

Immunization Competencies



For BC Health Professionals



BC Centre for Disease Control
AN AGENCY OF THE PROVINCIAL HEALTH SERVICES AUTHORITY



Preamble

The competencies contained in the *Immunization Competencies for BC Health Professionals* were developed from the *Immunization Competencies for Health Professionals, Public Health Agency of Canada* (<http://www.phac-aspc.gc.ca/im/pdf/ichp-cips-eng.pdf>). The competencies and learning objectives were adapted to the BC context.

The competencies range from knowledge of the scientific basis of immunization to essential immunization practices and contextual issues relevant to immunization. Each competency is supported by a number of guiding learning objectives and key terms.

This document does not dictate how to teach or assess health professionals. Instead, it lays out the essential topics for effective immunization that are universal to a wide range of health professionals. These can be adapted and incorporated into all immunization training or performance evaluations. As such, the immunization competencies proved the framework stakeholders can use to tailor education programs to the needs of health professionals based on their level of experience, practice setting, and degree of involvement with immunization.

Table of Contents

1. Vaccine Preventable Diseases.....	1
2. The Immune System	2
3. Vaccine Development and Evaluation.....	3
4. Immunizing Agents.....	4
5. Vaccine Immune Response	5
6. Immunization Schedules	6
7. Populations Requiring Special Considerations.....	7
8. Storage and Handling of Immunizing Agents	8
9. Administration of Immunizing Agents	9
10. Reactions Following Immunization	10
11. Documentation	11
12. Legal and Ethical Aspects of Immunization	12
13. Population Health	13
14. Communication: Part 1 - Principles	14
15. Communication: Part 2 - Immunization Issues	15
16. The Canadian Immunization System.....	16

1. Vaccine Preventable Diseases

Competency

Demonstrates an understanding of the rationale and benefit of immunization.

Learning Objectives

The health professional will be able to:

1. Describe the historical impact of immunization on the epidemiology of vaccine-preventable disease.
2. Response to the question “Why should I be immunized when vaccine preventable diseases are so rare in Canada?”
3. Describe the key clinical features, including acute and long term complications, of each vaccine-preventable disease.
4. Describe the key epidemiologic features of each vaccine-preventable disease.

Key Terms:

Clinical features, communicability, complications, incubation period, transmissibility, vaccine-preventable diseases.

2. The Immune System

Competency

Demonstrates a general understanding of the immune system.

Learning Objectives

The health professional will be able to:

1. Compare and contrast innate and adaptive immunity.
2. Differentiate between passive and active immunity.
3. Describe the lymphatic system
4. Describe the development of the fetal and infant immune system.

Key Terms:

Active immunity, antibody, antigen, B-lymphocyte (B-cell), cell-mediated immunity (CMI), humoral immunity, passive, immunity, T-lymphocyte (T-cell).

3. Vaccine Development and Evaluation

Competency

Integrates into practice knowledge about the main steps in vaccine development and evaluation.

Learning Objectives

The health professional will be able to:

1. Describe, in general terms, the process to obtain marketing approval for vaccines in Canada.
2. Describe what can be learned about vaccines after they are approved for marketing, via surveillance activities and more formal post marketing studies.
3. Characterize, in broad terms, the key roles and responsibilities for various stakeholders in post-marketing assessment of vaccine safety and effectiveness.

Key Terms:

Effectiveness, efficacy, immunogenic, post marketing surveillance, product monograph.

4. Immunizing Agents

Competency

Applies the knowledge of the components and properties of immunizing agents as needed for safe and effective practice.

Learning Objectives

The health professional will be able to:

1. Classify each immunizing agent used in practice as live attenuated or inactivated/subunit, and compare the major advantages and disadvantages of live versus inactivated /subunit vaccines.
2. Identify key differences in the immune response to purified polysaccharide versus polysaccharide protein conjugate vaccines.
3. Describe live attenuated, inactivated and subunit immunizing agents to an audience with minimal or no science knowledge.
4. Describe, in general terms, the purpose, action and potential concerns of each of the following components that may be present in a given immunizing agent: adjuvant, preservative, additives
5. Locate and utilize current information resources on the types and content of immunizing agents used in practice.
6. Locate and utilize current information resources on addressing public concerns regarding immunizing agent components.

Key Terms:

Passive immunizing agent, active immunizing agent, additive, adjuvant, combination vaccine, inactivated vaccine, live attenuated vaccine, polysaccharide, preservative, protein conjugate, purified protein, subunit vaccine, toxoid.

5. Vaccine Immune Response

Competency

Explains how vaccines work using basic knowledge of the immune system.

Learning Objectives

The health professional will be able to:

1. Differentiate between the primary and memory immune response to a vaccine.
2. Explain why some vaccines induce a memory response while others do not.
3. Name some host and vaccine-related factors that affect the immune response to vaccines.
4. Respond to the concern that giving too many vaccines will overload the immune system.
5. Discuss the pros and cons of immunity gained through immunization as opposed to wild type infection.
6. Identify the key differences in the immune response to purified polysaccharide versus polysaccharide protein conjugate vaccines.

Key Terms:

Active immunity, antibody, antigen, B-lymphocyte (B-cell), booster, cell-mediated immunity (CMI), humoral immunity, memory response, passive, immunity, primary immune response, protective levels, T-lymphocyte (T-cell).

6. Immunization Schedules

Competency

Demonstrate an understanding of immunization schedules.

Learning Objectives

The health professional will be able to:

1. Describe the guidelines for immunization schedules.
2. Name the B.C. resources that are used to guide immunization schedules and decision making
3. Locate the current B.C. immunization schedules
4. Explain how the guidelines for immunization schedules accommodates factors that affect the immune response to vaccines
5. Illustrate in tabular format the vaccine, age, dose, route, site, contraindication, precaution, side effects for each vaccine.
6. Describe the unique immunization needs of individuals who are off course for recommended immunizations.

Key Terms:

BCCDC Immunization Program

7. Populations Requiring Special Considerations

Competency

Recognizes and responds to the unique immunization needs of certain population groups.

Learning Objectives

The health professional will be able to:

1. Describe the unique immunization needs of certain populations including:
 - Immunocompromised individuals
 - Pregnant and breastfeeding women
 - Occupational risk groups
 - Individuals new to Canada
2. Appropriately refer to expert professional resources when required to address the immunization needs of certain populations.

Key Terms:

Special populations, occupational risk groups, new Canadians, immunocompromised, and pregnancy.

8. Storage and Handling of Immunizing Agents

Competency

Implements provincial guidelines when storing, handling or transporting immunizing agents.

Learning Objectives

The health professional will be able to:

1. State where to access the most recent provincial guidelines dealing with immunizing agent storage, handling and transportation.
2. Describe the provincial guideline requirements for immunizing agent storage, handling and transportation.
3. Explain the importance of maintaining the cold chain.
4. Outline the key steps for maintaining the cold chain in the practice setting.
5. Explain actions taken to report and manage cold chain incidents that compromise immunizing agent integrity.

Key Terms:

Min-max thermometers, stock rotation, cold chain.

9. Administration of Immunizing Agents

Competency

Prepares and administers immunizing agents correctly.

Learning Objectives

The health professional will be able to:

1. Name the resources that are used to guide immunization administration process and decision making.
2. Describe actions taken to increase safety in immunization clinics related to the provider, the recipient and the environment.
3. Ensure the 7 “Rights” of immunization: right drug, right client, right dose, right time, right route, right reason and right documentation.
4. Describe the steps involved in immunizing agent preparation, including reconstitution if appropriate, administration and disposal.
5. Choose the correct needle length and gauge for the age and size of the client.
6. Describe the age appropriate injection sites and proper client positioning used for immunization.
7. Describe techniques to reduce the pain associated with immunization.
8. Demonstrate the appropriate technique for immunization.

Key Terms:

Canadian Immunization Guide (CIG), contraindications, expiry date, injection error, injection site, needle length and gauge, needle stick injury, precautions, reconstitution, route of administration (intramuscular, subcutaneous, intradermal).

10. Reactions Following Immunization

Competency

Anticipates, identifies and manages reactions following immunization.

Learning Objectives

The health professional will be able to:

1. Use reliable evidence-based resources to list the frequencies of the common, uncommon and rare adverse events associated with immunizing agents.
2. Inform recipients and/or their caregivers on what to expect and what to do regarding adverse events that could follow immunizations.
3. Describe the step-by-step response to anaphylaxis as appropriate to the immunization setting.
4. Locate appropriate forms and understand the process for submitting a report on an adverse event following immunization
5. Distinguish between reporting an adverse event following immunization and proving that immunization caused an adverse event.

Key Terms:

Adverse Event Following Immunization, anaphylaxis, causality, local reaction

11. Documentation

Competency

Documents information relevant to each immunization encounter in accordance with provincial guidelines for immunization practices and jurisdictional health information processes.

Learning Objectives

The health professional will be able to:

1. Describe the role and importance of immunization records.
2. Identify the information to be documented on an immunization record
3. Record the reason for and planned follow-up action when a scheduled immunization is not given.

Key Terms:

Immunization Record (include both take-home and professional chart), lot number, and other minimal terms for recording.

12. Legal and Ethical Aspects of Immunization

Competency

Acts in accordance with legal and high ethical standards.

Learning Objectives

The health professional will be able to:

1. Discuss the implications of the individual's right, confidentiality, privacy, informed consent and informed refusal.
2. Describe the legislations that impact immunization practice in BC.
3. Identify their professional scope of practice as it relates to immunization.
4. Discuss the issues arising from mandatory versus voluntary immunization.

Key Terms:

Informed consent, legislation, mandatory immunization, voluntary immunization.

13. Population Health

Competency

Applies relevant principles of population health for improving immunization rates.

Learning Objectives

The health professional will be able to:

1. Use specific examples to show how immunization is a population-based health strategy.
2. Explain the concept of herd immunity (also called community immunity) in non scientific terms.
3. Explain, using examples, why vaccine-preventable diseases return when immunization coverage decreases.
4. Explain how immunization registries can benefit not only individuals but also populations.
5. Present the case for the importance of having a highly immunized healthcare work force.
6. Identify barriers (economic, educational and social factors) to immunization uptake.

Key Terms:

Community immunity, coverage, endemic, epidemic, epidemiology, epidemiological triangle, herd immunity, incidence, morbidity, mortality, pandemic.

14. Communication: Part 1 - Principles

Competency

Communicates effectively about immunizations.

Learning Objectives

The health professional will be able to:

1. Explain the importance of risk perception for immunization decision making.
2. Respond appropriately following an assessment of client knowledge, attitudes, and beliefs regarding immunization.
3. Deliver clear, concise messages about the risks of vaccine-preventable diseases and the benefits/risks of vaccines.
4. Provide guidance to clients so they can correctly identify credible sources of information on immunization and vaccines.

Key Terms:

Credible sources, informed decision making, risk communication, risk perception.

15. Communication: Part 2 - Immunization Issues

Competency

Addresses immunization issues using an evidenced based approach.

Learning Objectives

The health professional will be able to:

1. Address misperceptions regarding immunizing agents using evidence based approach.
2. Locate evidenced based sources of information on current issues relating to immunization.
3. Use scientific knowledge to develop clear, concise key messages regarding true immunization benefits and risks.

16. The Canadian Immunization System

Competency

Demonstrate an understanding of the immunization system in Canada and its impact on his/her own practice.

Learning Objectives

The health professional will be able to:

1. Describe how the National Immunization Strategy (NIS) is relevant to practice.
2. Distinguish between federal and provincial/territorial responsibilities as related to immunization programs in Canada.
3. Explain the reasons for the variable immunization schedules among the provinces and territories.
4. List who can administer immunizations in British Columbia.