

Infection Prevention and Control Core Competencies for Healthcare Providers:

Updated Consensus Document June 2022



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Infection Prevention and Control Core Competencies for Health Care Providers

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Background

The first Canada-wide consensus-based set of healthcare provider (HCP) core competencies were published in 2006.¹ These competencies were identified in response to the 2004 SARS outbreak and the significant concerns raised regarding the need for more comprehensive HCP infection prevention and control (IPAC) education. In 2016, the core competencies were reviewed and updated to reflect changes that had occurred over the years.² The 2016 updates reflected the evolution of the definition of HCPs and team responsibilities. This resulted in expanding the applicability of the core competencies to all HCPs, both regulated and unregulated across all sectors. This included HCPs in hospitals, continuing care, community, pre-hospital, and public health. Since 2016, both healthcare and IPAC have continued to evolve in scope and complexity and have recently been significantly impacted by the emergence of the COVID-19 pandemic. The impact of this pandemic once again underscores the importance and relevance for HCPs to maintain IPAC competencies specific to their role within a variety of healthcare settings.

Purpose

The purpose of the 2022 review was to update the 2016 core competencies to ensure they reflect current knowledge and skills that all HCPs need to possess to protect themselves and patients. In this document the term patient refers to all persons who receive or have requested healthcare or services and incorporates the terms 'client' or 'resident'.

The updates were informed by the COVID-19 experience and the advancement of IPAC practice.³ The competencies are applicable to all HCPs, across all sectors (e.g., acute care, continuing care/long-term care, prehospital care, and community care) and include HCPs who are involved in direct patient care as well as those who are not. Because of the variety of HCP roles and responsibilities, not all the competencies will apply to all HCPs in the same way or to the same degree. As such, the term Point of Care Risk Assessment (PCRA) was broadened to Risk Assessment (RA) to include areas in healthcare that are not just at the point care. The applicability of a particular competency will be dependent on the HCP role and workplace setting.

The 2016 competencies were reviewed, supplemented with new competencies, and reorganized into three groups: foundational, applied, and supporting competencies. The *foundational competencies* were identified as essential for all HCPs. While still important for all HCPs, the *applied competencies* are those competencies that were deemed to be role dependent and thus may apply to different extents and degrees. The *supporting competencies* were defined as wider ranging competencies that are important for facilitating all HCPs' capacity and capability to develop their IPAC competencies and translate them into their work practices. The competencies under each of these three categories were further broken down into knowledge and skill statements. This not only emphasizes the acquisition of knowledge but the ability to demonstrate this knowledge. In total there are 18 competencies (eleven foundational, four applied and three supporting). A new set of competencies related to diversity, equity and inclusion were added in this update.

The recommendation is that these core competencies be integrated into institutional and organizational healthcare programs across Canada to inform and guide education and workplace training of both current and future HCPs. Each healthcare specialty, department or area can assess the depth and scope of the application of each competency to their staff. The methods and responsibility for the integration and evaluation of the competencies are not addressed in this document. This is best determined at the local institutional or organizational level.

Process

In 2021, IPAC Canada convened a working group to review the 2016 core competencies for HCPs in Canada. The working group, consisting of members of IPAC Canada with a wide range of experience across the different healthcare sectors met regularly over a period of 6 months to review the existing competencies, develop new competencies, collate the feedback on the revised competencies from reviewers and make further revisions as necessary based on the feedback received. The 22 reviewers were also members of IPAC Canada with a range of experience, representing various healthcare sectors and specialties including governments across Canada. The finalized document was sent to the IPAC Canada Board for review and approval.

Foundational Competencies

There are several IPAC principles and practices that are essential in stopping the spread of infectious agents, preventing infections, and promoting safe environments that are applicable to every role within the healthcare system. These include principles and practices related to the Chain of Infection, Routine Practices and maintaining a Healthy Workplace.

Chain of Infection

The HCP has knowledge of:

- Each component in the chain of infection (Infectious Agent, Reservoir, Portal of Exit, Mode of Transmission, Portal of Entry, Susceptible Host).
- How application of IPAC principles break the chain of infection and the rationale why.

The HCP is able to:

- Apply knowledge and practices relevant to their work setting and practice that break the chain of infection.

Routine Practices

The HCP has knowledge of:

- The basic components of Routine Practices and how they are related to the HCP's role and workplace setting.
- How Routine Practices are key to preventing the transmission of microorganisms among HCPs, physicians, patients¹ and visitors.
- How Source Control is achieved through administrative and engineering measures and is an effective way to prevent the transmission of infectious agents in all healthcare settings.

The HCP is able to:

- Demonstrate proper application of all elements of Routine Practices relevant to their work setting and practice.
- Apply Routine Practices for every patient encounter in all healthcare settings or as applicable in their area of work.
- Role model IPAC principles and practice to other HCPs, physicians, patients, and visitors.

Risk Assessment and Point of Care Risk Assessment²

The HCP has knowledge of:

- RA and PCRA as a component of Routine Practices.
- The proper and consistent use of a RA or PCRA and the correct application of Routine Practices and Additional Precautions.
- The rationale for performing a RA or PCRA; that is the risk to self in relation to the following: the patient, the task, and the environment/setting.

The HCP is able to:

- Demonstrate the use of a RA or PCRA.
- Assess the need for elements of Routine Practices and Additional Precautions based on a RA or PCRA.
- Demonstrate the proper application of Routine Practices following a RA or PCRA.
- Apply a PCRA to every patient encounter regardless of the healthcare setting (role dependent).
- Explain own role in IPAC (e.g., champions hand hygiene and correct use of PPE).

Hand Hygiene

The HCP has knowledge of:

- Hand hygiene as a component of Routine Practices.
- Local hand hygiene policies and procedures including impediments such as the use of artificial nails, chipped nail polish, and jewelry.
- The potential impact of transient hand flora on the risk for healthcare-associated infections (HAI).
- The importance of hand hygiene as the best method to prevent the transmission of infection.
- The 4 Moments of Hand Hygiene.
- The two methods for hand hygiene (soap and water and alcohol-based hand rub (ABHR)) and when each method should be used.
- The hand hygiene compliance rate(s) for their unit(s) or area(s) and where to find them.
- The importance of maintaining healthy hands.

The HCP is able to:

- Consistently demonstrate proper hand hygiene technique with soap and water and ABHR in their day- to-day work activities.
- Comply with local hand hygiene policies and procedures.
- Explain to patients/others how and when to perform hand hygiene.
- Assist patients/others to properly perform hand hygiene.
- Articulate when each method, ABHR and soap and water should be used.
- Ensure access to ABHR at the point of care.
- Maintain the health of their hands and avoid impediments to hand hygiene such as the use of artificial nails, chipped nail polish, hand and or wrist jewelry, and limiting the wearing of jewelry to a plain band.

Personal Protective Equipment (PPE)

The HCP has knowledge of:

- PPE as a component of Routine Practices and Additional Precautions.
- The principles, rationale, indications, selection, donning and doffing techniques for various types of PPE.
- The types of PPE available for use (gowns, gloves, masks/respirators, and eye protection).
- When a respirator (N95 or equivalent) is required, and that fit testing and fit checking needs to be performed.

The HCP is able to:

- Demonstrate how to properly and consistently select, don, doff and dispose of PPE.
 - Select the appropriate PPE based on a RA or PCRA.
 - Perform a seal check (fit check) each time a fit tested respirator is used.
 - Assist patients/others in the proper use of PPE.
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Environmental Cleaning and Disinfection

The HCP has knowledge of:

- The impact of environmental contamination on HAI.
- The high-touch surfaces within a care environment or work area.
- The basic principles and processes for cleaning and disinfection (e.g., clean to dirty) and the importance of decluttering surfaces and areas.
- Appropriate products for environmental cleaning and disinfection.

The HCP is able to:

- Ensure the high-touch surfaces are cleaned and disinfected routinely in their work area and between uses if shared equipment.
 - Select approved products for environmental cleaning and disinfection.
 - Wear recommended PPE when cleaning and disinfecting environmental surfaces.
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Handling of Waste and Linens

The HCP has knowledge of:

- The different waste categories (general, biomedical, pharmaceutical and biohazardous).
- How each of these types of waste are managed according to the type and local regulations.
- Safe management, storage, transport and handling of linens.

The HCP is able to:

- Demonstrate safe disposal of general, biomedical, pharmaceutical or biohazardous wastes into appropriate receptacles and waste stream.
 - Demonstrate safe disposal of items contaminated with blood, body fluids, secretions and excretions as per local regulations.
 - Safely manage clean and soiled linens.
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Vaccination (Immunization)³

The HCP has knowledge of:

- The importance of HCP vaccination.
- The role of vaccines in public health and the prevention of outbreaks among susceptible individuals.
- Where to access reliable information about vaccination and vaccines.
- Their personal vaccination status.

The HCP is able to:

- Receive all recommended vaccinations, including seasonal vaccination, as per agency and public health requirements.
 - Maintain records of their own, including:
 - Vaccination history, ensuring all vaccines are up to date.
 - Immune status of certain diseases (e.g., measles, mumps).
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Blood & Body Fluids Exposure and Sharps Management

The HCP has knowledge of:

- The risks associated with unprotected occupational exposures to blood and body fluids/sharps injuries.
- How to prevent and initially manage occupational exposures to blood and body fluids/sharps injuries.
- The requirements for prompt action, assessment, and follow-up for any occupational exposure to blood and body fluids/sharps injuries.
- The first aid and follow-up necessary for the management of occupational exposures to blood and body fluids exposures and sharps injuries.

The HCP is able to:

- Use safe practices to minimize the risk for exposure to blood and body fluids.
 - Demonstrate safe disposal of sharps and items contaminated with blood and body fluids.
 - Demonstrate safe management of reusable items contaminated with blood and body fluids.
 - Demonstrate safe sharps management including the use of safety engineered devices.
 - Follow local protocols for blood and body fluid exposures.
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Respiratory Hygiene

The HCP has knowledge of:

- The importance of practicing respiratory hygiene to prevent the spread of respiratory pathogens.

The HCP is able to:

- Demonstrate the elements of respiratory hygiene.
 - Teach patients/others how and when to use respiratory hygiene practices.
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Fitness for Work

The HCP has knowledge of:

- The risk a staff member with an infectious condition can pose to other HCPs, patients, and visitors.
- The signs and symptoms of infectious conditions (i.e., respiratory and gastrointestinal illnesses).
- Illness and symptoms that require reporting and local process to report.

The HCP is able to:

- Perform a self-assessment for symptoms of infectious conditions prior to coming to work and stay home when ill.
 - Follow local processes for reporting.
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Applied Competencies

The following competencies may be role or sector specific or may only be required as specific issues arise (e.g., construction or renovation of an area). All persons working in healthcare should have knowledge and skills in these areas to a level indicated by their role and setting.

Microbiological Concepts

The HCP has knowledge of:

- Basic microbiological concepts related to the chain of infection.
- Infectious agents (microorganisms) including bacteria, viruses, fungi, protozoa, and parasites.
- The general characteristics of microorganisms that can influence their ease of transmission including the ability to:
 - Cause disease,
 - Survive in the environment,
 - Breach the body's natural defenses,
 - Develop resistance to antimicrobials and disinfectants.
- The concepts of resident microorganisms (live on or in a person) and transient microorganisms (move between persons).
- Antimicrobial Resistant Organisms (AROs) and can give examples (e.g., Methicillin Resistant Staphylococcus aureus).
- AROs and their importance in relation to HAIs.
- Microorganisms that can lead to outbreaks, epidemics, and pandemics.

The HCP is able to:

- Apply microbiology knowledge to inform the use of Routine Practices and Additional Precautions.
- Seek additional resources to inform practice decisions.
- If relevant to their healthcare role:
 - Read and interpret microbiology results as required,
 - Implement Additional Precautions based on PCRA,
 - Implement local protocols for ARO identification and management.

Surveillance and Outbreaks

The HCP has knowledge of:

- Surveillance for the purposes of identifying infectious agents and identifying clusters, outbreaks, new or emerging infectious threats and for quality improvement.
- Epidemiologic principles of person, place, and time relative to infectious diseases distribution.
- Local outbreak protocols and practices used to manage outbreaks and unusual clusters of microorganisms.
- The potential importance of relevant travel history for the identification and control of outbreaks or emerging infectious threats.
- How construction, renovation, and maintenance in healthcare settings poses an infectious risk to the patients and staff.

The HCP is able to:

- Identify the HAI rates for their unit(s)/area(s) as applicable.
- Recognize indicators of infection and report unusual disease occurrences or clusters and disease outbreaks.
- Access outbreak resources and following local protocols and policies.
- Apply practices in local outbreak protocols for the management of outbreaks and unusual clusters of microorganisms.
- Notify an Infection Control Professional (or designate) when construction, renovation and maintenance is taking place in a healthcare related area and they have concerns about these activities.

Additional Precautions

The HCP has knowledge of:

- The different types and combinations of Additional Precautions (i.e., Contact, Droplet and/or Airborne)
- Additional Precautions are:
 - Based on a PCRA.
 - Based on the presence of symptoms suggestive of a communicable disease,
 - Based on the mode of transmission of an infectious agent,
 - Used in addition to Routine Practices,
 - Used to protect staff and patients by interrupting the transmission of suspected or identified infectious agents (including novel pathogens).
- The different routes of transmission of microorganisms which determines the type of precaution category required in a particular healthcare setting.
- The different requirements of each type of Additional Precautions (type of PPE, accommodation, signage, environmental cleaning, and disinfection).

The HCP is able to:

- Implement appropriate Additional Precautions based on the PCRA and the mode of transmission of the known or suspected infectious agent (Contact, Airborne, and/or Droplet).
- Consult with an Infection Prevention and Control professional (or designate) with any questions regarding Additional Precautions.
- Follow the different requirements and local policies for each type of Additional Precautions.

Management of Healthcare Supplies and Equipment⁴

The HCP has knowledge of:

- The difference between cleaning, disinfecting, and sterilizing.
- The difference between critical, semi-critical and non-critical healthcare equipment and the type of reprocessing required for each.
- Equipment requiring reprocessing as per manufacturer's instructions and organizational policies and procedures.
- The concept that cleaning must be completed prior to disinfecting or sterilizing.
- The proper storage and management of clean and sterile medical supplies/ healthcare equipment (e.g., separation of clean and dirty).

- Local process for reporting breaches in cleaning, disinfection, and sterilization.
- The difference between single-use, single-patient use and reusable medical devices.
- Shared patient equipment that must be cleaned between uses.

The HCP is able to:

- Apply the appropriate cleaning, disinfecting, and sterilizing processes to healthcare equipment as per manufactures' instructions and local processes.
- Store healthcare equipment and supplies appropriately.
- Clean and disinfect shared patient care equipment between uses as appropriate.

Supporting Competencies

The knowledge and skills reflected in these supporting competencies are wider-ranging and not specific to IPAC. They are however important for facilitating healthcare providers' capacity and capability to develop their IPAC competencies and translate them into their work practices.

Training and Accountability

The HCP has knowledge of:

- Local IPAC resources available to support their practice.
- The process and when to contact the local IPAC department, professional (or designate) for their facility or area.
- Their individual responsibilities for IPAC as a member of the healthcare team.

The HCP is able to:

- Complete orientation IPAC training as required by the employer.
- Complete ongoing IPAC education and training as required by the employer.
- Maintain IPAC knowledge and competencies through self-reflection of practice and ongoing learning.
- Seek out IPAC information from reliable sources.
- Access IPAC resources and follow local policies and procedures.
- Seek clarification from the trainer, Infection Control Professional (or designate) when required.
- Role model safe and effective work practices that reduce the risk of infection.
- Demonstrate problem solving and critical thinking when presented with situations that may result in the transmission of infection.

Advocacy

The HCP has knowledge of:

- The importance and relevance of IPAC practice in their role and area of work.

The HCP is able to:

- Role model IPAC principles and participate in fostering a culture of active IPAC practices within their HCP role and healthcare team (including patients and visitors).

Diversity, Equity and Inclusion (DEI)

The HCP has knowledge of:

- Diversity, equity, and inclusion (DEI) perspectives in their practice of IPAC.

In the context of their IPAC practice the HCP is able to:

- Utilize IPAC information (e.g., documents/materials) that are accessible, culturally sensitive, and inclusive.
- Commit to continuous learning / improvement in diversity, equity, and inclusion (DEI) competence⁵
- Listen and adapt IPAC approaches to consider all patient and staff populations.
- Effectively communicate, engage others, and direct them to DEI resources.
- Be a role model for inclusive and culturally competent behaviours.
- Act as a voice for perspectives and cultures that are not otherwise represented.
- Encourage dialogue among colleagues on ways to create safer spaces, promotion of civility and inclusive environments for all.
- Commit to continuous learning / improvement in diversity, equity, and inclusion (DEI) competence⁵
- Listen and adapt IPAC approaches to consider all patient and staff populations.
- Effectively communicate, engage others, and direct them to DEI resources.
- Be a role model for inclusive and culturally competent behaviours.
- Act as a voice for perspectives and cultures that are not otherwise represented.
- Encourage dialogue among colleagues on ways to create safer spaces, promotion of civility and inclusive environments for all.

¹ Patients are all persons who receive or have requested healthcare or services and incorporates the terms 'client' or 'resident'.

² Assessment of risk includes both Risk Assessment (RA) and Point of Care Risk Assessment (PCRA). The term risk assessment is intended to be for areas or activities that are not at the point of care.

³ Vaccination is defined as treatment with a vaccine to produce immunity and immunization is defined as the action of making a person immune to infection. In this document both terms are interchangeable.

⁴ Excludes medical device reprocessing undertaken in dedicated MDR departments

⁵ Understands subtle and complex diversity and inclusion issues as they relate specifically to marginalized groups – women, LGBTQ2S+, gender diverse, indigenous, people with disabilities, different languages, older people, geographically remote, racial, ethnic, people in poverty, culture or religious minorities

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