic lung disease
- Chronic heart disease
- Chronic liver disease
- Endocrine and metabolic diseases

- Non-malignant hematologic disorders
- Chronic inflammatory diseases
- Cancer
- Chronic salicylate therapy in children
- Cochlear implants

Any individual with a chronic illness should be considered on a case-by-case basis utilizing the following resources:

- Canadian Immunization Guide (CIG) Evergreen edition – Part 3 – Vaccination of Specific Populations: <http://www.phac-aspc.gc.ca/publicat/cig-gci/p03-chroni-eng.php>
- Vaccine specific product monographs/protocols
- Regional Communicable Disease Coordinator
- Primary care physicians/specialists

4.3 Pregnant and Breastfeeding Women

There are several considerations for pregnant women and especially women of child bearing age. This is a time when women are in contact with the health care system and immunization status should be assessed.

Vaccination of a pregnant woman can be divided into four categories:

- **Recommended vaccines:**
 - Annual seasonal influenza vaccine (inactivated only)
 - Hepatitis B vaccine - for those who are at risk of infection
 - Tetanus, diphtheria, acellular pertussis (Tdap) – recommended for pregnant women in each pregnancy, ideally between 27 and 32 weeks gestation. See Tdap immunization protocols for more information.
- **Vaccines that may be indicated:**
 - Hepatitis A vaccine - may be used in post-exposure prophylaxis or for travel to high risk endemic area
 - Inactivated Poliomyelitis vaccine - may be considered if immediate protection is required
 - Pneumococcal vaccine - may be given only in those with underlying medical conditions which put them at high risk of invasive pneumococcal disease
 - Meningococcal vaccine - may be considered in post-exposure prophylaxis, travel to endemic areas, and in an outbreak situation
 - Rabies vaccine - in post-exposure prophylaxis only

- **Vaccines not recommended:**
 - Human papillomavirus vaccine
- **Generally contraindicated vaccines – all live vaccines including:**
 - Measles, mumps, rubella vaccine
 - Varicella vaccine
 - Live attenuated intranasal influenza vaccine
 - Oral typhoid vaccine
 - Yellow fever vaccine
 - BCG vaccine

Women of childbearing age who are not pregnant should be up to date on all vaccinations and are a priority group to receive vaccination during the post-partum period. Priority vaccines include:

- Tetanus, diphtheria, acellular pertussis vaccine – as per recommended schedule.
- Measles, mumps, rubella (MMR) vaccine – 2 documented doses of MMR vaccine are required.*
- Varicella vaccine – in women without documented varicella immunization or evidence of varicella disease (should be serologically screened for varicella disease)*

*Note: if the woman received any blood products (including Rh immune globulin) all live vaccinations should be held until further consultation with Regional CDC.

There are no contraindications to breastfeeding women receiving all routine vaccinations in Nunavut.

Breastfeeding infants are recommended to receive all routine vaccinations as scheduled, with the exception of breastfeeding infants of mothers taking immune modulator medications (monoclonal antibodies – such as infliximab or rituximab). These infants are potentially at risk of immunosuppression and should not receive live vaccines (such as BCG vaccine). The infants may receive all routine inactivated vaccines on schedule.

4.4 Premature Infants

Premature infants in stable condition should receive all vaccinations within the routine recommended schedule with the following considerations:

- Premature infants < 1500g weight are at increased risk of apnea, bradycardia, and desaturation following immunization and should have continuous cardiac and respiratory monitoring for 48 hours after receiving any vaccines.

- Hepatitis B vaccine should be delayed in infants weighing less than 2000g if the birth mother is HBsAg negative.
- Hepatitis B vaccine should be given in infants weighing less than 2000g, along with Hepatitis B Immune Globulin if the birth mother is HBsAg positive. 4 doses of the vaccine will need to be given at birth, 1, 2 and 6 months of age.
- Premature infants are at increased risk of respiratory syncytial virus (RSV) and may require monoclonal anti-RSV antibody (palivizumab). Refer to the current RSV and Synagis protocol for complete information of the criteria for program. Throughout the year it is recommended that each health center keep a list of all premature infants born in that year.

4.5 Travelers

All Nunavummiut traveling outside of North America are recommended to be up to date on all routine publically funded vaccinations. It is recommended that a travel consult be done 1-2 months prior to the travel date. If travel vaccinations (such as Hepatitis A, Typhoid) are recommended, the traveler is responsible for paying privately for the vaccines – they are not publically funded.

4.6 Health Care Providers

It is recommended that all health care providers be up to date on all routine immunizations including hepatitis B, tetanus, diphtheria, pertussis, measles, mumps, rubella, varicella, and the seasonal influenza vaccine. Likewise, it is recommended that all health care workers are screened for tuberculosis (TB) as per the current guidelines.

4.7 Individuals with Inadequate Immunization Records

Often individuals do not keep documentation of previous immunizations. For individuals presenting without documented vaccinations, an attempt should be made by the immunization provider to obtain previous immunization records. If no records are available, the individual should be considered to be unimmunized and should be vaccinated as per the recommendations for their age unless known to be immune from previous serological testing. Serology testing should not be routinely done in individuals without documented vaccinations.

References

1. Public Health Agency of Canada. Canadian Immunization Guide – Evergreen Edition (2012). Available at: <http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php>.
2. National Advisory Committee on Immunization. An Advisory Committee Statement: Update on Immunization in Pregnancy with Tetanus Toxoid, Reduced Diphtheria Toxoid and Reduced Acellular Pertussis (Tdap) Vaccine. February 2018.