



Infection Prevention and Control Standards

December 2022

Effective March 31, 2023

Approved by the College of Registered Nurses of Alberta (CRNA) Council, December 2022, effective March 31, 2023.

The College and Association of Registered Nurses of Alberta (CARNA) is operating as the College of Registered Nurses of Alberta (CRNA).

Use of this document is permitted for the purposes of education, research, private study or reference. Ensure you are using the current version of this document by visiting our website.

College of Registered Nurses of Alberta
11120 – 178 Street
Edmonton, AB T5S 1P2

Phone: 780.451.0043 (in Edmonton) or 1.800.252.9392 (Canada-wide)

Fax: 780.452.3276

Email: practice@nurses.ab.ca

Website: nurses.ab.ca



Table of Contents

PURPOSE.....	4
CHAIN OF TRANSMISSION.....	5
STANDARDS FOR INFECTION PREVENTION AND CONTROL.....	7
STANDARD 1: RESPONSIBILITY AND ACCOUNTABILITY.....	7
STANDARD 2: KNOWLEDGE-BASED PRACTICE.....	8
STANDARD 3: ETHICAL PRACTICE.....	9
STANDARD 4: SERVICE TO THE PUBLIC.....	10
GLOSSARY.....	11
REFERENCES.....	13



Purpose

The *Infection Prevention and Control Standards* are developed and approved as outlined in Section 133 of the *Health Professions Act* (2000). The purpose of this document is to outline the minimum expectations for **REGISTRANTS**¹ to protect the health and safety of their **CLIENTS**, themselves, staff, and the public by preventing and reducing the transmission of infection.

Infection prevention and control (IP&C) interventions and activities that are implemented, minimize and eliminate the potential spread of infection in the practice environment. In health-care settings, the immune status of a client may be reduced by the disease, injury, or illness that brought them to that setting. When a susceptible client develops a **HEALTHCARE-ASSOCIATED INFECTION** (HAI) there may be increased length of stay, and increased risk of morbidity and mortality (Canadian Nosocomial Infection Surveillance Program, 2020).

These standards apply at all times to all registrants regardless of role or setting and are specific to registrants engaged in IP&C practices. The standards are grounded in the foundational *Practice Standards for Registrants* (College of Registered Nurses of Alberta [CRNA], 2023) and the Canadian Nurses Association (CNA) *Code of Ethics for Registered Nurses* (2017). The directions, concepts, and principles in this document align with other CRNA documents:

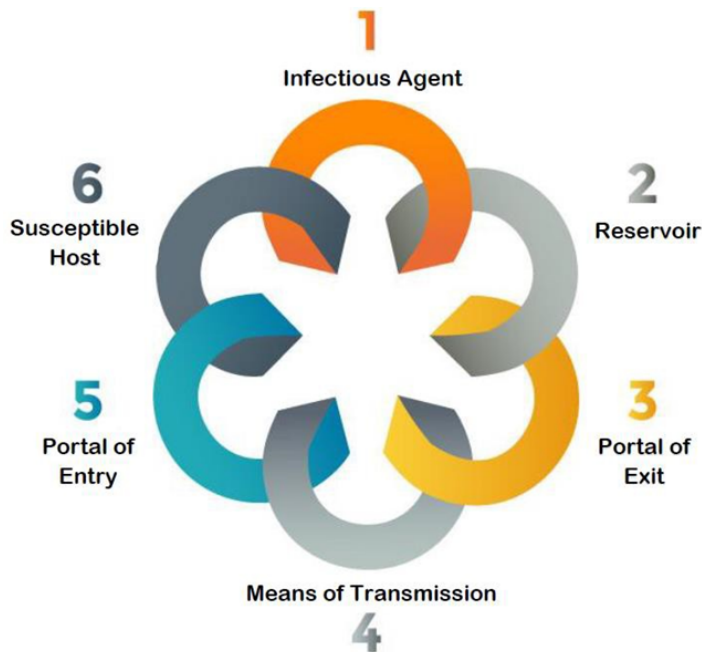
- *Documentation Standards* (2022)
- *Guidelines for Hand Hygiene* (Alberta College of Pharmacy [ACP], College of Physicians and Surgeons [CPSA], & CRNA, 2016)
- *Guidelines for Medication and Vaccine Injection Safety* (ACP, CPSA, & CRNA, 2018)

New and evolving infectious diseases, new research leading to **BEST PRACTICES**, and advancing technology are constantly changing the practice of IP&C. The key purpose of any IP&C program is to break the chain of transmission to protect clients, staff, and the public from infection.

¹ Words or phrases in **BOLD CAPITALS** upon first mention are defined in the glossary.

Chain of Transmission

The chain of transmission is a concept used to understand the infection process. It has six unique links: infectious agent, reservoir, portal of exit, means of transmission, portal of entry, and susceptible host. Each link represents a condition or interrelationship that must be present for the transmission of microorganisms. Knowledge and understanding of the conditions and interrelationships of the chain of infection are important to apply IP&C best practices that can help break one or more links in the chain of transmission.



Links in the chain of transmission (Public Health Agency of Canada, 2016):

- 1.** Infectious Agent: the microorganism (e.g., bacteria, virus, or fungi). Ways to break this link are the rapid, accurate identification of the microorganism followed by taking steps to interrupt its ability to cause an infection.
- 2.** Reservoir (source): a host that allows the microorganism to live, and possibly grow and multiply. People, animals, the environment, and equipment can all be reservoirs for microorganisms. Ways to break this link include cleaning, disinfecting or sterilizing **MEDICAL DEVICES** and the client care environment.
- 3.** Portal of Exit: the way in which the microorganism moves or escapes from the reservoir. Some examples include blood, respiratory tract, skin and mucous membranes, genitourinary tract, gastrointestinal tract, and the transplacental route from mother to unborn infant. Ways to break this link include wearing personal protective equipment (PPE), hand hygiene, respiratory etiquette, and safe waste disposal.

4. Means of Transmission: transmission can occur through multiple routes and vary with the microorganisms involved. Routes of transmission could include the following:
- Direct contact: direct physical contact with a body fluid such as from an infected wound.
 - Indirect contact: the fluids from a cough or sneeze that can land on surfaces that are then touched by other people.
 - Droplet: the droplets that contain microorganisms are propelled a short distance through the air and are deposited on the mucous membranes of another person.
 - Airborne: the inhalation of aerosols that contain microorganisms.

Ways to break this link include **ROUTINE PRACTICES** and **ADDITIONAL PRECAUTIONS**, proper food handling, appropriate airflow control, hand hygiene, cleaning the environment, and medical device cleaning, disinfection or sterilization.

5. Portal of Entry: the path for the microorganism to enter a new host. Some paths are the gastrointestinal tract, respiratory tract, mucous membranes, and broken skin. Ways to break this link include using **ASEPTIC TECHNIQUE** when providing wound and catheter care.
6. Susceptible Host: a person susceptible to the microorganism such as those who are immunocompromised, diabetic, post-operative, or who have extensive burns or cardiopulmonary disease etc. Ways to break this link include vaccination, the recognition of high-risk clients, treatment of underlying disease and maintaining a healthy lifestyle e.g., nutrition and exercise.

Standards for Infection Prevention and Control

These standards outline the minimum expectations for registrants providing care which incorporates IP&C best practices. The criteria describe how registrants must meet each standard and are not listed in order of importance.

Standard 1: Responsibility and Accountability

Registrants are responsible and accountable for implementing infection prevention and control interventions and activities.

Criteria

The registrant must

- 1.1 practice in accordance with current legislation and regulation (for example, the *Public Health Act* [2000]) and standards related to IP&C;
- 1.2 practice in accordance with IP&C **ADMINISTRATIVE CONTROLS**;
- 1.3 identify the need for IP&C administrative controls and question if they do not support best practice;
- 1.4 perform IP&C interventions and activities competently;
- 1.5 intervene and provide appropriate care when a client has been exposed to a microorganism that puts them at higher risk for infection;
- 1.6 report, using required methods, when IP&C administrative controls, standards, or legislation have not been followed;
- 1.7 report communicable diseases according to legislative and administrative control requirements;
- 1.8 maintain sterility of sterile objects and areas;
- 1.9 **REPROCESS** medical devices according to standards (for example, the *Reusable and Single-Use Medical Device Standards* [Alberta Health, 2019]), administrative controls, and manufacturers' instructions;
- 1.10 use only those devices which have had the required level of reprocessing;
- 1.11 follow standards (for example, *Reusable and Single-Use Medical Device Standards* [Alberta Health, 2019]) and employer requirements for single-use medical devices;

- 1.12 take action to promote the implementation of IP&C best practices;
- 1.13 be aware of their personal immunization status and how it could impact risk related to the transmission of infection; and
- 1.14 recognize if they are ill or unwell and take action to reduce transmission of infection to others, including consultation with a health-care professional as appropriate.

Standard 2: Knowledge-based Practice

Registrants consistently apply evidence-informed measures and best practices that prevent and control the transmission of microorganisms.

Criteria

The registrant must

- 2.1 be knowledgeable about the principles of IP&C, and the microbiology and pathology of microorganisms that cause infection;
- 2.2 understand the chain of transmission and their role in breaking that chain;
- 2.3 consistently use routine practices:
 - a) perform a **POINT OF CARE RISK ASSESSMENT**,
 - b) practice the **FOUR MOMENTS OF HAND HYGIENE** as outlined in the *Guidelines for Hand Hygiene* (ACP, CPSA, & CRNA, 2016),
 - c) use appropriate PPE according to administrative controls and guidelines (e.g., gloves, gown, mask/shield/glasses/goggles),
 - d) use aseptic technique for injections and intravascular and other invasive procedures,
 - e) implement environmental infection control strategies to reduce the transmission of microorganisms (e.g., safe use and disposal of sharps, cleaning protocols for environment and equipment, ventilation, etc.),
 - f) implement administrative controls such as IP&C training and required immunizations, and
 - g) follow standards, administrative controls, and manufacturers' guidelines related to safe use, cleaning, disinfection, and sterilization of medical devices;

- 2.4 assess and implement additional precautions if required;
- 2.5 assess the client's immunization status;
- 2.6 assess the client's knowledge of immunization and provide education as needed;
- 2.7 support research of IP&C activities;
- 2.8 assess the client's and family's understanding of IP&C best practices and provide appropriate education;
- 2.9 document care and education provided;
- 2.10 complete the necessary reporting forms and contribute to data collection as required for IP&C; and
- 2.11 engage in continuing competence, and mentor others in their continuing competence, related to IP&C.

Standard 3: Ethical Practice

Registrants have a responsibility to ensure ethical and safe client care by reducing the transmission of infection.

Criteria

The registrant must

- 3.1 reduce the risk of infection by following IP&C best practices;
- 3.2 obtain informed consent for any IP&C interventions;
- 3.3 maintain the confidentiality of the client's health information related to their immune and infectious status;
- 3.4 provide client care with dignity and maintain a therapeutic relationship, especially for clients on additional precautions;
- 3.5 advocate for an environment, equipment and safety devices that reduce the risk of transmission of microorganisms;
- 3.6 respect the client's right to refuse care (e.g., immunization) following informed consent and provision of education; and
- 3.7 advocate for an IP&C program in their practice setting if not already established.

Standard 4: Service to the Public

Registrants have a duty to provide safe, competent, and ethical nursing care in the assessment, prevention, treatment, and control of infection.

Criteria

The registrant must

- 4.1 collaborate with the client and family and the health-care team in developing and explaining the care plan;
- 4.2 participate in quality improvement and innovation related to IP&C;
- 4.3 identify hazards that increase the risk of transmission to clients, staff, and the public;
- 4.4 provide care, education, and guidance to the client, staff, and public who have been exposed to microorganisms; and
- 4.5 act as an antimicrobial steward and/or participate in an **ANTIMICROBIAL STEWARDSHIP** program.

Glossary

ADDITIONAL PRECAUTIONS – Measures used when routine practices alone may not prevent transmission of an infectious agent (Public Health Agency of Canada, 2016).

ADMINISTRATIVE CONTROLS – “Measures put in place to reduce the risk of infection to staff or to patients (e.g., infection prevention and control policies/ procedures, education/ training)” (Public Health Ontario, 2012).

ANTIMICROBIAL STEWARDSHIP – “An interdisciplinary activity that promotes appropriate selection, dosing, route, and duration of antimicrobial therapy to:

- optimize patient clinical outcomes,
- minimize antibiotic adverse effects/toxicity,
- reduce the selection of certain pathogenic organisms (e.g., *Clostridium difficile*), and
- reduce or stabilize antimicrobial resistance” (Hoang & Saxinger, 2013).

ASEPTIC TECHNIQUE – “The purposeful prevention of transfer of microorganisms from the patient’s body surface to a normally sterile body site or from one person to another by keeping the microbe count to an irreducible minimum” (Public Health Agency of Canada, 2016).

BEST PRACTICES – Evidenced-informed guiding principles leading to the most appropriate courses of action in certain standard practice situations (Potter et al., 2019).

CLIENT(S) – Refers to patients, residents, families, groups, communities, and populations.

FOUR MOMENTS OF HAND HYGIENE – The four moments of hand hygiene include before contact with a patient or patient’s environment, before a clean or aseptic procedure, after exposure to blood and/or body fluids, and after contact with a patient or patient’s environment (ACP, CPSA, & CRNA, 2016).

HEALTHCARE-ASSOCIATED INFECTION (HAI) – Healthcare-associated infections, also known as nosocomial infections, are infections a client acquires in a setting where healthcare is delivered, such as a health-care facility or in a home care arrangement. HAIs are not present or developing in the client at the time they are admitted to the health-care facility or home care program, or when they started treatment (Public Health Agency of Canada, 2013).

MEDICAL DEVICE(S) – “Any instrument, apparatus, appliance, material, or other article, whether used alone or in combination, including the software necessary for its proper application, intended by the manufacturer to be used for a human being for any of the following purposes:

- diagnosis, prevention, monitoring, treatment, or alleviation of disease
- diagnosis, monitoring, treatment or alleviation of, or compensation for, an injury or handicap
- investigation, replacement or modification of the anatomy, or of a physiologic process or control of conception” (Alberta Health, 2019).

POINT OF CARE RISK ASSESSMENT – An individual assessment of each client/patient/resident’s potential risk of transmission of microorganisms. This must be performed by all health-care providers and other staff who come into contact with them. Based on that risk assessment and a risk assessment of the task, one may determine appropriate intervention and interaction strategies (e.g., hand hygiene, waste management, use of PPE and client/patient/resident placement) that will reduce the risk of transmission of microorganisms to and from the individual (Public Health Ontario, 2012).

REGISTRANT(S) – Includes registered nurses (RNs), graduate nurses, certified graduate nurses, nurse practitioners (NPs), graduate nurse practitioners, and RN or NP courtesy registrants on the CRNA registry.

REPROCESS – “The cleaning, disinfection, and/or sterilization of a potentially contaminated medical device so that it is safe and effective for use on a client” (Alberta Health, 2019).

ROUTINE PRACTICES – “A comprehensive set of infection prevention and control measures that have been developed for use in routine care of all patients at all times in all healthcare settings” (Public Health Agency of Canada, 2016).

References

- Alberta College of Pharmacy, College of Physicians and Surgeons, & College of Registered Nurses of Alberta. (2016). *Guidelines for hand hygiene*.
- Alberta College of Pharmacy, College of Physicians and Surgeons, & College of Registered Nurses of Alberta. (2018). *Guidelines for medication and vaccine injection safety*.
- Alberta Health. (2019). *Reusable and single-use medical devices standards: Standards for the reprocessing of reusable medical devices and for the use of single-use medical devices in all health care facilities and settings*. <https://open.alberta.ca/publications/9781460145470>
- Astle, B. J., Duggleby, W., Potter, P. A., & Onyskiw, J. E. (2019). *Canadian fundamentals of nursing* (6th ed.). Elsevier Canada.
- Canadian Nosocomial Infection Surveillance Program. (2020). *Healthcare-associated infections and antimicrobial resistance in Canadian acute care hospitals, 2014-2018*. Canadian Communicable Disease Report, 46(5), 99-112. <https://doi.org/10.14745/ccdr.v46i05a01>
- College of Registered Nurses of Alberta. (2022). *Documentation standards*.
- College of Registered Nurses of Alberta. (2023). *Practice standards for registrants*.
- Health Professions Act, RSA 2000, c H-7*.
- Hoang, H., & Saxinger, L. (2013). *Antimicrobial stewardship manual*. Alberta Health Services & Covenant Health. <https://www.albertahealthservices.ca/assets/info/asm/if-asm-manual.pdf>
- Public Health Act, RSA 2000, c P-37*.
- Public Health Agency of Canada. (2016). *Routine practices and additional precautions for preventing the transmission of infection in healthcare settings*. <https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/diseases-conditions/routine-practices-precautions-healthcare-associated-infections/routine-practices-precautions-healthcare-associated-infections-2016-FINAL-eng.pdf>
- Public Health Agency of Canada. (2013). *The chief public health officer's report on the state of public health in Canada 2013: Infectious disease – the never-ending threat*. <https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/cphorsphc-respcacsp/2013/assets/pdf/2013-eng.pdf>
- Public Health Ontario. (2012). *Routine practices and additional precautions in all health care settings* (3rd ed.). https://www.publichealthontario.ca/-/media/Documents/B/2012/bp-rpap-healthcare-settings.pdf?sc_lang=en