

Infection Prevention and Control Guidelines



The oral healthcare professional has an obligation to their patients to establish and maintain safe practice environments. These Infection Prevention and Control (IPC) Guidelines are a practice resource for dental assistants, denturists, dental technologists, and dental hygienists—collectively known as oral healthcare professionals, or OHCP—in meeting the IPC standards outlined by their respective Colleges. IPC, at its very core, speaks to the mandate of the Colleges—working to ensure that Albertans receive safe and effective services from dental assistants, denturists, dental technologists, and dental hygienists. All sections of this document are applicable to all regulated members in all professions in the areas which are applicable to their practice. The guidelines apply to both clinical and laboratory settings.

The guidelines were developed collaboratively by the College of Alberta Dental Assistants, College of Alberta Denturists, College of Dental Technologists of Alberta, and the Alberta College of Dental Hygienists—collectively known as the Colleges. Many resources were used to develop these guidelines, including documents from Canadian Standards Association, Alberta Health, Alberta Health Services (AHS), Alberta Occupational Health and Safety, and IPC documents from other Colleges and jurisdictions.

OHCPs have an ongoing responsibility for their professional practice and conduct. These guidelines do not exempt an OHCP from their responsibilities defined in their College's Standards of Practice, Practice Standards, Code of Ethics, and other governing legislation. Each OHCP has the ongoing responsibility to ensure the IPC program in their practice is updated to reflect the practice environment and complies with current standards. OHCPs are responsible for developing and implementing the IPC manual in their practice environment and any required updates.

The information contained in this Guidelines document is not intended to exempt employers from existing occupational health and safety (OHS) requirements. Direct OHS questions related to the applicable legislation to the OHS Contact Centre [online](#) or by phone (toll-free 1.866.415.8690; 780.415.8690 [Edmonton]).

Acknowledgements

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Regulatory Colleges have the mandate to govern their regulated members in the public interest. This includes the development and enforcement of standards of practice and guidelines, by which members hold themselves accountable.

Standards of Practice are the minimum standards of behaviour and conduct Colleges expect of their regulated members. The Standards are developed and updated in consultation with regulated members, Albertans, the Minister of Health, and other stakeholders. All Standards of Practice are approved by Council before taking effect. Standards of Practice, enforceable under the Health Professions Act (HPA), may be used in professional conduct proceedings.

Guidelines establish the professionally accepted means by which regulated members may achieve compliance with the Standards of Practice. They are systematically developed statements based on the best evidence and the most current data.

These IPC guidelines are dynamic and are intended to reflect current best practices. They are designed to assist the regulated member by identifying principles, giving instructions, providing information, direction, and a framework for decision making. Alberta dental assistants, denturists, dental technologists, and dental hygienists are each governed by their own independent colleges. Oral healthcare providers use appropriate clinical judgment and follow their respective Standards of Practice, Code of Ethics, and guidelines.

Core Values

The principles of this document speak to the core values of competent practice and safety culture.

Competent Practice. OHCPs¹ possess the knowledge, skills, judgments, attitudes, and abilities to practice their profession safely.

Safety Culture. A safety culture is viewed as an organization's shared perceptions, beliefs, values, and attitudes that combine to create a commitment to safety and an effort to minimize harm (Weaver et al.). In an organization that has created a culture of safety, OHCPs are comfortable talking about errors, near misses, and actual harm. Instead of fearing reprisal, OHCPs understand that the sharing of this information will be used to improve patient safety.

These two concepts are essential in ensuring patient safety and are the lens through which these guidelines were developed. The Colleges recognize that this aspect of practice is constantly evolving; therefore, this document presents best practices at the time of publication and will be amended as new information becomes available.

¹ Throughout this document, dental assistants, denturists, dental technologists, and dental hygienists are collectively known as oral healthcare professionals, or OHCP.

IPC Principles

The following principles serve as a foundation for the OHCP as they provide competent and safe care and services for their patients. These guidelines represent best practice with recognition that OHCPs may employ critical thinking in slowing or stopping the transmission of pathogens.

The numbers are links that go to the section in which the principle applies.

- ▶1. OHCP have the obligation to their patients to establish and maintain practice environments that have IPC policies and procedures in place that are consistent with legal, ethical and professional responsibilities that promote safety and respect.
- ▶2. OHCPs implement IPC measures to prevent the transmission of infectious agents between themselves, patients, and their environments.
- ▶3. OHCPs work collaboratively to create a culture of safety through the practice of specific policies and procedures that need to be implemented, monitored, and evaluated regularly to be effective.
- ▶4. OHCPs participate in a safe practice environment by following workplace policies and protocols to protect patients, themselves, and colleagues from illness and injury.
- ▶5. OHCPs protect patients by using appropriate methods to prevent transmission of infectious agents.
- ▶6. OHCPs apply appropriate techniques to break the chain of infection during clinical care.
- ▶7. OHCPs apply laboratory asepsis to prevent cross-contamination when creating, transporting, and handling laboratory materials.
- ▶8. OHCPs implement the chain of instrument reprocessing using effective reprocessing techniques to provide clean, sterilized instruments for use in patient care.
- ▶9. OHCPs are prepared to adapt their practice to address unforeseen events by following IPC principles and regulatory guidance.

I. THE GUIDELINES

OHCP have the obligation to their patients to establish and maintain practice environments that have IPC policies and procedures in place that are consistent with legal, ethical, and professional responsibilities that promote safety and respect.

Compliance with the Guidelines

As supported by each College's Standards of Practice, regulated members registered with the College of Alberta Dental Assistants, College of Alberta Denturists, College of Dental Technologists, and the Alberta College of Dental Hygienists are obligated to comply with these guidelines. All sections of this document are applicable to all OHCPs in the areas applicable to their practice. These guidelines will be used when determining whether appropriate practice and professional responsibilities have been maintained. Compliance with these requirements is the responsibility of each OHCP regardless of practice environment. Failure to comply may result in conduct proceedings initiated by the respective College.

It is essential that all regulated members understand what is required of them regarding IPC and work to ensure that their practice meets or exceeds the requirements in this document. Their practices also comply with the applicable College's Standards of Practice, Code of Ethics, and applicable legislation including, but not limited to, the *Health Professions Act (HPA)*, *Public Health Act*, *Occupational Health and Safety Act*, and associated enacted regulations and codes. Be mindful that in oral health environments, there is often more than one profession represented.

Ethical and Legal Considerations

Regulated health professionals have an ethical and legal responsibility to cause no harm to their patients. It is imperative that all regulated health professionals provide professional care and services while considering the principles of IPC. Specifically:

- Provide oral healthcare services to all individuals regardless of their health status.
- A regulated member regularly assesses their health, well-being, ability, and capacity to deliver safe, ethical, and competent professional care and services. If the regulated member has concern about their ability, or that of a colleague, to deliver safe, competent, and ethical care and services, they report this to the respective College.
- If a regulated member knows of or has reason to suspect the existence of a nuisance or a threat that may be injurious or dangerous to public health, pursuant to the HPA, the regulated member has the legal obligation to immediately notify the Medical Officer of Health in the appropriate regional health district by the fastest method possible.
- In addition to the IPC information presented in this document, the OHCP has the obligation to ensure that they are in compliance with any additional employer requirements.

II. INFECTION PREVENTION AND CONTROL

OHCPs implement IPC measures to prevent the transmission of infectious agents between themselves, patients, and their environments.

Chain of Infection

The chain of infection consists of six elements: infectious agent, reservoir, portal of exit, mode of transmission, portal of entry, and susceptible host.

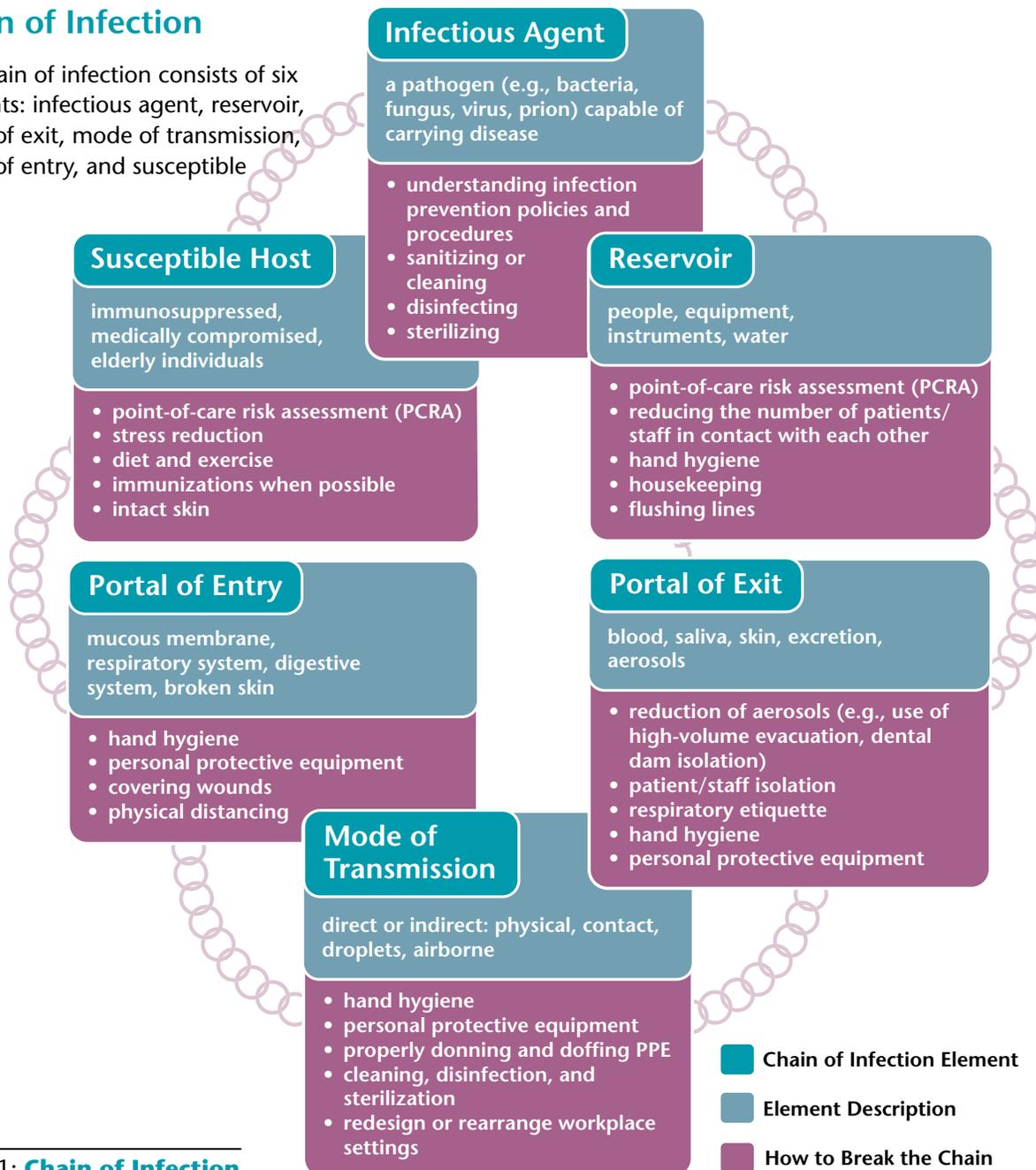


Figure 1: **Chain of Infection**

Modes of Transmission

Understanding modes of transmission helps OHCPs protect patients, colleagues, and themselves.

Important: Not all exposures to infectious agents lead to transmission and a resulting infection. The probability of transmission and infection is dependent on factors such as:

- host susceptibility

- presence of host receptors for the microorganism
- microorganism inoculum size, viability, and virulence
- effectiveness of the hierarchy of controls used by an organization (e.g., engineering controls, administrative controls, and the individual barriers worn by the OHCP)

Five commonly identified modes of transmission are contact, droplet, airborne, common vehicle, and vector-borne.

Table 1: **Modes of Transmission**

Mode of Transmission	Mode Description
Contact transmission	<ul style="list-style-type: none"> • Most common type of transmission • Divided into two categories: <ul style="list-style-type: none"> ○ Direct: physical contact between infected/colonized source and a host ○ Indirect: microorganisms transferred between infected/colonized source and an intermediate object or surface before being transferred to the host
Droplet transmission	<ul style="list-style-type: none"> • Occurs when bacteria or viruses travel a short distance on relatively large droplets that people sneeze, cough, or exhale • Can be generated through blood, saliva, and nasopharyngeal secretions and transferred to susceptible mucosal surfaces
Airborne transmission	<ul style="list-style-type: none"> • Occurs when droplets from the respiratory tract of the infected source are propelled through the air to a host • Pathogens can be carried a long distance in the air and suspended for a long period of time (may travel through ventilation systems)
Common vehicle transmission	<ul style="list-style-type: none"> • Refers to a single contaminated source (such as food, multi-dose vials, intravenous fluids, or equipment) that serves to transmit infection to multiple hosts • Control is by maintenance of appropriate standards in the preparation of food and medications and in decontamination of equipment
Vector-borne transmission	<ul style="list-style-type: none"> • Transmitted by insect vectors • Prevented by appropriate building construction and maintenance, closed or screened windows, and proper housekeeping • Such transmission has rarely, if ever, been reported in Canadian healthcare settings

Routine Practices

Routine practices are based on the premise that all patients potentially carry infectious agents capable of causing disease or infections. This principle forms the foundation for the standard of care for patients in all oral healthcare settings across the continuum. Routine practices are used for every patient interaction.

Routine practices represent a standard of care that protects the OHCP and their patients from pathogens that can spread through blood or any other body fluid, excretion, or secretion. This applies to contact with the following:

- blood

- all other body fluids, secretions, and excretions (except sweat)
- non-intact skin
- mucous membranes

Routine practices include:

- point-of-care risk assessment
- hand hygiene program (including point-of-care, alcohol-based hand rub [ABHR])
- source control (triage, early diagnosis and treatment, respiratory hygiene, spatial separation)
- patient placement, accommodation, and flow
- aseptic technique

- PPE use
- sharps safety and prevention of blood-borne pathogens
- patient care environment management
- patient care environment cleaning
- non-critical patient care equipment cleaning and disinfecting
- waste and linen handling
- patient, family, and visitor education
- visitor management

Point-of-Care Risk Assessment

An OHCP performs the point-of-care risk assessment (PCRA) to determine appropriate precautions to reduce risk of exposure to microorganisms.

The PCRA takes into account:

- the patient
- the patient environment
- the nature of the OHCP's interaction with the patient

A PCRA is applied before and at every interaction with the patient. The OHCP uses their professional judgment, based on the patient presentation and procedures being performed, to evaluate the risk in that circumstance. A PCRA may include:

- When booking and/or confirming appointments
- Upon arrival in the oral healthcare setting
 - screen patients, and patient representatives, as appropriate, for any symptoms of:
 - cough or shortness of breath
 - fever or chills in the last 24 hours
 - nausea or vomiting
 - diagnosed/undiagnosed rash, lesion, or break in skin
 - exposure to or diagnosis of communicable infectious disease (e.g., measles, chicken pox, tuberculosis, hepatitis)
 - history of antimicrobial therapy
 - family history of prion disease (e.g., Creutzfeldt-Jakob disease)
 - recent travel to areas where endemic diseases are present

- In the operatory
 - to assess whether the patient has a communicable disease to determine the risk to the OHCP from exposure to the patient's blood, body fluids, secretions, excretions, and non-intact skin
 - to identify the strategies that will decrease exposure risk throughout the appointment

The PCRA may identify that additional IPC precautions are required to treat the patient.

See [Appendix D](#) for more information.

Hand Hygiene

Hand hygiene removes microorganisms from the hands. Proper hand hygiene is the single most important practice in reducing the transmission of microorganisms and the incidence of infection. This IPC measure promotes the health and safety in all healthcare settings.

Hand hygiene comprises either the physical washing of hands with soap and water, or the use of alcohol-based hand rubs (ABHR) with 60%–90% alcohol content. However, washing with soap and running water is specifically required:

- When the OHCP's hands are soiled (e.g., contaminated with body fluids, powder from gloves).
- After using the washroom, blowing nose, sneezing, coughing, etc.

The OHCP performs hand hygiene:

- Before contact with a patient or patient's environment.
- Before a clean or aseptic procedure, including but not limited to, donning PPE.
- After exposure or risk of exposure to blood and/or other body fluids, including but not limited to, when hands are visibly soiled, following doffing of gloves.
- After contact with a patient or patient's environment, including but not limited to doffing PPE, leaving a patient's environment; and after handling patient care equipment.
- Whenever in doubt.

Maintaining good skin integrity is important in a thorough hand hygiene routine since intact skin is the first line of defense from infection. A good hand hygiene routine includes a moisturizer that is compatible with gloves and the hand hygiene products being used.

Injury prevention strategies include:

- Maintaining good skin condition. Intact skin is the first line of defense as a barrier to disease transmission.
- Using occlusive dressings to protect non-intact skin. Work duties may need to be temporarily modified because dressings, casts, and bandages do not allow adequate hand hygiene.

Barriers to effective hand hygiene include:

- Inappropriate nails harbour microorganisms that can be transmitted to the client. Therefore:
 - Nails are no more than 2 mm beyond the fingertip.
 - Nail polish is freshly applied with no chips.
 - Artificial nails and nail enhancements are not worn.
- Accessories (e.g., rings, watches, bracelets)
 - Have the potential to harbour microorganisms and interfere with the effectiveness of hand hygiene.
 - Rings, if worn, are limited to a single smooth band without projections or mounted stones.
 - Watches and bracelets, if worn, are to be covered by a glove or sleeve and removed for hand hygiene.
- Long sleeves
 - May interfere with or become wet when performing hand hygiene.
 - Push all clothing above the wrist before performing hand hygiene.

To avoid contamination, discard disposable pump dispensers of liquid products when empty. Do not refill.

Respiratory Hygiene

Respiratory hygiene includes:

- cough/sneeze into a tissue and discard tissue
- when a tissue is not available, cough/sneeze into your upper arm or sleeve, avoid using your hands
- turn away from other people when coughing/sneezing
- move away from others who are coughing/sneezing
- diligent hand hygiene
- those who have a severe respiratory illness with fever (e.g., influenza) do not attend the clinic until their symptoms subside

Additional Precautions

The purpose of applying additional precautions when patients present with specific symptoms is to break the

chain of infection. [Figure 1](#) shows examples of how to break the chain of infection. *See also* [Routine Practices](#).

Additional precautions are based on the specific modes of transmission (i.e., contact, droplet, airborne) and are necessary when specific infectious agents (e.g., antibiotic-resistant microorganisms, SARS-CoV-2, measles, mumps) are present.

To determine the proper additional precautions needed in relation to the risk of infection, the OHCP considers the key characteristics of the microorganism, including mode of transmission, reservoirs or source, incubation period, and period of communicability. This is especially relevant for OHCPs treating patients in healthcare institutions, such as a long-term care facility.

- Patients with weakened immune systems and chronic illnesses are more susceptible to methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococcus (VRE), and/or respiratory tract viruses like influenza.
- Patients who may be suspected of having infections transmitted by respiratory droplets are to be rescheduled until the period of communicability is over.
- When immediate care is required, patients who are known or suspected of having an infection that can be transmitted by large respiratory droplets are offered a mask and hand hygiene upon presentation, maintain a minimum two-metre spatial separation from other persons, and be removed from the reception/waiting area and seated in a secluded operatory as soon as possible. In this way, the spread of such microorganisms by droplet transmission can be minimized.

- The use of instruments, such as ultrasonic scalers, handpieces, air polishers, and air/water syringes, create sprays, droplets, or spatter. Every effort is made to reduce the spread by using high-volume suction or a rubber dam. Using these items also reduces the possibility of the patient ingesting or inhaling contaminated material and/or debris.

To better understand when additional precautions are implemented in the oral healthcare setting, refer to [Alberta Health Services IPC Resource Manuals](#).

If the benefit of treatment does not outweigh the risk of transmission, non-urgent treatment is postponed.

III. IPC PROGRAM

OHCPs work collaboratively to create a culture of safety through the practice of specific policies and procedures that need to be implemented, monitored, and evaluated regularly to be effective.

An IPC program requires policies and procedures to be created that are specific to the practice setting and are easily accessible within the practice sites.

Accountability and Responsibility

It is the responsibility of all OHCPs to apply routine practices and IPC protocols in place relevant to their individual practice context. OHCPs maintain different roles within an oral healthcare setting with some being practice owners, and others, employees. These roles come with a subset of responsibilities relating to their level of accountability for IPC requirements. Regardless of employment role, all OHCPs and other staff share the responsibility to uphold and comply with current IPC legislation, standards, and guidelines.

It is the responsibility of the practice owner, whether they are an OHCP or not, to ensure:

- IPC standards are implemented in the oral healthcare setting.
- Policies and procedures are in place within the oral healthcare setting that speak to IPC hazards, practices, and management.
- Compliance with all applicable legislation.
- All personnel are properly trained, at orientation and regularly (e.g., annually), in IPC practices relevant to their employment context and that they comply with the applicable policies, procedures, and practices. All personnel are notified of the changes and appropriate training is provided.
- Procedures are implemented to report, manage, and promptly investigate IPC concerns and incidences of non-compliance.

The practice owner may choose to designate, within the oral healthcare setting, another person as an IPC officer. Although the practice owner maintains full accountability

for the IPC program and any outcome or consequences, the IPC officer may have responsibilities which include:

- Monitoring the implementation and application of legislation, standards, and these guidelines and addressing any non-compliance.
- Ensuring personnel receive appropriate IPC training, according to their responsibilities.
- Monitoring, evaluating, and documenting IPC activities within the oral healthcare setting.
- Administration of IPC compliance audits (e.g., hand hygiene) and corrective actions.
- Investigate and maintain records of IPC concerns and incidences of non-compliance.

For further information, refer to Alberta's Occupational Health and Safety legislation and the *Public Health Act*.

IPC Manual

Each clinic or laboratory has an IPC manual that includes all policies, procedures, and practices employed by the clinic or laboratory to meet minimum requirements set by local, provincial, and national (e.g., CSA) IPC standards and guidelines. OHCPs working with other OHCPs within a clinic or laboratory are advised to work together to ensure that the required policies, procedures, and practices are in place.

In the oral healthcare setting (e.g., clinic, laboratory), **written** policies, procedures, and practices exist on topics including, but not limited to, the following:

- IPC program, including
 - an individual or individuals designated to oversee the development, implementation, evaluation, and update of IPC policies, procedures, and practices (this role may be filled by the practice owner)
 - individuals who have responsibility and accountability to develop, approve, monitor, and maintain reprocessing policies and standard operating procedures
 - criteria for annual program review by all staff for education, compliance, and quality improvement

- IPC measures (e.g., hand and respiratory hygiene, risk assessment)
- Dental instruments, devices, and supplies
 - selection and evaluation of devices and products before purchase
 - storage (including environmental conditions and requirements related to identification and labelling), transportation, and distribution of devices and products
 - transportation, receiving, handling, and processing of new, loaned, shared, and leased dental instruments and devices
 - manufacturer's instructions for use (MIFU), which include the validation of the device or product
 - product manuals, including MIFUs
 - single-use disposable instruments and devices, when appropriate for use
 - regular inspection and preventative maintenance requirements, and related documentation
 - removal of faulty instruments and devices until repaired or replaced
 - recall of medication, equipment, supplies, etc. by the manufacturer or government agency
- Cleaning, disinfecting, and sterilizing
 - cleaning, disinfecting, and sterilizing processes, including specific information on devices that present unique and complex challenges (e.g., devices with lumens) for reprocessing
 - installation, operational, and performance qualification and requalification of sterilizing equipment and products
 - quality monitoring and documentation of the reprocessing procedure, including biological and chemical indicator tests and physical parameters
 - labelling instrument packages
 - actions to be taken following a failed sterility indicator or unexplained parameter change
 - guidance on what to do in case of a recall of improperly reprocessed equipment
 - documented auditing process of competency of OHCPs involved in reprocessing and IPC procedures, including corrective measures, if needed
 - procedures and practices required to maintain the sterility of packages and sterile medical devices
- Personnel (administrative controls)
 - OHS requirements for personnel safety and protection (e.g., PPE, vaccination status)
 - education and training
 - exposure management protocol
- Environmental controls
 - preventing cross-contamination by cleaning, disinfecting, and use of barriers
 - managing hazardous waste (e.g., biohazardous, mercury, lead, sharps)
 - procedure for immediate containing, cleaning, and disinfecting spills of blood and other body fluids
 - facilities maintenance
 - a detailed schedule for cleaning each area (e.g., operatory, reprocessing area) of the oral health-care setting, including defined responsibilities
 - equipment, supplies, and technology required
 - maintenance of appropriate service schedules and records
- Water and water use within the oral healthcare setting
- Suction and suction line maintenance
- Emergencies that include, but are not limited to:
 - loss of staff
 - loss of or decrease in supply chain or inventory
 - loss of utilities including potable water
 - loss of reprocessing equipment
 - loss of or damage to sterile storage and/or laundry areas
- Pandemic management

Education

IPC education, including training and competency assessments, is required for OHCPs and other staff to prevent the transmission of infectious agents between patients, themselves, and the environment. Education and training is specific to the assigned duties of the OHCP or other staff, and may include but is not limited to:

- knowledge and understanding of the oral healthcare setting's IPC manual
- risks associated with the transmission of infectious diseases
- hand hygiene
- principles and components of [routine practices](#) and [additional precautions](#)
- assessment of the risk of infection transmission and the selection and safe use of PPE

- cleaning, disinfection, and reprocessing of equipment, supplies, surfaces, and items in the oral healthcare setting
- water quality, biofilm formation, water treatment methods, and maintenance protocols for water delivery system
- individual staff responsibility for keeping patients, themselves, and co-workers safe

The education is provided upon hire, at least annually, and every time new policies, processes, or equipment are introduced to the oral healthcare setting. All education activities are documented, and records retained as legally prudent.

In addition, OHCPs educate patients informing them of:

- the measures being taken to ensure their safety
- hand hygiene
- respiratory etiquette (e.g., instructions or posters)

IV. SAFE PRACTICE

OHCPs participate in a safe practice environment by following workplace policies and protocols to protect patients, themselves, and colleagues from illness and injury.

Occupational Health and Safety

In Alberta, employers have the responsibility to meet the requirements of the *Occupational Health and Safety Act, Regulation and Code*. This legislation requires employers to do everything they reasonably can to protect the health and safety of their employees. This means ensuring all workers have the skills and training needed to do their jobs in a healthy and safe manner.

Resources are available at bbfeab.ca and include:

- [BBFE Online Interactive Algorithm](#)
- BBFE Posters (1)(2)
- [BBFE Process Algorithm](#)
- [Other useful links](#)

Details on the OHS requirements applying to oral health-care settings may be found in [Appendix C: Occupational Health and Safety](#).

Environmental Controls

Controls

The process of conducting hazard assessments and implementing control measures will help to prevent work-related injuries and illnesses.

Eating and Drinking in Non-Designated Areas

Within the oral healthcare setting, food and drink are to be limited to appropriate areas, such as staff lounges, to limit risk of cross-contamination.

Blood and Body Fluid Exposure and Prevention

Pathogens, such as HBV, HCV, and HIV², may be transmitted to OHCPs through occupational exposures to blood, saliva, and other body fluids. An exposure management

protocol is an important component of an in-office IPC manual because it is prudent to handle significant exposures promptly and systematically.

The greatest risk of transmission of blood-borne pathogens are percutaneous injuries as well as accidents in which blood, saliva, or other body fluids are splashed onto non-intact skin or the mucosa of the eyes, nose, or mouth. Percutaneous injuries could be caused by needles, burs, or other sharp instruments (e.g., scalpels).

Minimizing Droplets, Sprays, and Spatter

The use of dental/laboratory instruments (e.g., ultrasonic scalers, dental and laboratory handpieces, air polishers, air/water syringes, model trimmers) may create droplets, sprays (including aerosols), or spatter. Appropriate work practice controls, such as using a high-volume evacuation or a dental dam, minimize the spread of pathogens through droplets, sprays, and spatter. Using these workplace controls also reduces the risk of the patient ingesting or inhaling contaminated material and/or debris.

Techniques or equipment that reduce exposure to aerosol or droplets are also considered for personal protection (e.g., high-volume evacuation, dental dams).

Sharps, Syringes, Needles

Sharps are devices that can cause a cut or puncture wound. Sharps are kept out of the reach of patients and safely collected after use.

Injury prevention strategies include:

- ensuring needles are capped when not in use
- immediately recap needles after use using a one-handed scoop method or commercial [recapping device](#)
- disposing of used sharps in a clearly labelled puncture-resistant container at point-of-use
- transporting sharps by using a puncture-resistant secured container (e.g., plastic tray with a secured hard plastic cover, cassette) when disposal at point-of-use is not possible

²HBV (Hepatitis B Virus); HCV (Hepatitis C Virus); HIV (Human Immunodeficiency Virus)

- removing disposable sharps from the tray and disposing in appropriate sharps container immediately after use
- removing burs from handpieces immediately after use
- wearing heavy-duty utility gloves and appropriate PPE when gathering and cleaning instruments

Contaminated sharp instruments may present a risk for accidental occupational exposure and disease transmission. It is important to identify and eliminate hazards. Where it is not possible to eliminate the hazard, develop, implement, and monitor appropriate controls.

Safety-Engineered Syringes

Some instruments and equipment have been designed to increase safety, such as self-sheathing anaesthetic needles (also known as safety-engineered syringes). The Occupational Health and Safety Code currently stipulates that an employer provides and ensures that any medical sharp is a safety-engineered medical sharp unless the use of such a required device is not clinically appropriate in the particular circumstances.

Recapping Needles

For dental assistants and dental hygienists, an acceptance has been granted under section 55 of the *Alberta Occupational Health and Safety Act*. The request was submitted for the permission to recap used needles instead of the prohibition on recapping waste needles (as specified in section 527 of the Alberta Occupational Health and Safety Code).

Under the terms and conditions of the acceptance, the following applies:

- The work procedures in the document *Policy Protocol Sharps, Syringes & Safety Engineered Syringes (SES)*, dated May 2018, is followed by all dental and dental hygiene offices.
- The acceptance letter or copy is posted at each office where recapping will occur, or otherwise communicated to affected workers and worker representatives (if present).
- The acceptance and supporting documents may be disclosed to other work sites parties and/or other regulatory agencies for the purpose of ensuring the health and safety of workers or the public.
- All other requirements of the Occupational Health and Safety Code continue to be met.

Administrative Controls

Immunization

Immunization minimizes an OHCP's potential risk for contracting an infectious disease from a patient and from transferring an infectious disease to patients and other staff. All OHCPs know their personal immunization status and ensure their vaccinations are up to date.

It is recommended that healthcare professionals be immunized against:

- Diphtheria
- Hepatitis B
- Influenza and influenza-like illnesses
- Measles
- Mumps
- Pertussis
- Polio
- Rubella
- Tetanus
- Varicella
- Other vaccines recommended by provincial health authorities

Illness and Work Restriction

To ensure patient safety, if an OHCP is presenting with or has a reasonable probability of transmitting an infectious agent, they are not to work with patients. An employer has current and accurate policies stating employment site expectations.

If an OHCP is immunocompromised, considerations for work duties and exposure risk are given, when possible.

PPE for the Oral Healthcare Professional

Personal protective equipment (PPE) refers to a variety of barriers (e.g., gloves, masks, eye protection) used alone or in combination to protect mucous membranes, airways, skin, and clothing. OHCPs and other staff wear PPE for protection from infectious and chemical agents and for the prevention of transmission of microorganisms. PPE is donned after the OHCP has completed a point of care risk assessment and has assessed the task, the client, and the environment.

When using PPE, the OHCP remembers that PPE:

- Fits properly.

- That is contaminated does not come in contact with clean surfaces (e.g., a contaminated gown is removed and discarded prior to removing sterilized items from the sterilizer).
- Is not shared.
- Selection is based on a thorough risk assessment and the potential for transmission of infectious agents.
- Is removed prior to leaving an operatory, laboratory, or clinical area.
- Is discarded immediately after use if single-use barriers are used.

Gloves

Gloves are worn to protect hands from contamination.

Gloves:

- Are selected as appropriate to the task.
- Do not replace the need for hand hygiene. Appropriate hand hygiene protocols are followed before donning and after doffing.
- Are worn when contact with mucous membranes, non-intact skin, or body fluids is anticipated.
- Are donned immediately before the activity for which they are being used.
- Are changed between care for each patient or more frequently, as necessary.

When selecting hand lotions, check with the manufacturer's recommendations regarding the compatibility of lotions with gloves. Petroleum-based lotions may weaken the glove material, resulting in increased permeability. Consideration is given to the type and use of gloves (i.e., utility gloves, procedural gloves).

Eye Protection

Eye protection is used if there is risk of exposure to infectious (blood or body fluids), chemical, or physical hazards (e.g., fragment of calculus). Eye protection serves as protection from:

- sharps
- foreign objects
- splashes from all directions. (i.e., protection from the sides and bottom)
- impact

Personal eyewear does not provide this type of protection; therefore, it is not acceptable to use personal eyewear as eye protection.

Eye protection:

- Includes goggles, safety glasses with shields, and face shields.
- Is worn by the patient and the OHCP when there is a risk of spatter, splatter, debris, or injury being created by the procedure being performed.
- Shields the eyes from spatter and debris that may be created during the oral healthcare procedure (e.g., using handpieces, ultrasonic instruments, air/water syringe).
- Fits securely and does not interfere with vision.
- If reusable, is cleaned and disinfected after use, between patients, and/or once it becomes visibly contaminated.

Masks

Surgical masks that cover the nose and mouth are worn during oral health procedures to protect the respiratory mucosa from coming in contact with droplets and spatter.

Masks:

- Are selected appropriate to the situation (e.g., aerosol-generating procedures, pandemic management) and the procedures being performed.
- Are worn by OHCPs when performing aseptic or invasive procedures.
- Worn to decrease the risk of cross-contamination (e.g., not to be touched while being worn, not to be hung around the neck or under chin).
- Are changed according to MIFU and when contaminated (i.e., wet, visibly soiled) and are changed between patients.
- If an N95 respirator is indicated, the OHCP ensures that they are properly fit tested for the model they are using at initial use and as directed by industry standards thereafter (e.g., every two to three years, after a substantial weight loss).

Face shields are not an appropriate substitute for masks.

Protective Clothing

Whenever clothing or skin may become contaminated with splashes, spatter or spray from blood or other body fluids, a water-resistant gown is donned. Clinical and laboratory coats or jackets are not a substitute for gowns where a gown is indicated.

Gowns:

- If reusable, are laundered between patients when contaminated (i.e., performing AGMP [aerosol generating medical procedure] or visibly soiled)
- If disposable, are removed and discarded immediately after use and prior to leaving treatment and/or reprocessing room.
- Are long-sleeved and cuffed, and provide full frontal coverage from neck to mid-thigh or below.

Footwear:

- Worn in the patient treatment and reprocessing areas has enclosed toes and heels and be easily cleaned.

Other considerations:

- Hair is secured and worn away from the face or properly covered with hair or a beard covering for all clinical, laboratory, and reprocessing staff. Hair coverings are changed at least daily or more frequently, if soiled.
- Regular clinical attire (e.g., uniforms, scrubs) is not intended to function as protection against a hazard where spatter or spray is anticipated. Clinical attire that becomes inadvertently contaminated is changed.
- Clinical attire is not to be worn outside of the oral healthcare setting.

Latex Sensitivity and Allergy

Many common oral health products (such as gloves, dental dams, and prophylaxis cups) may contain latex and pose a severe risk for those with latex allergies or sensitivities.

The use of latex products (e.g., gloves) is not recommended. Allergic reactions have been reported with the use of latex products, and consideration is given to this when purchasing. If the OHCP or the patient has a latex allergy, latex-free gloves are used, and consideration given to the nature of other products used so as to avoid other sources of latex.

Consider the following:

- As part of the medical history-taking process, ask questions about possible latex allergy or sensitivity.
- Treat in an environment where contact with latex proteins, either directly or airborne, is kept as low as reasonably achievable.
- Always check labels of products for latex content.

V. ENVIRONMENTAL CLEANING

OHCPs protect patients by using appropriate methods to prevent transmission of infectious agents.

OHCPs minimize the transfer of microorganisms from environmental surfaces to provide safe practice in oral healthcare settings.

Surfaces

There are two categories of surfaces for oral healthcare settings:

- housekeeping surfaces (low-touch surfaces)
- clinical surfaces (high-touch surfaces)

Housekeeping Surfaces

Housekeeping surfaces refer to areas open to the public such as reception areas, consultation rooms, and business offices that patients may touch or encounter. These surfaces do not generally become contaminated with blood and other body fluids. Therefore, there is minimal risk of microorganism transmission in these areas (e.g., reception area chairs, countertops, consultation rooms, business office).

To minimize the risk to patients and staff:

- Soiled clothing (e.g., lab coats/gowns) and PPE are removed after leaving laboratory and operatories and before entering public spaces.
- Floor cleaning mop heads and buckets are cleaned thoroughly between uses and allowed to dry completely. Single-use disposable mops are preferred.
- Floor cleaning mops used in clinical contact areas are not used in housekeeping areas.
- Carpeted areas and upholstered furnishings are discouraged; however, if used, they are cleaned regularly. Areas where carpets have not yet been removed are vacuumed daily.

If housekeeping surfaces become soiled with blood or other body fluids (e.g., patient vomits in the reception area), the surfaces are cleaned first, and then disinfected

for the appropriate contact time according to product MIFU.

Clinical Surfaces

Clinical surfaces are in the immediate area of patient treatment and are likely to be contaminated with blood and other body fluids from direct spray, spatter, contaminated instruments, or the OHCP's gloved hands.

Patient treatment areas and countertops are free of clutter and unnecessary supplies and equipment to minimize contamination with droplets, sprays, or spatter and to facilitate effective disinfection. Surface barriers may also be used.

Surface Barriers (Covers)

Surface barriers may be used to protect clinical surfaces (including equipment) that are difficult to clean and disinfect and that are likely to become contaminated with blood or body substances (e.g., light handles).

Surfaces and equipment are cleaned and disinfected, as appropriate, between patients or uses.

When used, surface barriers:

- Cover the entire surface, including edges.
- Are impervious to moisture (e.g., plastic bags or plastic sheets).
- Are applied with clean hands.
- Are removed and discarded between each patient.

Considerations when using surface barriers:

- OHCP, wearing appropriate PPE, changes barriers after each patient.
- Be aware of cross-contamination and the chain of infection when removing barriers.
- Areas covered by barriers can become contaminated during treatments or procedures and may need to be disinfected and allowed to dry completely before the surface barrier is replaced.

Cleaning and Disinfection

All clinical surfaces are cleaned of gross debris and then disinfected with a hospital grade disinfectant according to MIFUs.

Appropriate PPE is worn for both cleaning and disinfecting surfaces to prevent exposure to infectious and chemical agents. Use products and equipment approved for use in healthcare and meet the following criteria:

- Intended use in disinfecting hard surfaces in oral healthcare settings.
- Effective performance (e.g., broad spectrum, fast acting, remains wet for required contact time, easy to use, acceptable odour, economical, stable, good cleaning properties, non-flammable).
- A Drug Identification Number from Health Canada.
- Compatibility with other cleaning and disinfection products.
- MIFU and labelling that outlines:
 - intended use and purpose

- type of surface to which the product may be applied (e.g., floors, walls, countertops)
- storage in a manner that reduces the risk of contamination
- expiry date
- Specific instructions for in-use dilution of dilutable products, if required.
- Rinsing instructions for products, if required.

NOTE: Some low-level hospital grade disinfectants do not inactivate non-enveloped viruses; in these cases, use an intermediate level (i.e., mycobactericidal) disinfectant with broad spectrum bactericidal and enveloped and non-enveloped viruses, fungi, and yeasts kill.

Cleaning and Disinfection Schedule

Follow MIFU of products selected for cleaning and disinfection.

Ensure to clean and disinfect surfaces and areas according to Table 2.

Table 2: **Cleaning and Disinfecting Schedule by Area**

Area	Timing
Clinical Surfaces	
Patient treatment area	<ul style="list-style-type: none"> • beginning of day • after each patient • end of day
Laboratory space	<ul style="list-style-type: none"> • beginning of day • after each patient's appliance/case • end of day
Shipping/receiving, cleaning and decontamination area for incoming/outgoing cases	<ul style="list-style-type: none"> • immediately after decontamination of each case • if visibly soiled
Reprocessing area	<ul style="list-style-type: none"> • beginning of day • if visibly soiled • end of day
Housekeeping Surfaces	
Floors	<ul style="list-style-type: none"> • cleaned daily or more frequently if visibly soiled • immediately if there is a spill
Walls, blinds, and window covering in patient-care areas	<ul style="list-style-type: none"> • when visibly dusty or soiled • regularly scheduled cleaning
Public areas	<ul style="list-style-type: none"> • daily or more frequently if visibly soiled

Laundry

If required, laundry may be done in the practice environment or off-site. Always handle and store dirty linen separately from clean linen in a way that ensures the cleanliness of clean linen and prevents contaminating it. Follow MIFUs for equipment used to do laundry and materials that are laundered.

PPE, based on PCRA and soil level, is worn to sort and process laundry. Hand hygiene is required before and after handling laundry.

Waste Management

Waste is separated into hazardous and general office waste; hazardous waste consists of biohazardous waste and mercury-containing waste. Each waste type is disposed of in a manner that prevents the transmission of infectious agents. Environment Canada provides a reliable resource on best practices that are clinically effective and environmentally sound in the management and disposal of dental waste materials.

Hazardous Waste

Biohazardous Waste

Biohazardous waste includes blood and blood-saturated materials (e.g., gauze) that will release liquid if compressed and may possess infectious agents. Also known as infectious biomedical waste, this is regulated by the *Transportation of Dangerous Goods Act and Regulations*.

Compliance in the handling of infectious biomedical waste, according to provincial and municipal regulations, is demonstrated by:

- Using colour-coded containers for storage (e.g., sharps, biohazardous waste) that are marked with the universal biohazard symbol.
- Placing blood-soaked materials in a yellow container (e.g., sharps) with biohazardous symbol.
 - If blood-soaked materials are to remain on-site for more than four days, they are stored in a refrigerated storage area marked "Biomedical Waste Storage Area" displaying the universal biohazard symbol.
- Releasing biohazardous waste only to an approved biomedical waste carrier for disposal.

Sharps:

- Include needles, syringes with needles, scalpel blades, clinical glass, biological indicators, scalers, and ultrasonic and etching tips.

- Are disposed of in a yellow puncture-resistant, leak-proof container specifically designed for their management and labelled with the universal biohazard symbol.
 - Containers are not filled beyond their designated capacity.
 - Containers are released only to an approved biomedical waste carrier for disposal.

Mercury-Containing Waste

Follow Occupational Health and Safety requirements regarding [mercury-containing waste](#).

General Office Waste

General office waste includes items that are no more infectious than residential waste and therefore require only careful containment and removal. This includes:

- Contaminated biomedical waste (items that have had contact with blood and/or saliva, such as gauze, cotton rolls, and examination gloves) that do not release liquid or semi-liquid when compressed.
- Extracted teeth that do not contain amalgam restoration (if teeth contain amalgam restorations, they are discarded according to the guidelines for mercury-containing waste).

When disposing of general waste:

- Plastic bags used to line garbage containers are removed and tied when three-quarters full and replaced with a new bag.

VI. CLINICAL CONSIDERATIONS

OHCPs apply appropriate techniques to break the chain of infection during clinical care.

Structural Considerations

- Work surfaces and patient contact surfaces are smooth, intact, easily cleanable, non-porous, and waterproof.
- Storage spaces are large enough to safely store and organize equipment and supplies.
- Ensure there is adequate lighting for all tasks.
- The ventilation system is able to remove harmful vapours and airborne hazards.

Sinks

At least one designated hand hygiene sink is easily accessible to the OHCP for times when soap and water are required. The sink is equipped with:

- hot and cold running water
- liquid soap
- disposable or single-use towels stored in a covered dispenser

Designated hand hygiene sinks are not used for equipment decontamination, waste disposal, food preparation, etc.

Waterless Hand Hygiene Stations

Waterless hand hygiene stations are provided in locations as necessary, such as where:

- needed to facilitate compliance with routine practices
- reprocessing occurs
- PPE is donned and doffed

Additional Environmental Considerations

See also [V. ENVIRONMENTAL CLEANING](#)

- The oral healthcare setting is kept neat, clean, and free of exposed waste material.
- Floors and walls are easy to clean and disinfect.

- ABHR is available throughout the clinic where hand hygiene is required.
- Only products specifically designed for IPC in an oral healthcare setting are used.
- Appropriate signage is easily visible to patients and other visitors, alerting them to report the symptoms associated with communicable diseases or acute respiratory infections (e.g., influenza, common cold), such as fever, cough, vomiting, and diarrhea.
- Toys are cleanable, if available.

IPC During Clinical Care

The OHCP minimizes risks of cross-contamination during clinical care. Some examples of this include:

- Using clean hands to access supplies in drawers.
- Employing appropriate PPE donning and doffing protocols.
- Employing a system that protects the patient records (whether computer or paper) from droplets, spray, or spatter.

Dental Unit Waterlines

Dental unit waterlines (DUWL) are made of narrow-bore plastic tubing that carries water to handpieces, air/water syringes, ultrasonic scalers, and air polishers. DUWL can become heavily colonized with water-borne microorganisms (including bacteria, fungi, and protozoa) by forming a biofilm on the interior surface of the waterline. Flushing does not remove biofilm. Generally, these endemic, water-borne microorganisms are not dangerous to the general population unless the patient or OHCP is an immunocompromised susceptible host. Testing and appropriate use of disinfection is used to maintain DUWL quality.

Considerations when using a waterline:

- The water is not heated because the heat can foster the growth of microorganisms.
- At the beginning of each workday, the waterline is purged by flushing thoroughly with water for a minimum of two minutes or as directed by chair MIFU.

- Suction lines are cleaned at least weekly with an enzymatic cleaner.
- After each patient:
 - Handpieces that use water coolant are run for a minimum of 20 seconds and then the handpiece is removed for reprocessing.
 - Prior to purging the remaining waterlines, any additional handpieces, air/water syringe tips, and ultrasonic tips are removed.
 - After each use, flush out any potential patient material that might have entered the turbine or air and waterlines by activating the device to discharge air and water for a minimum of 20 seconds.
- The waterline is monitored for damage and/or visible contamination and is replaced as needed or according to MIFU.
- Signs that may indicate severe biofilm formation include:
 - musty odour
 - cloudiness or particulates in the water
 - clogging of lines
- For offices using closed or other special water delivery systems:
 - MIFUs are followed for required maintenance.
 - OHCP do not touch the tubing with fingers or soiled, gloved hands when changing the water coolant bottle since this can easily contaminate the entire system.
 - Follow MIFU's daily and weekly maintenance schedule for dental units and dental equipment.

In some circumstances, it is not appropriate to use a waterline. Sterile water or sterile saline is used when irrigating open surgical sites and whenever bone is cut during invasive surgical procedures.

Removable Intraoral Dental Handpieces and Devices

Several dental devices/instruments contact mucous membranes and expel air and water into the patient's mouth and potentially into open vascular sites. These devices are attached to the air or waterlines of the dental unit, and include:

- high- and low-speed handpieces, including low-speed motors
- prophylaxis angles
- ultrasonic and sonic scaling tips

- ultrasonic and sonic endodontic devices
- air abrasion devices
- air and water syringe tips

Dental handpieces, including motors and devices, can draw back oral fluids into their internal compartments, which can then be introduced into the oral cavity of another patient during use. Considerations when using these devices/instruments:

- If a dental handpiece or component cannot be heat sterilized and does not have validated instructions for reprocessing, do not use that device.
- Dental handpieces and other intraoral devices attached to air or waterlines are flushed, disassembled, cleaned, lubricated, and sterilized after each patient use according to MIFU.
- Components that are permanently attached to dental unit waterlines (e.g., electric handpiece motors, handles for ultrasonic devices, and attachments for saliva ejectors, high-volume suction, and air/water syringes) are covered with barriers that are changed after each patient use. Items are cleaned and disinfected before the next patient is brought into the treatment room.
- Sterilize and lubricate handpieces and devices according to MIFU.

Saliva Ejectors and Suction Lines

Closing lips and making a seal around a low-volume saliva ejector can create a partial vacuum, resulting in backflow. The backflow may allow microorganisms from the suction lines to enter the patient's mouth. As a result:

- OHCPs are careful not to allow patients to close their mouths over the saliva ejector tip.
- Alteration of ejectors, such as perforating the stem, is an after-market alteration and is disallowed for health-care products and is not effective for eliminating this concern.
- Specially designed saliva ejectors that do not allow a negative pressure to form around the tip are marketed by some manufacturers and validated information about their efficacy is requested prior to purchase.
- Saliva ejector tips are single-use devices.

To minimize debris and microorganisms from the suction lines:

- Clear suction lines between patients by aspirating water and/or an appropriate cleaning solution to produce turbulent flow in the lines.

- Flush with an enzymatic cleaner or appropriate cleaning solution at least weekly or according to chair and cleaner MIFU.
- Clean suction traps according to MIFU.

Lasers

Lasers transfer electromagnetic energy into tissues, resulting in the release of laser-generated airborne contaminants. This thermal destruction of tissue creates a smoke by-product or heated plume that may include particles, gases (e.g., hydrogen cyanide, benzene, formaldehyde), tissue debris, viruses, offensive odours, and possibly metal fumes.

OHCPs use work-practice and engineering controls to avoid inhaling or coming in contact with laser and electrosurgical plumes and surgical smoke. These practices include, but are not limited to:

- routine practices and airborne precautions (e.g., N95 masks, full-face shields)
- appropriate suction units with inline filters suitable to capture debris being removed
- proper ventilation including:
 - dedicated mechanical smoke exhaust systems with a high-efficiency filter
 - local smoke evacuation systems, which may improve the quality of the operating field
- following laser MIFU for cleaning and disinfection/sterilization

Refer to laser MIFU for any special precautions required for use.

Radiography

When handling radiographs and radiographic equipment, special considerations are taken to prevent cross-contamination from blood or other body fluids. Lead aprons are handled with clean hands both before placement and for removal because some have cloth seams that preclude disinfection for that area. Gloves, masks, and protective eyewear are worn when placing devices intraorally and taking radiographs and handling contaminated film packets.

Heat-tolerant versions of intraoral radiograph accessories (e.g., film-holding and positioning devices) are heat sterilized between patients following MIFU.

Radiography equipment (e.g., radiograph tube head and control panel) are protected with surface barriers that are

changed after each patient use. If barriers are not used, equipment that has come into contact with the OHCP's gloved hands or contaminated film packets is cleaned and disinfected after each patient use.

Analog (Film)

Film packets are single-use items. Clean and disinfect contaminated film packets prior to developing to avoid cross-contamination of the radiograph processor. Film packet may be placed into a clean disposable cup for transport.

Analog film with or without barrier is disinfected using surface disinfectant following exposure. Complete the following steps to disinfect analogue film:

- Expose film.
- Drop film packets onto disinfectant wipe or other disinfectant wetted material and clean packets to remove blood/saliva.
- Drop onto new disinfectant wipe and wipe to disinfect.
- Drop into clean paper cup without touching contaminated gloves to packets and allow correct contact time following disinfectant MIFU.
- Remove and discard gloves, perform hand hygiene, remove lead apron, and process film.

Digital

Digital radiography sensors are:

- Protected with barriers since they come into contact with mucous membranes.
- Cleaned of gross debris and saliva once the procedure is complete, disinfected according to MIFU, and have a new barrier placed.

Any keyboard, mouse, or other hardware device used in conjunction with the digital radiography equipment have a barrier in place.

Intraoral Cameras

Follow MIFU for cleaning and disinfection of intraoral cameras. Barriers are used on the portion that is placed intraorally and on any surfaces that may become contaminated.

Invasive Surgical Procedures in Dental Settings

Surgical aseptic technique and practices seek to:

- Eliminate objects and the surrounding area of potential microorganisms.

- Prevent contamination of a wound.
- Isolate the operative site from the surrounding unsterile physical environment.
- Create a sterile field to perform surgery safely.

Oral healthcare workers follow these routine practices and perform appropriate disinfection and sterilization of dental instruments and devices. In addition, when performing invasive surgical procedures in community-based healthcare settings, they assess the practice environment to include additional infection prevention and control practices. These additional practices incorporate evidence-based practice recommendations such as Asepsis for Invasive Surgical Procedures Conducted Outside of Operating Rooms or in Community-Based Healthcare Settings. Refer to AHS's [Surgical Aseptic Technique and Sterile Field](#).

Biopsy Specimen Handling

To prevent contamination of the specimen as well as prevent contamination to the outside of the container, biopsy specimens are placed in a container that is sturdy, leak-proof, and designed to close securely. If the outside of the container becomes contaminated, the container is cleaned and disinfected.

Applicable legislation is followed for storing, transporting, and shipping a biopsy specimen.

Injectable Medications, Vials, and Solutions

OHCPs assisting with or administering medications (e.g., intravenous sedation) using multi-use vials:

- Use a new, single-use disposable needle and a new, single-use disposable syringe for each entry into the multi-use vial.
- Follow proper aseptic technique when dispensing and administering, if applicable, the medication.

Consideration is given to the risk associated with common-vehicle transmission.

- Multi-dose vials are dated upon opening and discarded prior to the expiry date listed on the label.
- The vial septum is appropriately disinfected with a new disinfectant swab prior to each entry.
- Drugs are never administered to more than one patient or intravenous (IV) system attached to the patient from a common syringe or IV bag.

Cleaning and Disinfection of Appliances, Prostheses, and Other Items Used During Fabrication

Dental appliances and prostheses, and other items used during fabrication (e.g., impressions, occlusion rims, bite registrations), are potential sources for cross-contamination and need to be handled in a manner that prevents exposure of infectious agents to patients, OHCPs, and the oral healthcare setting.

The cleaning and disinfection of appliances and prostheses, and any other items used intraorally during their fabrication, occurs as soon as possible after removal from the patient's mouth and before blood or other organic debris can dry. Consult MIFUs to ensure appropriate contact time.

Consult MIFU regarding the stability of specific materials (e.g., impression materials) during disinfection to reduce the risk of distortion.

An appliance or prosthesis, worn by a patient, may be cleaned in an ultrasonic cleaner if:

- The ultrasonic cleaner is dedicated to cleaning patient appliances and prostheses.
- Each appliance or prosthesis is contained within a vessel that can be discarded, disinfected, or sterilized between patients.
- Other items:
 - Used intraorally (e.g., impression trays, face bow forks) and heat tolerant are cleaned and sterilized after each patient use.
 - That have no contact with the patient but may be contaminated (e.g., articulators, case pans), are cleaned and disinfected according to MIFU between uses.
 - Disinfect denture or devices prior to making adjustments according to applicable MIFUs.
 - Use an appropriate container to transfer removable dentures and devices between chair side and lab when performing adjustments.

Shipping/Receiving

Sending Items to a Commercial Laboratory

Communication between clinics and outside providers is important to ensure that appropriate IPC protocols are in place and being followed. This minimizes the risk to patients and OHCPs while preserving the integrity or quality of materials used. Effective communication and

coordination between the clinic and laboratory ensure that:

- Appropriate cleaning and disinfection procedures are performed.
- Materials are not damaged or distorted because of overexposure to disinfectants.

All items sent to a commercial laboratory are considered contaminated and a possible source of infectious agents. Items are properly cleaned and disinfected, packaged in an impervious bag, and labelled before shipping to a commercial dental laboratory. The accompanying prescription is not placed in the same bag.

Receiving Items From a Commercial Laboratory

All items received from a commercial laboratory are disinfected prior to dispensing or placing in a patient's mouth. Reusable plastic transport containers are disinfected and sterilized according to MIFU.

Sending Devices/Instruments for Repair and/or Maintenance

To reduce the risk of transmission, ensure items are cleaned and disinfected, packaged, and labelled before shipping.

- Clean and disinfect including reprocessing of heat tolerant devices/instruments before sending for repair or maintenance.
- Reprocessed items are sent in the sterile packaging and placed in a clean, puncture-resistant container for shipping.
- Disinfected items are placed in a new plastic bag; sealed; labelled; and then placed in a clean, puncture-resistant container for shipping.
- Do not reuse single-use shipping materials (e.g., plastic bags).

Addressing Devices/Instruments Received by the Clinic

Follow MIFU when receiving devices/instruments. Some devices may arrive in a sterile state, but other items may need to be reprocessed prior to use.

Loaned Devices/Equipment

Follow MIFU for cleaning, disinfection, or sterilization for all other equipment and devices prior to use. Loaned sterilizers are monitored with a test load and be fully qualified before clinical use to ensure sterilization can be achieved.

Equipment Maintenance

Follow MIFU for the maintenance of each piece of equipment. Maintain logs to demonstrate routine maintenance and repair for the life of the equipment.

Chair Side Sharpening of Instruments

Periodontal instrument sharpening, and the sterilization and use of sharpening products follow MIFU.

Intra-operative chair side sharpening is only permitted if the product used for sharpening (e.g., sharpening card or stone) has been sterilized in accordance with MIFU.

If the sharpening product's MIFU is validated and allows for chair side sharpening, consider the following:

- appropriate level of PPE for risk level and task
- sharpening is to be done on a stable surface
- wipe any debris, such as lubricants or metal filings, before and after sharpening

See also [Sharps, Syringes, Needles](#)

Alternate Clinical Settings

An alternate clinical setting (mobile or remote) is subject to the same guidelines as a permanent setting. Additional IPC considerations are required when providing oral health services at a location outside of the traditional oral healthcare setting that requires transportation of sterile and contaminated dental devices/instruments as well as supplies.

In addition to the requirements listed in [Section III. IPC Manual](#) alternate clinical settings require policies and procedures regarding:

- loading the vehicle
- decontamination of the operatory in a mobile setting
- air handling systems
- unloading contaminated dental devices/instruments from container
- pre-cleaning holding (enzymatic) solutions
- reprocessing
- closing down the operatory in a mobile setting
- end of day unloading of the vehicle at the reprocessing location

Selecting a Suitable Remote Site

In selecting a suitable external site location to provide care, assess and consider:

- accessibility to electrical outlets
- accessibility to a sink with running water (to be used as a designated hand hygiene sink)
- accessibility to a toilet or utility sink for disposal of suction waste
- type of room (avoid rooms used for food storage, preparation, or consumption, such as a dining room or kitchen)
- size of room adequate to hold dental unit (if applicable) and supplies
- air handling and ventilation
- surfaces that are smooth, intact, easily cleanable, non-porous, and waterproof
- if area is carpeted, consider:
 - Easy-to-clean, non-permeable barrier (e.g., floor mat) placed on the floor that covers two metres around the treatment area.
 - The barrier is cleaned or removed:
 - If visibly contaminated.
 - At the end of the treatment day.
 - Disinfected or discarded after use.
- remove extraneous items not needed for treatment
 - If unable to remove, cover with a non-permeable barrier in the “splash zone.”

Mobile vehicles (e.g., van) are stored in heated environments (e.g., garage, storage unit), if necessary.

If reprocessing is performed, all steps are performed to the same standard as in a permanent oral healthcare setting. Tabletop sterilizers are requalified by a trained technician each time they are moved.

Transportation of Supplies

Transportation

Dental devices/instruments and supplies for providing oral healthcare services are transported to prevent damage to sensitive devices and maintains sterility of instruments/devices used in patient care. Vehicles used for transportation are to be clean and maintained.

Control temperature and humidity to maintain sterility of packages. In general, keep temperatures of storage and treatment areas between 20–23°C. Maintain and monitor humidity between 30%–60% (preferably 40%–50%).

Conditions may change depending on the specific items or supplies that the practice carries, so consult MIFUs for specific information.

Containers for Transport

All supplies and devices are transported in plastic bins (e.g., smooth, impervious material) with locking lids. The containers are labelled to identify the contents are contaminated. If cleaning cannot be performed immediately, instruments are kept moist and placed in a puncture-resistant holding container and soaked with a detergent or an enzymatic cleaner to prevent drying of organic material. If an instrument is not cleaned, remaining organic and inorganic matter may prevent effective disinfection and sterilization. Refer to instrument and solution MIFUs to ensure that the integrity of the instruments is maintained.

Waste Disposal

Consider how to dispose of waste at remote locations, including biohazardous waste, suction waste, and general waste.

If amalgam is present, refer to [Mercury-Containing Waste](#).

Suction Waste

The suction waste container is emptied during the day if it becomes three-quarters full, at the end of the treatment day, or according to MIFU. Suction waste is disposed into a designated toilet or utility sink. No other people can be in the bathroom during waste disposal. If MIFUs allow, a liquid waste solidifying product can be used in liquid suction waste. When it solidifies, the suction waste can be disposed of in general waste.

Air Handling/Ventilation

Air handling is adequate to protect the OHCP and other staff from exposure to dust, toxic vapours, and other airborne hazards. Well-designed and well-maintained ventilation systems remove toxic vapours, fumes, mists, or airborne dusts from the workplace before workers are exposed. Removing the contaminated air reduces the hazard of toxic materials.

VII. LABORATORY CONSIDERATIONS

All sections of this document are applicable to all regulated members in all professions in the areas which are applicable to their practice. OHCPs working in a commercial laboratory setting follow all sections of these guidelines that are applicable to their practice.

OHCPs apply laboratory asepsis to prevent cross-contamination when creating, transporting, and handling laboratory materials.

Structural Considerations

- Surfaces are smooth, intact, easily cleanable, non-porous and waterproof.
- Areas are well organized and have adequate lighting.
- Ventilation and air handling protects the OHCP and other staff from exposure to dust, toxic vapours, fumes, and other airborne hazards in the workplace.

Sinks

At least one designated hand hygiene sink is easily accessible to the OHCP for times when soap and water are required. The sink is equipped with:

- hot and cold running water
- liquid soap
- disposable or single-use towels stored in a covered dispenser

Designated hand hygiene sinks are not used for equipment decontamination, waste disposal, food preparation, etc.

Waterless Hand Hygiene Stations

Waterless hand hygiene stations are provided in locations as necessary, such as where:

- needed to facilitate compliance with routine practices
- reprocessing occurs
- PPE is donned and doffed

Environmental Considerations

See [V. ENVIRONMENTAL CLEANING](#)

Commercial Laboratory Considerations

A commercial dental laboratory has dedicated and distinct spaces for:

- laboratory practice
- patient care
- shipping/receiving
- reprocessing

Patient Care Area in a Commercial Laboratory

Patient care occurs in a dedicated patient care area which is subject to the clinical considerations listed in this document. See also [VI. CLINICAL CONSIDERATIONS](#)

Cleaning Existing Dental Appliances and Prostheses

An appliance or prosthesis, worn by a patient, may be cleaned in an ultrasonic cleaner if:

- The ultrasonic cleaner is dedicated to cleaning existing appliances or prostheses.
- Each appliance or prosthesis is contained within a vessel that can be discarded, disinfected, or sterilized between patients.

Appliances and prostheses are returned to the patient free of contamination. Finished appliances, prostheses, and trial prosthesis to be delivered to the patient are free of contamination and have been thoroughly rinsed of any traces of residual disinfectant.

Shipping/Receiving Area in a Commercial Laboratory

A separate shipping/receiving area is established to reduce contamination and the risk of transmission.

Receiving Incoming Items to a Commercial Laboratory

The OHCP treats all incoming items as contaminated and performs cleaning and disinfection procedures before performing any clinical activity, ensuring to:

- Wear PPE including gloves, a gown, eye/ facial protection, and mask.
- Clean thoroughly to remove all body fluids (e.g., blood, saliva) prior to disinfecting.
- Rinse thoroughly to remove all residual traces of disinfectant.
- Dispose of single-use shipping materials (e.g., plastic bags).
- Disinfect/sterilize, according to MIFU, reusable shipping materials (e.g., reusable plastic containers).
- Devices included with a case are placed into a clean impervious bag (and recorded to prevent loss and maintained in the lab case box) until returned to the dental office.

Disinfect all items received from oral health practices or other sources before performing any clinical activity.

Consult MIFU when determining if a product is appropriate for use on an item and ensure the product:

- Has a DIN from Health Canada.

- Has efficacy for the intended use.
- Is compatible with the material to be disinfected.
- Is safe for use, with no toxic and minimal irritating effects to/for the OHCP and other staff nor residual disinfectant remains which may be harmful to the patient.

Shipping Items From a Commercial Laboratory

The OHCP ensures that any completed work is cleaned, disinfected, packaged, and labelled before shipping.

- Place disinfected items in a new plastic bag; seal; label to indicate “disinfected”; and then place in a decontaminated, rigid container for transport along with any contaminated, bagged devices from the case.
- Place any notes or invoices in a separate bag to avoid cross-contamination.
- Do not reuse shipping materials (e.g., plastic bags).

Reprocessing Area in a Commercial Laboratory

Reprocessing in a commercial laboratory is subject to the Reprocessing section listed in this document. *See also* [VIII. REPROCESSING](#)

Table 3: **Instrument Reprocessing for Laboratory Items**

Instrument or Instrument Type	Action Required
Laboratory items (e.g., polishing points, rag wheels, laboratory knives) that are used on contaminated or potentially contaminates appliances, prostheses, or other material	Heat-sterilize, or purchase single-use disposable items, or reprocess according to MIFU after each case. For items such as rag wheels that do not come with MIFUs and therefore cannot be reprocessed, treat as single use or disinfect case prior to and after exposure to rag wheel.
Heat-sensitive lab items exposed to patient materials	After each case, reprocess according to MIFU. If no MIFU is provided, treat item as single-use.
Pressure pots and water baths	Clean and disinfect after each case.
Any equipment used for direct patient care, or on an appliance that has had prior direct patient contact	Cleaned and disinfected between patients or protected with a surface barrier that is changed and the surface disinfected between patients.
Work pans	Clean and disinfect after each case.
Articulators	Clean and disinfect after each case.
Ultrasonic cleaning solution	Changed daily or according to MIFU, ultrasonic chamber is disinfected prior to refilling.
Pumice used on appliances that have had prior patient contact	Changed after each case.
Pumice used on new appliances	Changed daily.

VIII. REPROCESSING

OHCPs implement the chain of instrument reprocessing using effective reprocessing techniques to provide clean, sterilized instruments for use in patient care.

Effective Reprocessing

Reprocessing reusable devices includes all the steps required to provide reusable instruments/devices that are sterile and safe for patient care with the goal to prevent the spread of potentially pathogenic microbes and break the chain of infection.

Three routes of disease transmission involving contaminated instruments are patient-to-patient, clinical/laboratory personnel-to-patient, and environment-to-patient/personnel.

Table 4: **Routes of Disease Transmission Involving Contaminated Instruments**

Route of Disease Transmission	Route Description
Patient-to-patient	Microbes from a patient’s mouth that contaminate instruments are not removed or killed before the instruments are used on another patient or patient’s appliance.
Clinical/laboratory personnel-to-patient	Microbes from the hands or respiratory droplets of OHCP or other oral health personnel contaminate unpackaged instruments after the sterilization step but before presenting at point-of-use.
Environment-to-patient/personnel	Microbes from the environment contaminate the instruments after the sterilization step but before presenting or unpackaging at point-of-use.

It is the shared responsibility of all OHCPs and other staff involved with each device, instrument, or piece of equipment to ensure that effective reprocessing takes place. Instruments used in the oral healthcare setting are procured with an awareness of their function, approvals, and reprocessing requirements. Following use, contaminated instruments are cleaned and then disinfected or sterilized by trained staff, in a designated area (separate from patient care and laboratory areas), according to defined policies and procedures that are based on accepted standards and best practices. Monitoring and quality control are further integral to effective reprocessing. These processes as well as recalls and safeguards are put in place in the event of equipment failures. Finally, indicators are observed at point-of-use to verify that effective sterilization has taken place. All these components are in place to achieve success.

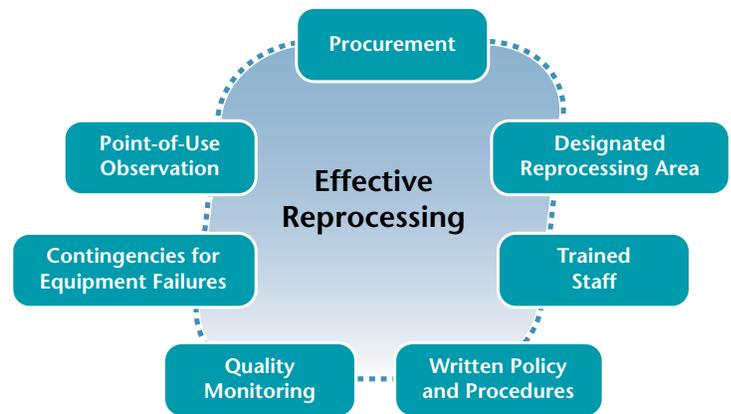


Figure 2: **Effective Reprocessing**

Instrument Classification for Reprocessing

Non-Critical, Semi-Critical, Critical Devices (Spaulding's Classification)

The appropriate reprocessing of reusable medical devices and instruments is crucial in preventing the transmission of microorganisms and all OHCPs involved with

reprocessing are required to competently perform all aspects of reprocessing. The Spaulding's Classification is a system based on potential risk of infection involved with equipment use during patient care. The system identifies three categories: critical, semi-critical, and non-critical. Spaulding's Classification system establishes the minimal level of reprocessing needed to ensure medical devices are safe to use.

Table 5: **Spaulding's Classification**

Category	Definition	Examples	Processing
Critical	Enters sterile tissue or the vascular system and therefore presents a high risk of infection if contaminated with any microorganisms, including bacterial spores.	Surgical instruments; orthodontic bands; dental burs; periodontal instruments (e.g., scalers, ultrasonic tips)	Sterilized according to MIFU, kept in their intact sterile packaging before use. If single-use, they are disposed of immediately after they have been used.
Semi-Critical	Comes in contact with mucous membranes or non-intact skin.	Impression trays; lab burs; orthodontic and wire bending pliers; dental dam frame; mouth mirrors; facebow; intraoral fork; fox plane; implant tools; suction tips; laboratory handpieces	Sterilized according to MIFU. Heat sensitive items are processed through high-level disinfection between patient use according to MIFU or used as single-use items.
Non-critical	Comes in contact with intact skin but not mucous membranes.	Stethoscope; blood pressure cuff; shade guide; bib chain/holder; external portion of a facebow; cameras; mixing spatulas; laboratory knives; rubber mixing bowls; Boley gauges; curing lights; radiograph head/cone	Disinfected or protected with barrier according to MIFU.
Single-Use	Critical and semi-critical devices and instruments that are labelled by their manufacturers to be used only once since they cannot reliably be cleaned, disinfected, or sterilized. Devices that are purchased without MIFUs for reprocessing.	Cotton products; syringe needles; prophylaxis cups/brushes; certain orthodontic brackets Commonly available in single-use form: prophylaxis angles; high-volume suction tips; air/water syringe tips	Not reprocessed.

This table does not include an exhaustive list of examples. Additional situations may be applicable.

Single-Use Devices

Single-use items are those which cannot reliably be cleaned, disinfected, or sterilized. These items are stored in an enclosed space, such as closed or covered cabinets (but not under sinks). They may also be labelled:

- disposable
- consumable
- not for re-use or do not reuse
- discard after a single use
- do not use twice
- with a symbol such as 

Instrument Procurement

Prior to use, all newly purchased reusable instruments/devices are reprocessed unless they are packaged and sterilized by the manufacturer.

Purchasing Considerations

Consider reprocessing requirements when selecting instruments, devices, and equipment. To assist with this, a policy and procedure for selecting and evaluating products before purchase is in place.

Before purchasing reusable medical devices, reprocessing equipment, or reusable wrappers, the oral healthcare setting is provided with validated written manufacturer's information, specific to the item, for:

- intended applications and limitations
- storage instructions before use
- maintenance of sterility and package integrity
- environmental conditions for transport and storage (e.g., temperature and humidity) and measures to be taken if these limits are exceeded
- evidence of sterilization processes used (if the product is purchased as sterile)
- use of the product
- presentation at the point-of-use

The oral healthcare setting can request written evidence of validation studies (e.g., a letter or summary indicating types of tests completed; any standards that are complied with; specific conditions that are validated; and any conditions that are contraindicated) that support the intended use of the instrument/device or product according to MIFU. The evidence may be included in the IPC manual.

Health Canada Approval

Devices not manufactured for medical use are not to be used on patients.

When purchasing a reusable medical device, confirm that:

- it is properly licensed in Canada
- it was procured from a distributor with an establishment license
- it can be reprocessed by the oral healthcare setting

Reprocessing Considerations

When reviewing MIFU, consider the methods and cycles that are available for reprocessing in the oral healthcare setting. If the process specified for sterilization is unavailable in the clinic, the product cannot be used.

Chain of Instrument Reprocessing

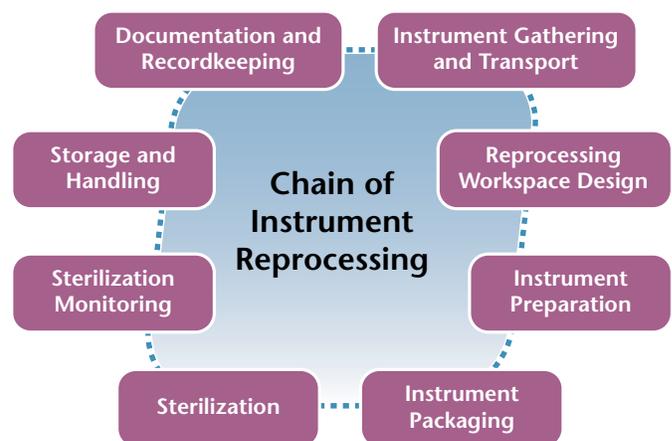
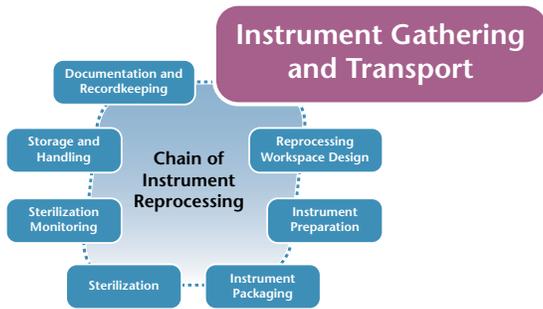


Figure 3: **Chain of Instrument Reprocessing**

Adapted from OSAP-DALE Foundation CDEA® Module. *Establishing a High Quality Instrument Processing Program: General Aspects of Instrument Processing.*



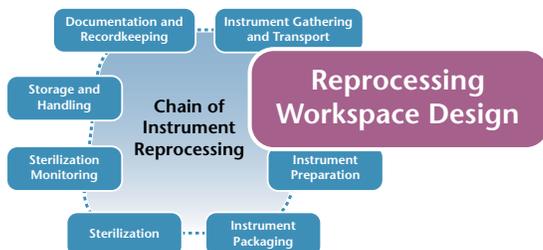
Instrument Gathering and Transport

Instruments/devices are inspected and debris is removed prior to gathering for transporting to the reprocessing area.

Visible debris is removed during patient care to remove materials that are difficult to clean once materials have dried or set on them, such as impression material, composite, and bioburden. Consider appropriate PPE and safe techniques for this task. Review material's MIFU for proper removal.

When transporting contaminated instruments:

- Wear appropriate PPE.
- Isolate and cover instruments. Instruments are placed in an appropriate container at the point-of-use to prevent percutaneous injury during transport.
- Containers are puncture-resistant and leak-proof with solid sides and bottom, and allow for effective decontamination after each use.
- All containers holding contaminated dental devices are labelled as contaminated/dirty to prevent cross-contamination.
- The designated transportation route minimizes exposure to high-traffic and client-care areas and avoids areas designated for the storage of clean or sterile medical devices and supplies.
- Avoid transporting contaminated instruments in a solution.



Reprocessing Workspace Design

The reprocessing area is dedicated to instrument reprocessing and is separated from working, patient care, and

lab areas. The workspace design considers equipment size as well as water, air, and vacuum lines.

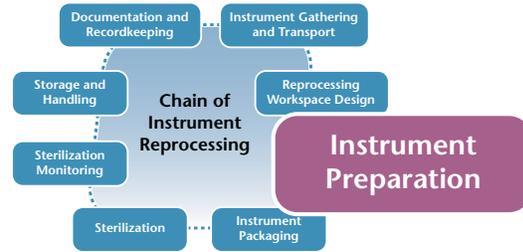
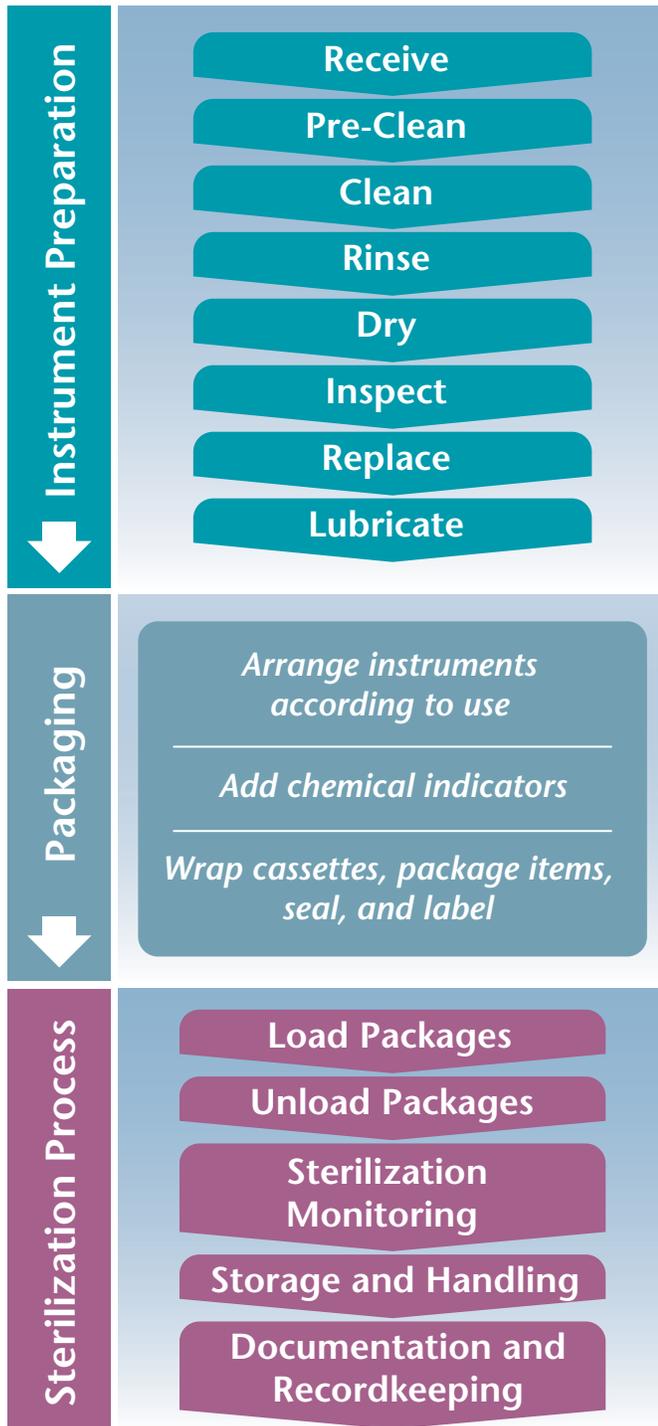
The reprocessing workspace has:

- Adequate space to allow for all reprocessing activities and associated equipment and supplies.
- A one-way path of movement of instruments/devices through the reprocessing process from “dirty” to “sterile.”
- In existing facilities where physical separation (i.e., with walls or partitions) of reprocessing areas is not possible, spatial separation is established.
- Puncture-resistant sharps container available in the receiving area.
- Seamless and smooth, slip-resistant, easily cleaned, and appropriately wear-resistant floor covering.
- Smooth surfaces that are non-porous and that can be cleaned and disinfected easily and effectively.
- Two adjacent designated sinks for cleaning contaminated instruments, large enough to immerse the largest piece of equipment are available. In existing facilities where two adjacent sinks dedicated for cleaning and rinsing are not possible, a dedicated basin for rinsing equipment after cleaning in a dedicated sink is an acceptable alternative. The dedicated basin is large enough to fully submerge the item being rinsed.
- Designated hand hygiene stations (either sink or ABHR dispensers) available at the entrance to and exit from the cleaning area and throughout reprocessing area.
- Adequate ventilation and light.
- A water source which meets the equipment manufacturer's specifications for water and steam quality.
- Covered storage areas for reprocessing supplies, separate from the storage area for sterile packages.
- Dedicated storage area for sterile packages with adequate space to avoid crushing or damage to packaging.

The instrument reprocessing area in all oral healthcare settings is divided into three distinct areas:

1. Instrument preparation
2. Packaging
3. Sterilization process

The workflow pattern is linear and flows only one-way between areas.



Instrument Preparation

Receiving

There is sufficient room in the receiving area to place transport container, to disassemble devices that require disassembly (according to MIFUs), and to open hinged instruments. After hand hygiene is performed at the entrance to this area, protective clothing, utility gloves, eye protection, and mask are donned in the cleaning area.

Pre-Cleaning

When instruments cannot be cleaned before becoming dry, they are kept moist using towels wetted with water, with enzymatic products that assist in cleaning, or by soaking in water or a commercial holding solution following MIFUs specific to both the product and instrument.

All gross soil is removed prior to cleaning to improve cleaning efficacy. This is accomplished by immersing devices that will be cleaned in an ultrasonic cleaner (see Table 6) or manually in a sink filled with water as rinsing under a stream causes excessive splashing and aerosol production. Devices placed into an automated washer also require pre-cleaning using the pre-clean rinse cycle (see Table 7).

Figure 4: **Instrument Reprocessing**

Table 6: **Methods for Pre-Cleaning Instruments and Devices**

Method	Description
Automated	
Ultrasonic cleaners	<ul style="list-style-type: none"> Use a special solution and high-energy sound waves to loosen and break up debris on instruments. Is not overloaded to allow soundwaves to come in contact with all surfaces of every device. Rinse devices to remove gross soil prior to use and rinse thoroughly following cleaning to remove residual soil and cleaning agents. Performance is tested according to MIFU at least weekly or more frequently if MIFU specifies. The ultrasonic detergent solution is changed at least daily or more frequently when visibly soiled or if the ultrasonic cleaner or solution MIFU specifies more frequent changes (e.g., with every cycle). Reduce the OHCP's contact with contaminated items; OHCP is free to perform other tasks while the instruments are being cleaned efficiently and effectively.

Cleaning

Cleaning involves the removal of debris and is critical to reprocessing. Remaining soil serves to protect microorganisms beneath the soil during sterilization. Instruments that are not clean prior to sterilization are not sterile following sterilization. Table 7 shows the methods of cleaning.

Refer to MIFU when determining methods of cleaning:

- For equipment maintenance and quality assurance testing.
- When choosing a holding solution, spray, foam, or gel for keeping instruments moist.
- When disassembly is required as part of the cleaning process.
- For processing of hinged instruments, handpieces, burs, etc.

Reassembly takes place in a clean dry area.

Any body fluids or other visible debris remaining on the instrument/device is cleaned to allow the sterilizing or

disinfecting agent to come in contact with all instrument surfaces. The use of automated cleaning equipment that offers disinfection (check MIFU) can increase productivity, improve cleaning effectiveness, and decrease worker exposure to blood and other body fluids, thus making it safer for the OHCP.

Regardless of the level of automation involved, any detergent or enzymatic cleaning solution used is discarded according to MIFU.

Cleaning Accessories

Cleaning accessories (e.g., long-handled brushes) are disposable or sterilized between uses.

Cleaning accessories are inspected before use to ensure they are not damaged. Damaged cleaning accessories are not used. Reusable cleaning accessories are reprocessed after use in accordance with the MIFU, inspected for damage, and stored in a clean, dry place. Single-use cleaning accessories are discarded following use.

Table 7: **Methods for Cleaning Instruments and Devices**

Method	Description
Automated	
Instrument washers	<ul style="list-style-type: none"> Use high water flow rates and special detergents to safely and efficiently clean instruments. A pre-wash rinse cycle is used when there is a risk of instruments becoming dry while awaiting a full load. Eliminates the need for presoaking, hand scrubbing, rinsing, and drying; minimizes contact with contaminated sharps. Instrument washers used for cleaning shall be used in accordance with MIFU. <p>The performance of the automated cleaning system (e.g., instrument washers) is tested according to specific MIFU each day that it is in use, using commercially available indicators or test kits.</p>

Method	Description
Manual	
Hand scrubbing	<ul style="list-style-type: none"> • OHCP is in close contact with contaminated sharps and contaminated splash and spatter generated during the cleaning process. • Hand scrub instruments only when an automated cleaning process fails to remove stubborn debris. • Clean only two to three instruments at a time. • Scrub instruments immersed in water, using a long-handled or wide-surface brush and a noncorrosive detergent. <p>NOTE: Cleaning equipment (e.g., brush) is, according to MIFUs, cleaned, disinfected, dried, and stored after each use or discarded.</p>

Devices with Lumens

During the sterilization process, steam (the sterilizing agent) has more difficulty penetrating dental devices/instruments with a hollow centre or lumen than it does penetrating one with a solid centre (such as most restorative instruments). Air may become trapped in the lumen and hinder the efficacy for contact by steam on the internal surface of the instrument.

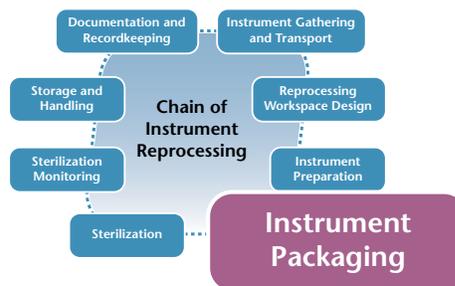
To ensure efficacious cleaning, and ultimately sterilization, of dental devices/instruments with lumens:

- Clean them with a brush while immersed, according to MIFU.
- Manually or mechanically flush them with a detergent solution.
- Perform a final rinse using the quality of water as prescribed by MIFU.
- Dry them with compressed instrument air that has been filtered and free of moisture with a towel over the distal end to prevent aerosolization.
- Inspect using a light source at the distal end to ensure devices/instruments are clean and dry.
- Dental handpieces are considered lumens and although the interior lumen cannot be visually inspected, the inside as well as the outside of handpieces need to be cleaned and the inside lubricated with additional purging on an air line when required by MIFUs.

Rinse, Dry, Inspect, and Lubricate

After cleaning instruments/devices:

- **Rinse.** Thoroughly rinse all dental equipment and devices to remove chemical and detergent residues by submerging in water and being careful to avoid splashes.
- **Dry.** Dry instruments either with an automated process or manually with a clean, lint-free, soft-absorbent towel prior to inspection.
- **Inspect.** Visually inspect instruments to ensure debris is removed and are optimal and safe for use (sharp, operating as intended).
Dental or medical devices that are damaged or in poor working condition are removed from service, labelled, and segregated from usable dental or medical devices. Such dental or medical devices are either repaired or disposed of in accordance with the documented standard operating procedures.
- **Lubricate.** Follow MIFU when applying lubricant to instruments and when considering corrosion reduction processes.



Instrument Packaging

In the oral healthcare setting, reprocessed reusable devices are packaged using pouches or wrappers since packaging is essential to maintaining their sterility and facilitating their aseptic presentation.

During packaging instruments for sterilization, follow applicable MIFU and:

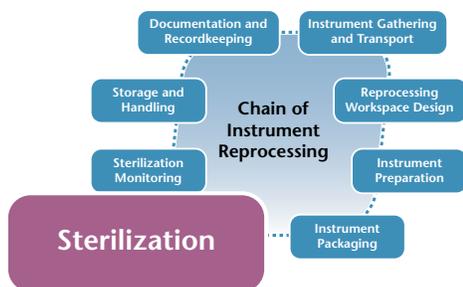
- Arrange instruments according to use (e.g., restorative). Select wrapping and packages according to the size, shape, and weight of instrumentation being processed.
- Place chemical indicators inside each package.
- Examine wrapping and packages prior to use for defects and debris. Check expiry date.
- Avoid overfilling packages.
 - Steam is required to penetrate the package and have contact with all instruments.

- Sterilize all hinged instruments in an unlocked and open position.
- Items are inserted into peel pouches so that the end of the item to be grasped during presentation will be presented first when the package is opened at point-of-use.
- Seal packages (wrapped packages using sterilization tape or self-sealing pouches) to ensure a smooth complete seal. Any seals that are not smooth and flat will be considered a fail and will require repackaging.

Prior to sterilization, place the following information on the transparent side of a plastic/paper pouch or directly on the closure tape of wrapped packages. Use a commercially produced label validated for this purpose or write with a permanent, soft-tipped marker that has been validated for the sterilizer.

The following information is required and is used to trace recalls for quality assurance.

- date processed
- sterilizer used
- cycle or load number
- initials of the OHCP who packaged the instruments



Sterilization

Sterilization is the destruction of all forms of microbial life. Heat-tolerant instruments/devices are sterilized using steam. Instruments/devices are reprocessed between patients according to MIFU. Equipment used for sterilization is approved by Health Canada and installed, operated, cleaned, and maintained according to MIFU.

Loading Packages Into the Sterilizer

When loading packages into the sterilizer chamber:

- Maintain space between wrapped items and the sterilizer wall to reduce risk of damage to wrappers and to provide sufficient space to allow steam penetration to those packages that are adjacent to the chamber walls.

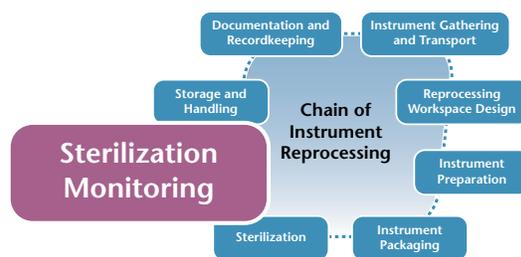
- Follow the sterilizer MIFU for placement of packages that allows for air removal and sterilant penetration and evacuation.

Unloading Packages From the Sterilizer

When unloading packages from the sterilizer chamber:

- Allow instruments to fully dry when using steam sterilization.
- Ensure there is no moisture or droplets in the chamber or on the packages. Packages that have any moisture are not considered sterile and require repackaging and reprocessing.
- Allow sterile packages to cool to room temperature before handling.
- Inspect packages for:
 - presence of a label
 - package integrity
 - dryness
 - the correct change in an external chemical indicator
 - an intact seal
 - evidence of potential contamination

Confidence and evidence of a successful sterilizing process is required prior to releasing instrumentation for patient use. If a package does not meet the inspection criteria, the contents are not used.



Sterilization Monitoring

Validate all sterilization procedures prior to instrument/device use. All results are logged, evaluated after each cycle to allow release, signed by the person responsible, and kept for long as required by applicable legislation or regulatory guidance. Although the OHCP ensures proper protocols are followed and the procedures are recorded to track batches, sterilization monitoring is a key element of the sterility assurance program since it cannot be assumed sterilization has been achieved without monitoring and provides the assurance of patient safety.

Procedures for monitoring sterilization include a combination of products and techniques that evaluate sterilizing conditions. The effectiveness of the procedure and proper sterilizer functioning is monitored by mechanical (physical), chemical, and biological techniques/indicators. Follow MIFU for all equipment and indicators when assessing effectiveness.

The OHCP ensures that the equipment and processes align with Alberta Health requirements.

Mechanical (Physical), Chemical, and Biological Indicators

1. Mechanical (Physical) Indicators

Mechanical (physical) indicators (MI) are the gauges or displays on the sterilizer that measure physical parameters, such as cycle time, temperature, and pressure. Sterilizers are routinely equipped with printers and electronic data recorders and are checked following each load to ensure that correct parameters are met.

Readings that indicate the required time, temperature, and pressure have been reached do not ensure a successful sterilization; therefore, chemical and biological testing are also used. Any unacceptable readings are investigated and contents of the load are not released.

2. Chemical Indicators

Chemical indicators (CI) are devices that respond with a chemical or physical change (e.g., heat-sensitive tape, applied to the outside of a package, changes colour rapidly when a given temperature is reached) when exposed to the steam. A pass response indicates that certain conditions were achieved at the location of the chemical indicator—not that devices in the chamber are sterile. Chemical indicators are either external or internal.

- **External indicators** indicate exposure to a process and are used to distinguish between a processed and unprocessed package. Each package has an externally visible Type 1 indicator. External indicators are checked immediately upon opening the sterilizer, when unloading the sterilizer, when transporting to storage, and when transporting to patient care.
- **Internal indicators** are intended to respond to one or more chemical or physical changes and are placed in each package that is undergoing sterilization in the area least accessible to steam penetration. A Type 5 or 6 internal chemical indicator is placed inside each package because these both react to all critical process variables.

When an internal Type 4 indicator is used, the load is not released until the results of the BI are available.

Table 8 shows the six types of chemical indicators, each with a specific use.

Table 8: **Types of Chemical Indicators**

Type	Description	Action Required
1 Process Indicator	Used to differentiate processed from non-processed items	<ul style="list-style-type: none"> • Responds to one or more critical process variables • Provides instant results and visual evidence that the packages were exposed to a sterilant • Placed or is integral to the outside of every package that is sterilized <ul style="list-style-type: none"> ○ e.g., peel back pouches usually have a chemical indicator manufactured on the paper side of the package and chemical indicator tape is also available
2 Specific Test Indicator	Used in specific tests or procedures to evaluate sterilizer performance Its purpose is to evaluate proper air removal from the sterilizer	<ul style="list-style-type: none"> • To be used with dynamic air removal (pre-vacuum) sterilizer • Performed each day the sterilizer is used • e.g., Bowie-Dick Test
3 Single Variable Indicator	Reacts to a single critical process variable (e.g., temperature or time)	<ul style="list-style-type: none"> • Exposure control monitoring in a specific location • Rarely used in oral healthcare settings • e.g., Autoclave tape

Table 8: **Types of Chemical Indicators** (continued)

4	Multi-Variable Indicator	Reacts to two or more critical variables in the sterilization cycle Manufacturer specifies the conditions under which the parameters are met	<ul style="list-style-type: none"> • May be used for process control • e.g., Indicator strips
5	Integrating Indicator	Responds to all critical variables in the sterilization process (e.g., time, temperature, presence of steam)	<ul style="list-style-type: none"> • Used as an internal CI process control • Responds to all critical variables in the same way that a BI responds • Used as an additional monitoring tool to release loads that do not contain implants • e.g., Indicator strips
6	Emulating Indicator	Reacts to all critical variables (time, temperature, and presence of steam) for a specified sterilization cycle (e.g., 10 min, 18 min, 40 min)	<ul style="list-style-type: none"> • Used as an internal CI process control • A different Type 6 emulating indicator is required for each sterilization cycle time and temperature used • May be used as an additional monitoring tool to release loads that do not contain implants

Adapted from Public Health Ontario.

3. Biological Indicators

Biological indicators (BI), also known as spore tests, use viable microorganisms (e.g., spore-laden strips or vials) to test sterilizer efficacy. Spore tests are the most accepted means for monitoring sterilization because spores are the most difficult microorganisms to kill. When choosing a BI spore test, the microorganism used to test is compatible with the sterilization process being used. For example, *Geobacillus stearothermophilus* is the best microorganism to use to test efficacy of steam sterilization. A passed BI indicates that live spores have been killed and therefore indicates that conditions and parameters were met to effect kill to all other microorganisms. BI testing is done each day a sterilizer is used and with each type of cycle.

Process Challenge Devices

A process challenge device (PCD), also known as a biological test pack, is used as a key component in sterility quality assurance since it monitors the performance of the sterilization process each day. To test the sterilizer's performance, a PCD simulates an equal or greater challenge than the most difficult instrument/device set routinely processed. PCDs can be created in-office with a diverse grouping of instrumentation or with a commercially validated PCD. The PCD is placed according to sterilizer MIFU and in the area of the chamber that creates the highest likelihood of sterilization failure.

Three commonly used types of PCDs:

1. Air removal/Bowie-Dick PCD test pack
2. Biological indicator PCD test pack
3. Chemical indicator PCD test pack

Air removal/Bowie-Dick testing evaluates the performance of pre-vacuum sterilizers by confirming adequate air removal from the sterilizer's chamber. Air left in a sterilizing chamber can act like a shield between the steam and the item being reprocessed, which potentially prevents proper sterilization.

PCDs can be commercially manufactured or prepared in-house. A PCD presents a challenge to the process that is equal to or greater than the challenge posed by the most difficult item that is routinely sterilized. A biological test pack is an example of a PCD.

Process Challenge Device Use

First Reprocessing Cycle of the Day

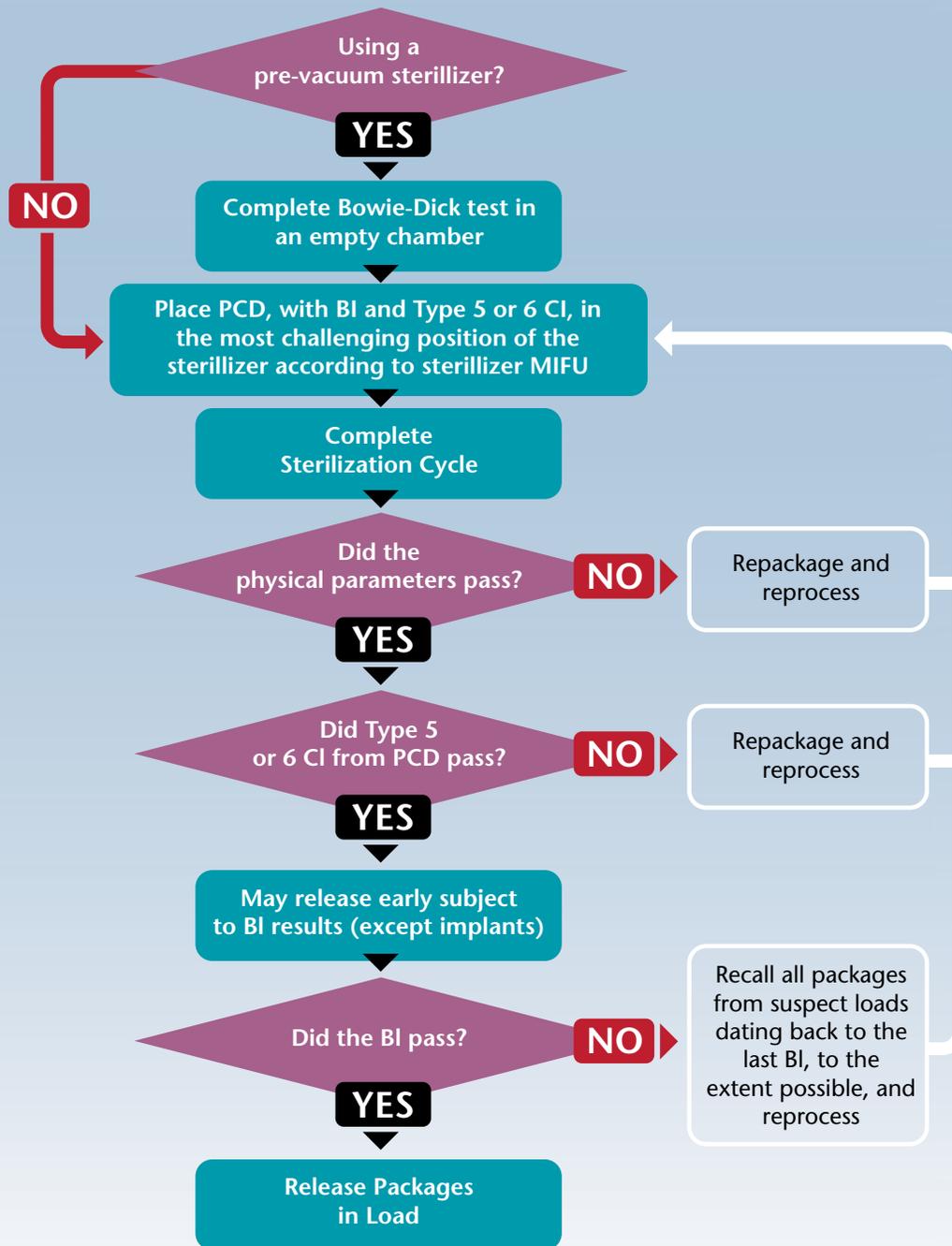


Figure 5: **Process Challenge Device Use: First Reprocessing Cycle of the Day**

Table 9: **Sterilization Monitoring**

	Mechanical Indicator (MI)	Chemical Indicator (CI)	Biological Indicator (BI)
When to monitor?	<ul style="list-style-type: none"> • Every sterilization load 	<ul style="list-style-type: none"> • Every instrument package 	<ul style="list-style-type: none"> • Daily for each type of cycle used (BI placed in PCD) • For all loads containing implantable devices (BI placed in PCD)
Why it is monitored?	<ul style="list-style-type: none"> • To detect sterilizer malfunction 	<ul style="list-style-type: none"> • To detect sterilizer malfunction • To identify processed from unprocessed items 	<ul style="list-style-type: none"> • To measure that live spores have been killed • Directly measures sterilization process • Successful BI allows for release of all packages
<p>Note: Mechanical and chemical indicators do not ensure that sterilization has been achieved. They merely offer verification that the necessary conditions have been met for sterilization.</p>			
How to monitor?	<ul style="list-style-type: none"> • Examine temperature record charts and computer printouts; visually observe gauge readings; and assess pressure via the pressure gauge. Record and store findings. • Pre-vacuum air removal sterilizers require an air removal test according to MIFU • Record results 	<ul style="list-style-type: none"> • Observe colour change for external CI • Observe colour change for internal CI • Record results 	<ol style="list-style-type: none"> 1. Subject a test biological indicator (spore test) to a normal sterilization cycle for the type of sterilizer being challenged daily and in a fully loaded sterilizer 2. Incubate the test strip/vial alongside a control spore strip/vial from the same lot that has not been placed into the sterilizer 3. If the test BI yields no growth and the accompanying control shows positive growth, it implies that the sterilization process killed the spores 4. Record results
What if it is successful?	<ul style="list-style-type: none"> • Items are quarantined until the BI results are available (if using Type 4), or released if parameters were reached and Type 5 or 6 CI has been placed in each package 	<ul style="list-style-type: none"> • Items are quarantined until the BI results are available (if using Type 4), or released if parameters were reached and Type 5 or 6 CI has been placed in each package 	<ul style="list-style-type: none"> • Quarantined items can be released
What if it fails?	<ul style="list-style-type: none"> • Indicates inadequate processing • Items require successful reprocessing before use 	<ul style="list-style-type: none"> • Indicates inadequate processing • Items require successful reprocessing before use 	<ul style="list-style-type: none"> • Indicates inadequate processing • Quarantine the packages that have been processed since the last successful BI • Initiate steps for failed BI

Failures and Recalls

A sterilization process failure may be identified in a number of ways, including:

- mechanical failure of the sterilizer (e.g., inadequate temperature, exposure time, and steam pressure)
- incubated BI is positive; BI not included in load containing implant
- internal and/or external chemical indicator did not change, that is, showed inadequate processing
- packs are found to be wet after adequate drying time (follow MIFU to ensure completion of sterilization process)
- instruments are damaged, stained, burnt, or still contaminated with debris
- printouts are missing
- load records do not match sterilizer printout
- sterilized instruments placed on contaminated surface
- equipment failure

If there is a sterilization process failure, notify the IPC officer to investigate the failure and manage the recall. The OHCP has a recall process in place to address recalled items to ensure appropriate reprocessing and patient notification for those impacted by the recall. When a recall occurs, it is documented, including:

- any information that may help to identify the cause of sterilization error
- the process/protocol that was used in the office to remedy the problem
- patient notification procedures, as applicable

Documenting the Sterilizer Process

Maintain a sterilizer process logbook that documents each load sterilized. The logbook's information is needed in case of a recall.

The logbook includes:

- load number
- date of the load
- time cycle started
- cycle parameters (total time of cycle, pressure, and temperature reached)
- load contents
- internal and external chemical indicator results
- results of PCD indicators (e.g., CI, BI)

Qualifying and Requalifying the Sterilizer

Sterilizers are rigorously qualified and requalified according to the conditions shown in Table 10. Test loads are used to ensure the sterilizer is functioning properly in both cases. Installation qualification and operational requalification are performed and documented according to MIFU.

Table 10: **Sterilization Qualifying and Requalifying**

Sterilizer	Qualifying and Requalifying Conditions
When to qualify?	<ul style="list-style-type: none">• After the purchase and installation of a new sterilizer or loaner sterilizer
When to requalify?	<ul style="list-style-type: none">• Annually• After disruptions to the sterilizer's normal activity• After construction or other environmental changes in the area• After relocating the sterilizer• After the sterilizer is repaired or modified• After a power failure• After an unexplained sterility failure• For steam sterilizers, after any disruption to the steam supply or change to steam pressures

Sterilizers are rigorously qualified on installation and requalified following disruptions to their normal activity. They are installed according to MIFU by a qualified technician and pass three consecutive cycles with the appropriate Bowie-Dick (if required), and three BI PCDs placed in three additional empty loads. Finally, the sterilizer is qualified with at least one full BI PCD test load, before the sterilizer can be put into routine service. A sterilizer is not approved for use if any indicator(s) yield a failed test on any of the tests conducted for the purposes of qualifying or requalifying the sterilizer.

Installation qualification and operational requalification requirements include:

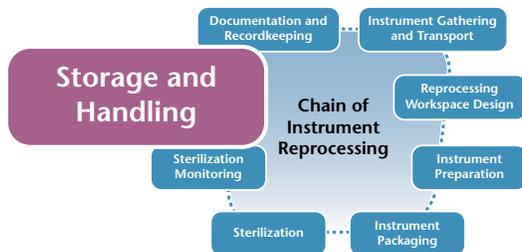
- verification of each cycle used according to MIFU
- running three successful consecutive cycles in an empty chamber using PCDs with BI Indicators (as stated in MIFU)
 - o for table-top steam sterilizers, testing will take place in a fully loaded chamber

- in dynamic air removal sterilizers using pre-vacuum cycles, ensuring the sterilizer meets the requirements of an air removal test and leak-rate test and is tested with three consecutive air removal tests (Bowie-Dick) (according to MIFU) in an otherwise empty chamber

Performance refers to the daily, ongoing tasks required by MIFU. Performance qualification ensures setting-specific packages (packages that need to be processed at a particular setting) and loads can be sterilized. OHCPs ensure:

- Products and loads are assembled according to sterilizer MIFU.
- Any limitations of validated devices, materials, and other items are adhered to.
- New materials including packaging, processes, or conditions that could affect sterilization are run through a performance qualification.

A sterilizer is not approved for use if any indicator yields a failed test on any of the tests conducted for the purposes of qualifying or requalifying the sterilizer.

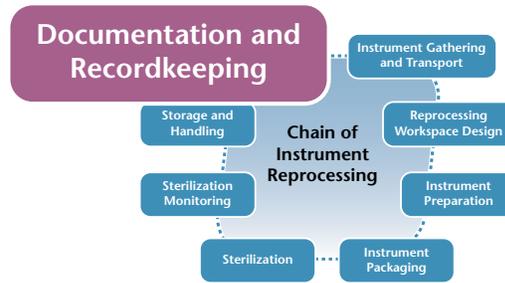


Storage and Handling

The storage and handling of sterilized instruments is the final step prior to instrumentation use. The chain of instrument reprocessing depends on the success of this step. The sterilized instrumentation is stored in such a way that maintains the integrity of the sterilized packages.

- Store instruments in an enclosed clean, dry, dust-free area that is well-separated from soiled items/areas by barriers or distance.
- Supplies are removed from corrugated and original shipping packaging. Removal occurs outside clean and sterile environments.
- Handle sterile packages minimally before use.
- Before using a packaged instrument, check the integrity of the pack.

- Visually inspect for discoloration, dampness, dust, soil, and tears. If any are present, send for reprocessing.
- Verify results of external and internal monitors. If results of external or internal monitors indicate conditions were not met for sterilization (e.g., no change in colour), return packages for reprocessing (all the steps will be performed as if the devices had been used for patient care).



Documentation and Recordkeeping

Recordkeeping involved in the sterilization process includes:

- maintenance and repairs performed on all equipment used to sterilize instruments
- quality assurance tests for ultrasonic cleaners and automated washers and washer/disinfectors (refer to MIFU)
- procedures and results used to confirm proper functioning of all sterilizers (mechanical, chemical, and biological indicators)
- sterilization load logs
- quality assurance records including audits
- documentation of staff training
- documentation of the commissioning and decommissioning of equipment
- load details for instruments used are recorded in the patient's chart in case of recall

Immediate-Use Steam Sterilization (IUSS)

Immediate-use (or “flash”) steam sterilization is a modification of the conventional steam sterilization process designed and used for the emergency sterilization of unpackaged instruments when routine sterilization cannot be done. The disadvantage of this method is that unwrapped instruments are no longer sterile once they are removed from the sterilizer.

Sterilization is a process not an event. Operative scheduling and lack of instrumentation do not qualify as reasons to use the immediate-use sterilization method.

Comply with the following requirements for immediate-use sterilization:

- A log is kept of pertinent information when this method is used including:
 - date and time of cycle
 - patient name, procedure, instrument used, and rationale for use
 - contents of the load
 - confirmation that all physical parameters were met
- Instruments are cleaned and dried prior to sterilization.
- Every cycle is monitored using the appropriate indicators.
- Care is taken to prevent contamination of instruments prior to use.

IX. SPECIAL CIRCUMSTANCES

OHCPs are prepared to adapt their practice to address unforeseen events by following IPC principles and regulatory guidance.

Boil Water Advisory

A Boil Water Advisory (BWA) is issued when the municipally-delivered water is unsafe to drink or use in any dental treatment or procedure, including hand hygiene and reprocessing. A BWA may arise from a disruption in the integrity of the water system (e.g., water-main break; water treatment issues) or environmental disasters, whether natural or man-made. Consult with the public health authority in the location of the oral health-care setting for information on advisories and for further measures.

Pandemic Management

Pandemic, in medical terms, is a term used to describe a widespread epidemic of a disease that affects a large population (e.g., municipal, national, global). A pandemic is an international health concern and as such, international organizations and federal, provincial, and local governmental agencies will work together to provide maximum possible response to the posed threat.

The following are key organizations that would be involved for Albertans:

- World Health Organization
- Health Canada
- Alberta Health and AHS
- Municipal governments
- Professional regulators

Regulated health professionals, including OHCPs, provide services to a wide range of age groups, in private clinics, laboratories, medical facilities, nursing homes, assisted living accommodations, and individual homes. During a pandemic, OHCPs will possibly be at increased risk of exposure to the pathogen and subsequent infection. Further, these OHCPs will have the potential to exacerbate the pandemic through community transmission.

Pandemic Practice Considerations

In order that appropriate authorities may contain the spread as much as possible, all Albertans have a role to play. As a regulated healthcare professional, the OHCP has a greater responsibility by virtue of the nature of the work and the increased risk inherent within it. To be cautious, yet responsible for positive outcomes, the OHCP considers the following factors.

Provider and Staff Education

All employers and staff are required to be aware of any Chief Medical Officer of Health (CMOH) Orders which may influence who may work and when, depending on the nature of the pandemic and individual circumstances.

All oral healthcare settings are expected to develop and implement policies and procedures specific to the setting's pandemic plan.

For clarity on the information provided in this document, regulated members are encouraged to contact their regulatory College for accurate and current information.

Information for Staff

- Encourage staff to keep up to date with pandemic information and available supports.
- Ensure all staff is familiar with any regulatory guidance in place.
- Notify staff about the steps being taken to reduce the transmission of the pathogen and the importance of their roles in these measures.
- Adherence to any travel advisories is enforced.
- Post information regarding how to limit the spread of infection (including OHS, physical environment, and other considerations [see next sections]) in places easily seen by staff—entrances, public/shared washrooms, and treatment areas/operators.
- When possible, provide information in the languages preferred by staff.

Occupational Health and Safety

The information contained in this document is not intended to exempt employers from existing occupational health and safety (OHS) requirements. Direct OHS questions related to the applicable legislation to the OHS Contact Centre [online](#) or by phone (toll-free 1.866.415.8690; 780.415.8690 [Edmonton]).

Physical Environment

- Maintain adequate supply hand hygiene, cleaning products, and other supplies.
- Follow MIFU on difficult-to-clean items or consult with AHS IPC.
- Observe ministerial and public health orders and instructions given to manage the transmission within the work environment.

Other Considerations

- Ensure that there is an up-to-date contact list for all staff.
- For the purposes of public health tracing of close contacts, employers need to be able to provide:
 - roles and positions of staff
 - who was working on site at any given time
 - names of patients in the workplace by date and time
 - names of staff members who worked on any given shift
- When sending an intraoral appliance to a dental technologist, it is strongly requested that information regarding the patient's screening is communicated to the technologist.
- PPE is selected with respect to the practice situation and in accordance with government and regulatory guidance.

Regulatory Guidance

In the event of pandemic, the regulatory body will work closely with Alberta Health and other applicable authorities to ensure that Albertans receive safe, effective, and ethical healthcare. In this, each College will develop and disseminate guidance documents specific to the area of practice and the pathogen eliciting the pandemic.

The information in this document will be shared with all OHCPs, including details about patient screening, patient and staff precautions, personal protective equipment specific to the pandemic, and impacted clinical or laboratory procedures. It is imperative—at all times, but especially during a pandemic—that the regulated members and the regulators work cohesively and respectfully to ensure safety of all involved.

GLOSSARY

Accountable	An obligation or willingness to accept responsibility for one's actions.
Aerosols	Droplet nuclei ranging in size from 1 – 5 µm that are generated by both humans and environmental sources that can transport over long distances, and remain viable and airborne for extended periods. They are commonly generated in oral healthcare settings during use of handpieces, ultrasonic scalers, and air/water syringes.
Aerosol-generating procedure	An activity that creates either fine, solid, particulate matter, or liquid droplets in the air.
Alcohol-based hand rub	An alcohol-containing product designed for application to the hands to reduce the number of viable microorganisms on the hands; in healthcare settings, products contain 60% to 90% alcohol and have a DIN or NPN; also known as ABHR.
Additional precautions	Precautions based on the mode of transmission for the pathogen in question and are always in addition to routine practices . Additional precautions are intended to be used with patients who have been or are suspected of being infected or colonized by highly transmissible pathogenic agents, or are deemed to be a high epidemiological risk, in order to prevent transmission in the workplace.
Airborne precautions	Additional IPC precautions put in place when the infectious agent is transmitted through the air (e.g., tuberculosis).
Asepsis	The absence of pathogenic (i.e., disease-producing) microorganisms.
Aseptic technique	Practices that minimize the risk of microbial contamination.
Barrier	An obstacle or obstruction that resists the penetration of microorganisms.
Biological indicator	A test system containing viable bacterial spores providing a defined resistance to a specified sterilization process.
Biomedical waste (contaminated)	Contaminated biomedical waste that is non-hazardous and may be disposed of in general waste to the landfill.
Biomedical waste (infectious)	Contaminated, infectious waste from an oral healthcare setting that requires treatment prior to disposal in landfill. Biomedical waste includes human anatomical waste; human liquid blood and blood products; items contaminated with blood or blood products that would release liquid or semi-liquid blood if compressed; body fluids visibly contaminated with blood; body fluids removed in the course of surgery; sharps; and broken glass that has come into contact with blood or body fluid.
Chemical indicator	A test system that reveals a change in one or more predefined process variables based on a chemical or physical change resulting from exposure to the process.
Cleaning	The removal of contamination from an item to render it visually free of soil and quantified as below specified levels of the substance to be measured; the removal of contamination from an item to the extent necessary for its further processing and its intended subsequent use.
Clinical area	Any area where professional services (e.g., patient care area, reprocessing, laboratory) are provided.
Clinical surface	A surface likely to be contaminated with blood and body fluids through direct spray, spatter, contaminated instruments, or from the OHCP's gloved hands.
Competent	In relation to a person, means adequately qualified, suitably trained, and with sufficient experience to safely perform work without supervision or with only a minimal degree of supervision.
Contact precautions	Additional IPC precautions put into place when an infectious agent is transmitted through direct or indirect contact with surfaces (e.g., patient, OHCP, fomite). Examples include methicillin-resistant <i>staphylococcus aureus</i> (MRSA), vancomycin-resistant enterococcus (VRE).
Contact time	The defined time for which surfaces are exposed to a chemical to achieve the appropriate level of disinfection.
Critical medical device	A medical device that enters sterile tissues, including the vascular system.
Decontamination	The process of cleaning, followed by the inactivation of pathogenic microorganisms, to render an object safe for handling, use, or disposal.

Dental device	A reusable medical device that is intended for surgical or dental use. The term medical devices and instruments, as defined in the <i>Food and Drugs Act</i> , covers a wide range of health or medical instruments used in the treatment, mitigation, diagnosis, or prevention of a disease or abnormal physical condition.
Designated	Pertains to being dedicated to one purpose (e.g., a designated hand hygiene sink is dedicated for the purpose of handwashing only).
Detergent	A synthetic cleansing agent that can emulsify oil and suspend soil.
Detergent (enzymatic)	A formulated pre-cleaning agent that contains enzymes that break down proteins such as blood, body fluids, secretions, and excretions from surfaces and equipment. Most enzymatic detergents also contain a surfactant and are used to loosen and dissolve organic substances prior to cleaning.
Device	See medical device
Disinfectant	A chemical agent used on inert surfaces to destroy, inactivate, or inhibit the growth of disease carrying microorganisms, but not necessarily all microbial forms (e.g., bacterial spores); chemicals used for disinfection, including high-level disinfectant, intermediate-level disinfectant, and low-level disinfectant.
Disinfection	A process that kills the majority of pathogenic microorganisms, but not necessarily the resistant bacteria spores; the process to inactivate viable microorganisms to a level previously specified as being appropriate for a defined purpose (see definitions for high-level disinfection , intermediate-level disinfection , and low-level disinfection). Objects are cleaned thoroughly before effective disinfection can take place.
Doff	Removal of clothing (e.g., personal protective equipment).
Don	Putting on clothing (e.g., personal protective equipment).
Droplets	Particles (greater than or equal to 5 µm) projected over a short distance (less than 1 metre) when a person speaks, coughs, sneezes.
Droplet precautions	Additional IPC precautions that are implemented when the infectious agent is transmitted through droplets (e.g., blood, saliva, nasopharyngeal secretions).
Drug identification number	An eight-digit numerical code assigned to each drug product marketed under the Canadian <i>Food and Drugs Act</i> and Regulations; identifies the following product characteristics: <ul style="list-style-type: none"> • manufacturer • brand name • medicinal ingredient(s) • strength of medicinal ingredient(s) • pharmaceutical form • route of administration
Hand hygiene	Handwashing, hand antisepsis, or other actions taken to maintain healthy hands and fingernails.
High-level disinfection	A process capable of killing vegetative bacteria, mycobacteria (including <i>Mycobacterium tuberculosis</i>), fungi, and lipid and nonlipid viruses, as well as some, but not necessarily high numbers of, bacterial spores.
Housekeeping surfaces	Surfaces where there is minimal risk of microorganism transmission in these areas since they typically do not come into contact with blood and saliva.
Immunization	The process by which an individual's immune system becomes fortified against an agent through various techniques, most commonly vaccination.
Infection prevention and control	The discipline concerned with preventing healthcare associated infection.
Infectious agent	A microorganism, parasite, or other type of biological agent likely to cause infection in its host. It has the ability to damage human health in various ways, from simple reactions to serious medical conditions, even death. Also known as "pathogenic agent."
Intermediate-level disinfection	A process capable of killing vegetative bacteria, mycobacteria (including <i>Mycobacterium tuberculosis</i>), fungi, and lipid and nonlipid viruses.

Installation qualification (IQ)	The process of obtaining and documenting evidence that equipment has been provided and installed according to its specification.
Instrument	<p>Any device, 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:</p> <ul style="list-style-type: none"> • 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 • control of conception, and that does not achieve its principal intended purpose in or on the human body by pharmacological, immunological, or metabolic means, but that can be assisted in its function by such means • Notes: <ol style="list-style-type: none"> 1. For the purpose of clarity and in alignment with the definitions of (medical) devices in the federal <i>Food and Drugs Act</i> and the <i>Medical Devices Regulations</i>, dental devices are considered medical devices. 2. For the purposes of these Guidelines, foot care devices are considered medical devices. 3. Under the <i>Medical Devices Regulations</i>, Health Canada licenses high-level disinfectants and sterilants used in the reprocessing of medical devices as medical devices. However, in the context of these Guidelines, the term “medical device” does not include high-level disinfectants and sterilants. <i>Adapted from CSA Z314-18, p. 28 and Health Canada’s Medical Devices Regulations.</i>
Items	Include incoming cases including dental burst. prostheses, impressions, orthodontic appliances, and other prosthodontic materials (e.g., Occlusal rims, temporary prostheses, bite registrations, extracted teeth).
Low-level disinfection	A process capable of killing most vegetative bacteria and some fungi, as well as enveloped (lipid) viruses (e.g., influenza, hepatitis B and C, and HIV) but does not kill mycobacteria, non-enveloped viruses or bacterial spores.
Mechanical indicator	Are the gauges or displays on the sterilizer (for cycle time, temperature and pressure) that measure physical parameters (time, temperature, and pressure).
Medical device	<p>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:</p> <ul style="list-style-type: none"> • 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 • control of conception, and that does not achieve its principal intended purpose in or on the human body by pharmacological, immunological, or metabolic means, but that can be assisted in its function by such means • Notes: <ol style="list-style-type: none"> 1. For the purpose of clarity and in alignment with the definitions of (medical) devices in the federal <i>Food and Drugs Act</i> and the <i>Medical Devices Regulations</i>, dental devices are considered medical devices. 2. For the purposes of these Guidelines, foot care devices are considered medical devices. 3. Under the <i>Medical Devices Regulations</i>, Health Canada licenses high-level disinfectants and sterilants used in the reprocessing of medical devices as medical devices. However, in the context of these Guidelines, the term “medical device” does not include high-level disinfectants and sterilants. <i>Adapted from CSA Z314-18, p. 28 and Health Canada’s Medical Devices Regulations.</i>
Microorganisms	Living organisms of microscopic size; the term is generally used to refer to bacteria, fungi, viruses, and bacterial spores.

MIFU	<p>Manufacturer's instructions for use (MIFU). The validated, written directions provided by the manufacturer or distributor of a medical device or product, that contains the necessary information for the safe and effective use of the medical device or product. <i>Source: CSA Z314-18, p. 28.</i></p> <p>The term MIFU may also be used to refer to written instructions for use developed internally or by a commercial preprocessor, that have been validated by an approved laboratory. <i>Source: https://open.alberta.ca/dataset/fd371ac2-b2be-49ac-93ef-43865a0bc0fb/resource/56c1cd3c-b617-4d91-947d-3e0e-4a68cd09/download/health-reusable-single-use-medical-devices-standards.pdf</i></p>
Non-clinical area	An area where professional services are not being provided (e.g., reception, washroom).
One-way workflow	The practice of ensuring that reprocessing work flows in one direction, from the dirtiest to cleanest. One-way workflow ensures that each level of reprocessing, including cleaning, disinfection, and sterilization, incrementally reduces the microbial load on medical devices being reprocessed. One-way workflow prevents contamination that would occur if items processed to a higher level came into contact with a lower level processed medical device or processing areas.
Operational qualification (OQ)	The process of obtaining and documenting evidence that installed equipment operates within predetermined limits when used in accordance with its operational procedures.
Oral healthcare professional (OHCP)	For the purposes of this document, regulated members of the College of Alberta Dental Assistants, College of Alberta Denturists, College of Dental Technologists of Alberta, and the Alberta College of Dental Hygienists.
Oral healthcare setting	A setting in which professional services are provided or completed by an oral healthcare professional (e.g., operatory, laboratory, reprocessing area). Also referred to as practice setting.
Packaging	<p>A step in the sterilization process in which a medical device is enclosed in materials or a container designed to:</p> <ul style="list-style-type: none"> • Allow the penetration and removal of the sterilant during sterilization; and • Protect the device from contamination and other damage following sterilization and until the time of use.
Percutaneous	Percutaneous transmission refers to exposure through any break in intact skin, whether from sharps injury (such as from needles, stylets, or surgical blades) or other types of tissue trauma.
Performance qualification (PQ)	The process of obtaining and documenting evidence that the equipment, as installed and operated according to operational procedures, consistently performs according to predetermined criteria and thereby yields product meeting its specification.
Physical indicator	See mechanical indicator .
Patient	An individual receiving professional services from the OHCP; this person may also be referred to as a client in specific Colleges' standards of practice.
Personal protective equipment	Known as PPE. Specialized clothing or equipment worn by an employee for protection against hazards.
Point-of-care	The place where three elements occur together: the patient, the healthcare provider, and care or treatment involving patient contact.
Point-of-use	The place where or the time when a product or service is used.
Practice setting	A setting in which professional services are provided by an oral healthcare professional. Also referred to as oral healthcare setting.
Procurement	The purchase of reusable medical devices, reprocessing equipment, and supplies.
Prion	A protein particle that lacks nucleic acid and has been implicated as the cause of various neurodegenerative diseases (e.g., Creutzfeldt-Jakob disease, bovine spongiform encephalopathy). It is a pathogenic form of a neural protein that is both less soluble and more resistant to enzyme degradation than the normal form.
Prosthesis	An artificial replacement of part of the human anatomy restoring form, function, and esthetics.
Responsible	An obligation to do something as part of one's job or role.
Risk assessment	Identification of the situations or activities that may cause a risk to the patient or staff.

Routine practices	The approach to infection control used to minimize or prevent exposure to microorganisms in healthcare settings (e.g., blood and body fluid, secretions, and excretions from all patients).
Sharps	Pointed, sharp, or cutting devices.
Spatter	Visible drops of liquid or body fluid that are expelled forcibly into the air and settle out quickly, as distinguished from particles of an aerosol, which remain airborne indefinitely.
Spaulding's Classification	An instrument classification system to determine the cleaning, disinfection, and sterilization requirements.
Ultrasonic cleaner	A machine that cleans medical devices by the cavitation produced by ultrasound waves.
Validate	The documented procedure for obtaining, recording, and interpreting the results required to establish that a process will consistently yield product complying with predetermined specifications (ISO 11139-18).
Washer-disinfector	A machine intended to clean and disinfect medical devices and other articles used in the context of medical, dental, pharmaceutical, and veterinary practices.

ACRONYMS

°C	degrees Celsius
ABHR	alcohol-based hand rub
ACDH	Alberta College of Dental Hygienists
AHS	Alberta Health Services
BI	biological indicator
BWA	boil water advisory
CAD	College of Alberta Denturists
CADA	College of Alberta Dental Assistants
CDSA	College of Dental Surgeons of Alberta
CDTA	College of Dental Technologists of Alberta
CI	chemical indicator
CMOH	Chief Medical Officer of Health
CSA	Canadian Standards Association
DIN	drug identification number
DUWL	dental unit waterline
HBV	hepatitis B virus
HCV	hepatitis C virus
HEPA	high-efficiency particulate air
HIV	human immunodeficiency virus
HLD	high-level disinfectant
HPA	<i>Health Professions Act</i>
HS	health & safety
HSC	health & safety committee
ILD	intermediate-level disinfectant
IPC	infection prevention and control
IV	intravenous
LLD	low-level disinfectant
MI	mechanical indicator
MIFU	manufacturer's instructions for use
min	minute
mm	millimetre
NPN	natural product number
OHCP	oral healthcare professional
OHS	occupational health and safety
PCD	process challenge device
PCRA	point-of-care risk assessment
PPE	personal protective equipment
SDS	safety data sheets
SES	safety-engineered syringe
TB	tuberculosis
WHMIS	workplace hazardous materials information system

Appendix A: IPC Strategies

An understanding of the principles of infection prevention and control allows an OHCP to have the knowledge to competently provide treatment to their patients. There are four basic strategies that can guide the OHCP in keeping both them and their patients safe.

1. Take Action to Stay Healthy

Taking preventive health measures for the OHCP is the first step in protecting the patient. Three things for the OHCP to consider for staying healthy are:

- getting immunized
- reporting occupational injuries and exposure immediately
- following the advice of the medical provider evaluating their occupational exposure

2. Avoid Contact with Blood and Body Fluids

Factors that enhance the OHCP's ability to avoid contact with blood and body fluids include:

- access to appropriate PPE
- advances in the knowledge of proper sharps handling
- ability to use safety devices
- mechanical devices that clean instruments

3. Limit the Spread of Blood and Body Fluid Contamination

There are habitual methods of limiting the spread of blood and body fluid contamination. Some examples of the OHCP's daily habits include:

- operatory preparation using disinfecting and barrier techniques
- using unit dose supplies
- minimizing spatter through supports such as high-volume evacuation
- applying proper waste disposal methods

4. Make Objects Safe for Use

Daily habits limit the spread of blood and body fluid; however, surfaces still become contaminated during patient treatment. To make objects safe for use, the OHCP needs to include:

- decontamination and reprocessing
- understanding and implementing MIFU and SDS
- employing a Quality Assurance Program

Appendix B: Additional Resources for Quick Reference

Hand Hygiene

- [AHS: Your 4 Moments of Hand Hygiene](#)
- [AHS: How to Hand Wash](#)

Community-Based Care

- [AHS: How to Use Water Safely in Community-based Health Care Settings \(CHCS\) During a Boil Water Advisory](#)
- [AHS: Community-based Service Resource Manual](#)

Occupational Health and Safety

- [AHS: Personal Protective Equipment](#)
- [Alberta: Occupational health and safety \(OHS\)](#)
- [Alberta: Occupational Health and Safety Code Products](#)
- [Alberta: OHS Publication. Health and Safety Programs](#)
- [Alberta: WHMIS](#)
- [Alberta: Workplace first aiders and legal requirements: OHS information for employers and workers](#)
- [Canadian Centre for Occupational Health and Safety](#)
- [Policy Protocol Sharps, Syringes & Safety Engineered Syringes \(SES\)](#)

Immunization for Healthcare Workers

- [Canadian Immunization Guide](#)
- [AHS: Immunization Recommended for Health Care Workers Chart](#)
- [AHS: Influenza Immunization Information for Health Professionals](#)

Dental Waste Management

- [Alberta: Waste legislation and resources](#)
- [Environmental Services Association of Alberta](#)

Reprocessing

- [Alberta Health: Reusable & Single-Use Medical Devices Standards](#)
- [Guidance Document: Information to Be Provided by Manufacturers for the Reprocessing and Sterilization of Reusable Medical Devices](#)
- [Sterilization Log](#)
- [Medical Device Reprocessing](#)

Appendix C: Occupational Health and Safety

Legislation

In Alberta, employers have the responsibility to meet the requirements of the *Occupational Health and Safety Act, Regulation and Code*. This legislation requires employers do everything they reasonably can to protect the health and safety of their employees. This means ensuring all workers have the skills and training needed to do their jobs in a healthy and safe manner.

Health and Safety Program

Employers establish a health and safety committee (HSC) if the employer regularly employs 20 or more workers.

An HSC is a group of workers and employer representatives working together to address health and safety concerns. A health and safety representative (HS) is an individual worker representative who works with the employer to address health and safety concerns.

Program Elements

Health and safety programs include the following:

- Health and safety policies including, but not limited to:
 - Exposure prevention and immediate response to worker exposed to chemicals
 - Exposure prevention and immediate response and post-exposure management of workers exposed to blood and/or body fluids or needlestick injury
 - Documentation for OHS incidents
 - Special considerations regarding medical conditions, work-related illness, and associated work restrictions
 - Considerations regarding contact dermatitis and latex hypersensitivity
- Hazard assessment and control
- Emergency response plan
- First aid plan, equipment, and services in place and all OHCP and staff are aware of the plan and use of equipment and services
- Statement of OHS responsibilities of the employer, supervisors, and workers at a work site
- Schedule and procedures for work site inspections
- Procedures for when another employer or self-employed person is working at the work site
- Health and safety orientation and training for workers and supervisors
- Procedures for investigating incidents, injuries, and refusals to work
- Procedures for worker participation in work site health and safety
- Procedures for reviewing and revising the health and safety program
- Workplace violence prevention plan
- Workplace harassment prevention plan
- Location of safety data sheets (SDSs)
- How to report unsafe/unhealthy conditions and other health and safety concerns

Note: Employers designate an HS if the employer regularly employs 5 to 19 workers.

Hazard Assessment

The OHS legislation requires employers to conduct hazard assessments and to eliminate the hazards identified. If they cannot be eliminated, the employer has the obligation to introduce controls to protect against them.

Hazardous profession including signage (silica)

Exposure to crystalline silica, which may be used in dental materials, can cause a number of health problems.

Preventing exposure to crystalline silica is the best way to protect health. Options to consider include the following (listed in order of preference):

- using less hazardous substitutes
- Hierarchy of Controls
 - engineering controls
 - administrative controls (changing work practices to reduce exposure)
 - personal protective equipment
- Alberta's occupational health and safety legislation has general and specific requirements related to crystalline silica. Refer to the Canadian Centre for Occupational Health and Safety for more information.
- Schedule 1 of the OHS Code – these limits apply to workers directly involved with tasks using crystalline silica, and also to workers in the workplace who may be exposed to dust indirectly from these operations.

Ventilation

Oral health practices ensure that ventilation is in place to efficiently remove vapours generated by, or emitted from, cleaning, laser use, aerosol-generating procedures, or disinfecting agents. OHCPs have the ventilation systems in the clinic or laboratory evaluated by the appropriate professional.

Workplace Hazardous Materials Information System (WHMIS)

WHMIS is Canada's national communication standard that deals with hazardous materials in the workplace. According to WHMIS, any workplace that uses materials classified as controlled products is required to:

- Use cautionary labelling on hazardous materials.
- Have the label display the product identifier, safe handling precautions, and reference to the safety data sheets (SDS).
- Maintain the most current SDS for all hazardous substances, which are required to be renewed every three years.
- Provide worker education programs on how to use, handle, store, and dispose of hazardous material.

Other OHS Considerations

Eye Wash/Showers Stations

If a worker is present at a work site where chemicals harmful to the eyes or skin are used, the employer ensures that the worker has immediate access at the work site

to emergency baths, showers, eye wash equipment, or other equipment appropriate for the potential level of exposure.

Mercury-Containing Waste

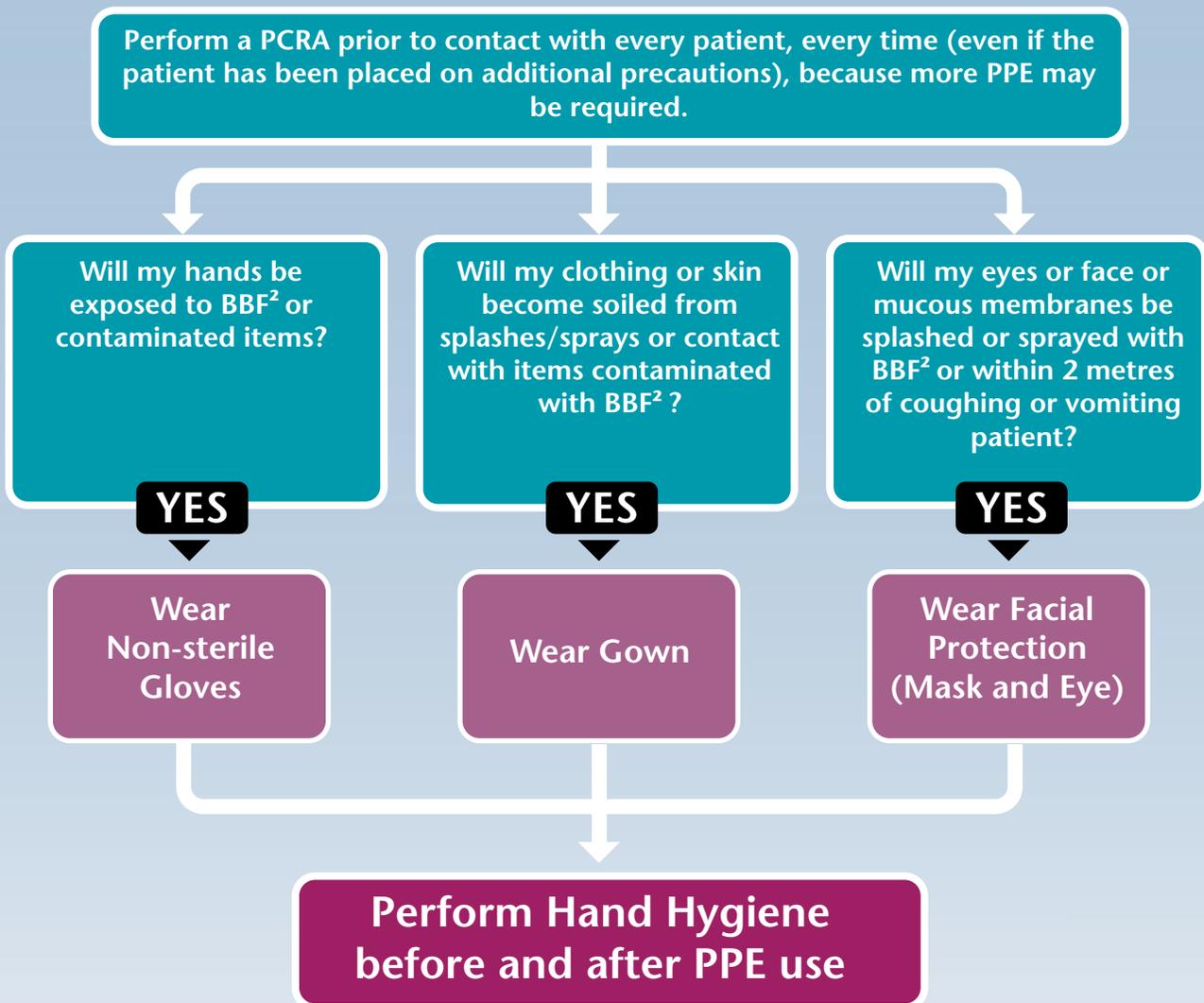
Mercury-containing waste:

- Such as amalgam, is classified as hazardous under the *Environmental Protection and Enhancement Act* due to the presence of mercury and is regulated by the *Transportation of Dangerous Goods Act and Regulations*.
- Includes scrap amalgam retrieved from traps, gauze, and excess amalgam not used during a restoration.
- Is collected on-site in amalgam traps and filters that may be part of a settling tank provided by specialized waste management companies.
- is directed to appropriate facilities for metal recovery.

Point-of-Care Risk Assessment (PCRA)

Assess the **task**, the **patient**, and the **environment**¹ prior to each patient interaction.

Routine practices are used with **all patients** for **all care** and **all interactions**. Performing a PCRA is the first step in routine practices and helps you decide what, if any, PPE you need to wear to protect yourself and to prevent the spread of infectious agents.



¹ Environment = any area within 2 metres of the patient as well as their belongings or the immediate space around a patient that may be touched by the patient AND may also be touched by the OHCP when providing care or performing tasks.

² BBF = blood and body fluids, including urine, feces, wound drainage, saliva, vomit, CSF (cerebrospinal fluid), sputum, nasal secretions, semen, vaginal secretions.

Adapted from AHS, Infection Prevention & Control, July 2018.

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