

# STANDARD OF PRACTICE:

## INFECTION PREVENTION AND CONTROL



**College of Dental Technologists of Ontario**  
Ordre des Technologues Dentaires de l'Ontario

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# Introduction

Infection prevention and control is an important part of the health and safety of both patients and practitioners. The following document describes in detail the standards set by CDTO for both the prevention of transmission of infectious diseases and procedures for infection prevention/control in the dental technology practice.

Before performing any dental technology activity, RDTs and all personnel must be aware of the Infection Prevention and Control Standards that should take place in the dental technology setting.

The Infection Prevention and Control Standard of Practice is presented in four chapters, each encompassing a different subject as it pertains to infection prevention and control:

1. Standard Precautions
2. Reusable Instruments Reprocessing, and Maintenance
3. Blood or Body Fluid Exposure Management
4. Training and Documentation

Found in each chapter, the “Standards of Practice” are presented in numbered coloured boxes. The standards are the minimum level at which all RDTs are held accountable for.

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**You shall properly use personal protective equipment when in contact with blood/saliva.**

Guidance boxes describe the actions and behaviours that enable RDTs to meet the minimum standards, they represent the current best practices in the field. RDTs are not obligated to follow the guidance provided, but they must demonstrate that they meet the standards should they not follow the guidance.

## GUIDANCE

### Proper hand hygiene techniques

#### Handwashing

Wash your hands with a liquid soap, appropriate for use in a healthcare setting, at the following times:

1. When your hands are visibly dirty or contaminated with proteinaceous material, blood or other body fluids.
2. At the beginning and end of each clinical session.
3. After a toilet break.

## Duty of patient care

Infection Prevention and Control Standards involves taking steps to prevent the spread of infectious agents among all individuals in the practice environment. The routine use of infection prevention and control measures, and an understanding of how infectious agents are transmitted, are critical in preventing this transmission and essential in ensuring patients receive safe care.

## Duty of compliance

RDTs have a legal responsibility to meet the standards contained in this document.

All practitioners shall ensure that:

- their own dental laboratory meets the Infection Prevention and Control Standards; and
- these standards are fully met in the practice in which they work.

Where practitioners delegate responsibility for infection prevention and control associated tasks, practitioners remain accountable.

## Role of Public Health Units

Under the *Infection Prevention and Control Practices Complaints Protocol, 2015*, Public Health Units (PHUs) are required to investigate complaints, referrals, or reportable diseases that may be linked to infection prevention and control practices. This is applicable to all health care settings.

PHUs may investigate facilities where concerns have been identified through pre-organized or unannounced inspections, and will provide the facility with recommendations or requirements for corrective actions based on Public Health Ontario/ the Provincial Infectious Diseases Advisory Committee's best practices documents.

Depending on the severity of the lapse, the PHU may issue an order, including closure of the facility or partial restrictions for specific services that the facility renders. The PHU may also post the IPAC lapse according to public disclosure requirements issued by the Ontario Ministry of Health and Long-Term Care. If a complaint is received, the involved PHU(s) will work with the CDTO as much as possible during the investigation

## Non-registered staff and volunteers

RDTs are responsible for ensuring that all personnel involved in infection prevention and control activities are trained to enable them to correctly perform the required tasks.

The College strongly recommends that RDTs ensure that all personnel, including non-registered staff, volunteers and students meet the Infection Prevention and Control Standards to minimise the risk of transmission of infectious agents to patients, staff and their families.

## Immunization

Immunization is one of the safest and most effective health interventions to prevent infectious diseases. Vaccination is a key means of establishing immunity to a number of common infectious diseases, thereby reducing the risk of acquiring and further transmitting the disease.

The College strongly recommends that all RDTs, non-registered staff and students follow the Canadian Immunization Guide to establish immunity against any common infectious diseases, including hepatitis B, measles, mumps, rubella, varicella (chickenpox), tetanus, diphtheria, and pertussis.

# Part 1:

## Standard Precautions

Standard precautions are the minimum infection control practice used to prevent transmission of diseases that can be acquired by contact with blood, body fluids (for example saliva), non-intact skin, and mucous membranes.

Standard precautions should be in place at all times, regardless of whether or not there is a known infectious source or condition. They are designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection.

Where the suspected or confirmed presence of infectious agents represents an increased risk of transmission, it may require measures additional to standard precautions, termed transmission-based precautions as a second tier of infection prevention. Transmission-based precautions are used when infection can spread through contact, droplet or airborne routes (e.g., active tuberculosis, measles, chickenpox and viral influenza).

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## 1.1 Hand Hygiene

Hand hygiene reduces potential pathogens on the hand and is considered the single most critical measure for reducing the risk of transmitting organisms to patients and health care workers. The term hand hygiene includes both handwashing with liquid soap and the use of an alcohol-based hand rub.

**Alcohol-Based Hand Rub/Sanitizer, with 70-90% alcohol**, is the preferred method for cleaning hands when hands are not visibly soiled. It has been shown to be more effective than washing hands with soap (even with antimicrobial soap).

**Hand washing with soap and water** must be performed when hands are visibly soiled with dirt, blood, and bodily fluids.

Hand hygiene is recommended:

- When hands are visibly soiled.
- After touching instruments, equipment, materials, and other objects likely to be contaminated by blood, saliva, or respiratory secretions without the use of gloves.
- Before putting on gloves and again immediately after removing gloves.

### 1 You shall routinely practice proper hand hygiene techniques

#### GUIDANCE

##### Proper hand hygiene techniques

###### Handwashing

Wash your hands with a liquid soap, appropriate for use in a healthcare setting, at the following times:

4. When your hands are visibly dirty or contaminated with proteinaceous material, blood or other body fluids.
5. At the beginning and end of each clinical session.
6. After a toilet break.

When using liquid soap and water for routine care:

1. Wet hands with water.
2. Apply soap.
3. Rub hands together for at least 15 seconds, covering all surfaces, focusing on fingertips and fingernails.
4. Rinse under running water and dry with disposable towel.
5. Use the towel to turn off the faucet.

When washing your hands, use sinks dedicated for handwashing purposes that are fitted with non-touch tapware, or employ a non-touch technique. After handwashing, dry your hands using single-use linen or disposable paper towels (not using an air-dryer). Dampness under gloves can cause irritation.

### **70-95% Alcohol-based hand rub**

When hands are visibly and clinically clean use alcohol-based hand rub, specified for use in health care settings, at the following times:

1. Before and after every patient contact.
2. Before gloves are put on and after they are taken off. (e.g., in dental laboratory, at the beginning and end of unpacking items received from a dental office).
3. On entering and leaving the instrument reprocessing areas.
4. After hands inadvertently touch contaminated environmental surfaces, instruments or other equipment.

When using alcohol-based hand rub:

1. Apply to palm of one hand (the adequate amount used depends on specific hand rub product).
2. Rub hands together, covering all surfaces, focusing in particular on the fingertips and fingernails, until dry.
3. Do not dry them with linen or paper towels. Use enough rub to require at least 15 seconds to dry.

### **Other measures for effective hand hygiene**

The following measures below help prevent the transmission of infections.

#### **Condition of the hands**

The condition of the hands can influence the effectiveness of hand hygiene. The presence of dermatitis, cracks, cuts or abrasions can trap bacteria and compromise hand hygiene, consequently the risk of skin infection and transmission of infection to others increases:

- Cuts and abrasions must be covered with waterproof dressings even if gloves are worn over the affected area(s).
- Refrain from direct patient contact or handling patient care equipment if you have an exudative lesion or weeping dermatitis on the lower arms, hands or face that cannot effectively be dressed to prevent transmission, until the condition is resolved.
- Use an aqueous based hand moisturiser regularly to maintain skin health; compatible with the hand hygiene products used.
- Do not use scrubbing brushes on hands because they can cause abrasions to the skin.

#### **Nails, hand/wrist adornments**

- Keep nails clean and short.
- Refrain from wearing nail polish, nail jewellery, artificial nails, and jewellery on the hands or arms.
- Refrain from wearing rings and wrist jewellery, including watches when performing hand hygiene.

***But I didn't touch the patient. Why should I practice hand hygiene?***

*Bacteria can survive for days on equipment and other surfaces.*

*It is important to practice hand hygiene after you leave the room, even if you only touched patient care equipment or other surfaces.*

***Why alcohol-based hand rub (sanitizer) is the preferred method for hand hygiene when they are not visibly soiled?***

- *It is more effective at killing potentially deadly germs on hands than soap.*
- *It requires less time.*
- *It is more accessible than handwashing sinks.*
- *It results in reducing bacterial counts on hands.*
- *It improves skin condition with less irritation and dryness than soap and water.*

## 1.2 Personal Protective Equipment

Personal Protective Equipment (PPE) refers to wearable equipment that is designed to protect health practitioners from exposure to potentially infectious agents.

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**You shall properly use personal protective equipment when in contact with blood/saliva and when sprays or splashes may occur.**

### GUIDANCE

#### Personal protective equipment (PPE)

PPE is mandatory when you are handling received items in the laboratory until they have been decontaminated or during patient-care activities (shade matching). In the dental laboratory setting, PPE includes: gloves; masks or face shields; protective eyewear; and outer protective clothing (e.g., gowns, laboratory coats, uniforms).

#### Gloves

- Perform hand hygiene before putting on gloves and immediately after removing gloves. Wearing gloves does not replace the need for hand hygiene.
- Use new properly fitting single-use gloves for each patient.
- Wear new single-use protective gloves whenever the hands might be contaminated with blood, saliva or other bodily fluid, or will be in contact with contaminated instruments, devices or surfaces (e.g., disinfection of impressions and prostheses).
- Do not wash single-use gloves as this may damage glove integrity.
- Replace gloves as soon as possible if they become soiled or damaged.

#### Utility gloves

- Wear puncture-resistant, heavy-duty utility gloves when handling or manually cleaning contaminated sharp instruments and/or when cleaning and disinfecting equipment and surfaces.
- Wear appropriate gloves when handling heated objects.



### **Masks**

- Wear a surgical mask that covers both your nose and mouth during patient-care activities (shade matching) and/or during all procedures likely to generate splashes or sprays of blood or contaminated fluids.
- Avoid touching the front of the mask during patient shade matching.
- Follow the manufacturer's instructions to ensure the most appropriate fit and optimum protection.
- Change your mask with each patient or when they become wet or visibly contaminated.
- Remove gloves, masks and protective eyewear before moving from a contaminated zone to a clean zone in your practice setting.
- Put on the mask before the gloves to minimize the spread of contamination.

### **Protective eyewear**

- Use the protective eyewear that is fit for purpose and with complete coverage over and around the eyes, including solid (not vented) side shields.
- Wear protective eyewear when exposure to blood or other potentially infectious material is possible and during fabrication process when eye injury is possible.
- A face shield is recommended if side shields are not used.
- Clean and disinfect protective eyewear after each use.

### **Outer protective clothing**

- Wear outer protective clothing/lab coat at all times during patient-care activities and/or fabrication process. All outer protective clothing should be made of synthetic material so that contaminants are not easily absorbed into the material.
- Change outer protective clothing: as soon as possible when visibly soiled or wet, when exposed to contaminated aerosols for prolonged periods of time, and at least daily when all clinical activities are completed.
- Remove outer protective clothing before leaving the treatment area for: a break involving eating and/or drinking, a toilet break, and before leaving the practice premises.
- Launder (wash) reusable outer protective clothing as a separate load at the hottest temperature the fabric can tolerate.
- Place disposable outer protective clothing in the general laboratory waste after use.

Ventilation is a very common control measure for toxic materials to prevent exposure to a toxic material, control measures are used. 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.

### 1.3 Respiratory Hygiene/Cough Etiquette

Respiratory hygiene and cough etiquette are terms used to describe infection prevention measures to decrease the transmission of respiratory illness (e.g., influenza and cold viruses). To prevent the transmission of all respiratory infections in healthcare settings, including influenza, respiratory hygiene/cough etiquette infection prevention measures should be implemented at the first point of contact with a potentially infected person. The strategies target primarily patients and individuals accompanying patients to the dental laboratory who might have undiagnosed transmissible respiratory infections, but also apply to anyone with signs of illness including cough, congestion, runny nose, or increased production of respiratory secretions.

**3 You shall routinely practice respiratory hygiene measures and cough etiquette.**

#### GUIDANCE

##### **Respiratory hygiene/cough etiquette infection prevention measures**

The following measures to contain respiratory secretions are recommended for all individuals with signs and symptoms of a respiratory infection.

- Cover your mouth and nose with a tissue when coughing or sneezing.
- Use the nearest waste receptacle to dispose of the tissue after use.
- Perform hand hygiene after having contact with respiratory secretions and contaminated objects/materials.

Healthcare facilities (dental laboratories) should ensure the availability of materials for adhering to respiratory hygiene/cough etiquette in waiting areas for patients and visitors.

- Provide tissues and no-touch receptacles for used tissue disposal.
- Provide conveniently located dispensers of alcohol-based hand rub; where sinks are available, ensure that supplies for hand washing (i.e., soap, disposable towels) are consistently available.

## 1.4 Safe Management of Sharps and Waste

Proper waste management is an integral part of your infection control plan. Waste from dental laboratories can be divided into three categories: sharps, general laboratory waste and extracted teeth.

Sharps including orthodontic wires, disposable blades, burs, needles, laboratory utility knives and other sharp instruments should be handled carefully and safely to prevent injury.

General waste from dental laboratory is no more infectious than residential waste. All items that do not release liquid or semi-liquid blood if compressed, are currently considered as general laboratory waste for example:

- Dental impression waste.
- Gloves or other appliances that have come in contact with blood, saliva or other bodily fluids.
- Single-use plastic bags, containers or boxes used for transporting and have come in contact with incoming contaminated cases (receiving items).
- Disposable outer protective clothing contaminated with blood or saliva.

What you throw away at the laboratory each day may expose others to hazardous sharp instruments, infectious or chemical agents. Federal, provincial and municipal authorities govern the environmentally safe transportation and disposal of waste after it leaves your laboratory, as determined by medical, hazardous and toxic waste regulations and Ontario *Reg. 347, Waste Management* under the *Environmental Protection Act*.

### 4 You shall safely handle and dispose of any general laboratory waste.

#### GUIDANCE

##### Safe handling of waste

- Wear appropriate Personal Protective Equipment (PPE) (e.g., protective eyewear, gowns, masks and gloves) when handling waste; and perform hand hygiene afterwards.
- Separate waste at its point of generation into: sharps and general laboratory waste.
- Remove waste from laboratory environment frequently.

##### Safe handling of sharps

- Dispose of a single-use sharp you have used immediately, or render it safe for disposal later.
- Use rigid walled, leak- and puncture-resistant yellow containers for disposal of sharps which are durable during installation and transport, and an appropriate size and shape. The closure should be secure and minimize exposure during closure.
- Follow safe practices to minimise the risk of sharps injury, including:
  - Use an intermediary tray instead of passing sharp instruments between staff members, for example, scalpels or utility knives.
  - Place appropriate sharps (biohazard) containers as close as possible to the area where the items are used.
  - Carry sharps in a lidded puncture-resistant container, cassette or covered tray from the point of origin to the reprocessing area.

## 1.5 Environmental Infection Prevention and Control

The prevention of cross-contamination or the spread of microorganisms from one source to another is of primary concern in the practice of dental technology. A contaminated zone is any area that most likely to become contaminated with potentially infectious material (blood, saliva, etc.). A clean zone is any other area within the practice environment.

The typical zones of contamination in dental laboratory environment are:

- The clinical working area for shade matching - typically including work surfaces, shade set.
- The receiving, cleaning and decontamination area for incoming cases including dental prostheses, impressions, orthodontic appliances, and other prosthodontic materials (e.g., Occlusal rims, temporary prostheses, bite registrations, or extracted teeth).
- The reprocessing area where instruments and equipment are handled and decontaminated.

**5 You shall employ procedures to minimize the spread of contamination in the laboratory and to prevent contamination of the clean zones.**

### GUIDANCE

- Clearly define the contaminated and clean zones in dental laboratory.
- Reduce the risk of cross-contamination by minimizing the spread of contamination within a contaminated zone, including:
  - Place computers and clinical notes outside the contaminated zone. If limitations in your practice environment make it impossible to locate computers outside the contaminated zone, use barrier protection for these items.
- Reduce the risk of cross-contamination by minimizing the spread of contamination from the contaminated zone to clean zone, including:
  - Not touching surfaces, equipment, stored instruments and materials in the clean zone, with contaminated gloves or hands.
  - Clean and disinfect routinely environmental surfaces after properly receiving each dental laboratory case.
  - Do not use liquid chemical sterilants/high-level disinfectants for environmental surface disinfection or as holding solutions.
  - Allow for a one-way flow of items for example if you need to obtain materials or instruments from within the clean zone during a procedure, do so in a manner that does not cause contamination of the clean zone.
    - This can be achieved by removing your contaminated gloves and practising the appropriate hand hygiene techniques.
  - Extracted teeth can be returned to patients on request.

Guidance for the collection and disposal of hazardous waste is provided under Ontario law (Regulation 347), however it is recommended that practitioners develop their waste disposal procedures following reference to local disposal of healthcare waste.

## 1.6 Safe and Clean Laboratory

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**You shall maintain a safe and clean dental laboratory environment by effective cleaning of all surfaces, equipment and instruments.**

### GUIDANCE

#### Cleaning of surfaces in the contaminated zone

- Follow manufacturer recommendations for use of products selected for cleaning and disinfection (e.g., amount, dilution, contact time, safe use, and disposal); and after cleaning and disinfection, dry surfaces with a low-lint cloth or disposable paper towel.
- Clean and disinfect surfaces in the contaminated zones at the following times:

Clinical working area	Immediately after each patient
Receiving, cleaning and decontamination area for incoming cases	Immediately after decontamination of each case, or if visibly soiled
Reprocessing area	After loading sterilizer, or if visibly soiled

- Use low-level disinfectant.
- Use surface barriers to protect clinical contact surfaces, particularly those that are difficult to clean in the contaminated zone and change surface barriers between patients.
- Remove and discard barrier protection after each patient while still wearing gloves, clean surfaces and/or equipment that have been barrier protected, and place new barrier.
- Use seamless and smooth, slip-resistant, easily cleaned and appropriately wear-resistant materials for floor coverings in patient-care areas; and use slip-resistant, easily cleaned material for floor covering in the dental laboratory reprocessing areas.
- Clean walls, blinds, and window curtains in patient-care areas when they are visibly dusty or soiled.

#### Cleaning of surfaces in the clean zone

- Clean the work surfaces (e.g., floors, walls) in the clean zone with a detergent and water or a proper disinfectant/detergent on a routine basis, depending on the nature of the surface and type and degree of contamination, clean them at least weekly, and when visibly soiled.
- Clean mops and cloths after use and allow to dry before reuse; or use single-use, disposable mop heads or cloths.

## 1.7 Transmission-Based Precautions

Transmission-based precautions are used in addition to standard precautions when use of standard precautions alone does not fully prevent communicable disease transmission – a patient has a known or suspected infectious condition, transmitted by the airborne, droplet or contact route like tuberculosis, measles, chickenpox, mumps, and respiratory viruses.

Dental laboratory settings are not typically designed to carry out the Transmission-Based Precautions (e.g., Airborne Precautions for patients with suspected tuberculosis, measles, or chickenpox). Dental laboratories should develop and carry out systems for early detection and management of potentially infectious patients at initial points of entry to the dental setting.

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**You shall follow appropriate transmission-based precautions, in addition to standard precautions.**

### GUIDANCE

- Ask the referring health care professional at the beginning of each work order to determine if the patient has a known or suspected infectious condition.
- Examples of transmission-based precautions are listed below:

Contact Precautions	Droplet Precautions	Airborne Precautions
<ol style="list-style-type: none"><li>1. Antibiotic-resistant organisms (e.g., MRSA infection)</li><li>2. Acute vomiting/diarrhea</li><li>3. Uncontained drainage</li><li>4. Conjunctivitis</li></ol>	<ul style="list-style-type: none"><li>• Pertussis</li><li>• Mumps</li><li>• Rubella</li><li>• Meningitis (etiology unknown and meningococcal)</li></ul>	<ul style="list-style-type: none"><li>• Pulmonary tuberculosis (TB)</li><li>• Measles</li><li>• Chickenpox (Varicella)</li></ul>
<ul style="list-style-type: none"><li>• Acute respiratory Infection (e.g., croup, RSV, common cold, influenza, bronchiolitis, pneumonia, acute exacerbation of asthma)</li></ul>		

## 1.8 Received Items (Incoming Cases)

Dental prostheses, impressions, orthodontic appliances, and other prosthodontic materials (e.g., occlusal rims, temporary prostheses, bite registrations, or extracted teeth) received from dental practices are potential sources for cross-contamination and should be handled in a manner that prevents transmission of infectious agents.

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**You shall ensure received items are properly disinfected or decontaminated before any work is begun.**

### GUIDANCE

- Communicate effectively with dental practice to ensure whether appropriate cleaning and disinfection procedures for received items are performed in order not to damage or distort the items because of disinfectant overexposure.

#### Received contaminated items

- Treat the item as contaminated and perform cleaning and disinfection procedures before handling:
  - if no communication has been received regarding prior cleaning and disinfection of the item.
  - if there is any doubt about performing prior cleaning and disinfection of the item.

#### Decontamination

- Establish a separate receiving, cleaning, and decontamination area in a dental laboratory to minimize the spread of contamination.
- Wear PPE during cleaning and until disinfection is completed.
- Clean blood and saliva thoroughly and carefully from received items (e.g., impression materials, bite registration).
- Dispose of all single-use shipping materials (e.g., plastic bags) that have touched the contaminated received items, or if there is any doubt or possibility of being contaminated. If they are reusable (e.g., reusable plastic containers), properly disinfect/sterilize them according to manufacturer's instructions.

Action	Appropriate procedure
Laboratory receiving item	Laboratory cleans and disinfects with appropriate solutions to protect integrity of material

#### Disinfection

- Select an appropriate disinfectant with low-level activity and ensure it:
  - has a Drug Identification Number (DIN) from Health Canada.
  - has efficacy for the intended use.
  - is compatible with the material to be disinfected.
  - is safe for use, with minimal toxic and irritating effects to/for staff.
- Disinfect contaminated items received from dental practices or other sources before performing any dental technology activity.

## 1.9 Sending Items Out

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You shall ensure that any completed work will be disinfected, packaged and labelled before sending it out.

### GUIDANCE

- Clean items for sending between a dental laboratory and dental practice or another dental laboratory, for example dental appliances, as follows:

Action	Appropriate procedure
Laboratory sending item to dental practice or laboratory	Laboratory cleans the item with an appropriate clinical detergent

- Clean, package and decontaminate (if possible sterilize) instruments for repair, before sending for repair or maintenance.
- Once cleaned, place items in a new sealed plastic bag; label to indicate “cleaned”; and then place in a clean, rigid container for transport.
- Do not reuse single-use shipping materials (e.g., plastic bags).



# Part 2:

## Reusable Instruments Reprocessing, and Maintenance

Reprocessing refers to the steps that are performed to ensure a contaminated reusable instrument is made safe for reuse. Reusable instruments may include dental instruments, devices and equipment. As appropriate for the instrument's intended use, reprocessing may include:

- Cleaning
- Disinfecting
- Sterilizing
- Packaging
- Safe storage

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## 2.0 Reusable Instruments Reprocessing

Reprocessing refers to the steps that are performed to ensure contaminated instruments are made safe for reuse again. Reprocessing refers to the following 4 steps:

- Step 1. Cleaning
- Step 2. Disinfection
- Step 3. Sterilization
- Step 4. Storage of Instruments

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**You shall use the appropriate reprocessing procedures for each type of contaminated reusable instrument.**

### GUIDANCE

#### Reusable instruments

Reusable instruments such as dental instruments, devices and equipment, are categorized as critical, semi-critical, or noncritical, depending on the potential risk for infection associated with their intended use.

- **Critical instruments** are used to penetrate soft tissue or bone, they have the greatest risk of transmitting infection. Critical instruments are generally not found in dental laboratories.
- **Semicritical instruments** are instruments that touch mucous membranes or non-intact skin. Semicritical instruments have a lower risk of transmission.
- **Noncritical instruments** pose the least amount of risk of infection. Noncritical instruments touch only intact skin, which can serve as an effective barrier to microorganisms.

The classification of laboratory instruments change depending on the intended use of the instrument.

#### Reprocessing Summary

Reprocess reusable instruments as follows:

- **Critical instruments** should be 1. Cleaned and 2. Sterilized.
- **Semicritical instruments** should be 1. Cleaned, 2. Disinfected by a Low-Level Disinfectant, and 3. Sterilized. If it cannot be sterilized, then it should be disinfected by a High-Level Disinfectant instead.
- **Noncritical instruments** can be reprocessed by cleaning alone. If the instrument is visibly soiled or contaminated, then a proper low-level disinfectant should be used.

## 2.1 Single-Use Instruments

**11** You shall dispose of single-use instruments after use.

### GUIDANCE

#### Single-use instruments

Treat the following instruments (i.e., dental instruments, devices or equipment) as single-use instruments:

- Instruments labelled or recommended by the manufacturer as single-use.
- Small and/or sharp instruments that are difficult to clean in a safe manner.
- Steel burs, due to oxidation as a result of sterilization.
- Or if the manufacturer does not provide reprocessing or reusable instructions, treat the instrument as single-use.

## 2.2 Reprocessing Area

In dental laboratory settings, all instrument cleaning, disinfecting, and sterilizing should occur in a designated reprocessing area in order to more easily control quality and ensure safety.

**12** You shall designate a distinct reprocessing area.

### GUIDANCE

Establish a reprocessing area which is ideally separate from the work area and has the following:

- sufficient bench space to allow for all reprocessing activities and associated equipment
- adequate ventilation and light
- smooth bench surfaces for easy and effective cleaning
- a sink for cleaning contaminated instruments, deep enough to submerge the instruments for cleaning
- a separate facility for hand washing
- covered storage areas for reprocessing supplies; separate from the storage area for sterilized instruments.
- When it is not possible to establish a reprocessing area separate from the work bench, establish a reprocessing area as far away from the contaminated zone as possible.

Establish distinct areas in the reprocessing area for the following procedures:

- receiving, cleaning, and decontamination
- preparation and packaging
- sterilization
- storage

## 2.3

### Step 1: Cleaning of Contaminated Reusable Instruments

Cleaning is the removal of contamination (e.g., soil, debris and organic/non-organic material) from objects and is always required before disinfection and/or sterilization. If blood, saliva, and other contamination are not removed and dried on the instruments, these materials can shield microorganisms and potentially compromise the disinfection or sterilization process. An instrument that has not been cleaned cannot be assuredly disinfected or sterilized.

**13** You shall use the appropriate cleaning procedure for the various types of instruments.

#### GUIDANCE

##### Cleaning

Cleaning can be performed manually, or with the use of automated cleaning equipment (e.g., ultrasonic cleaner, washer-disinfector).

- Automated cleaning is the preferred cleaning method as it is more efficient, reduces the risk of exposure to blood and reduces the risk of penetrating skin injuries from sharp or pointed instruments.
- Wear puncture-resistant, heavy duty utility gloves, a mask, outer protective clothing and eye protection during cleaning of contaminated instruments, to protect from splashing and potential injury.
- Clean contaminated instruments (i.e., with blood, saliva, cements and other contaminants) as soon as possible to prevent the substances drying on them. If they are unable to be cleaned immediately, soaked in detergent or an enzymatic cleaner to prevent hardening of residue.
- Avoid use of identification colour-coded tapes on instruments (i.e., they may compromise the cleaning, disinfection and sterilization processes).
- Inspect instruments after cleaning and drying to ensure all debris are removed.

##### Ultrasonic cleaners

Ultrasonic cleaners work by subjecting instruments to high frequency, high-energy sound waves, thereby loosening and dislodging dirt.

- Follow the manufacturer's instructions for operation, maintenance and evaluation of the ultrasonic cleaner to ensure that it works properly.
- Remove gross debris from instruments prior to placement in an ultrasonic cleaner.
- Do not overload the tank and always keep the lid on the tank while running.
- Rinse instruments with water after cleaning (with minimal splashing) to remove chemical or detergent residue.

##### Washer-disinfectors

Washer-disinfectors are generally computer-controlled units for cleaning, disinfecting, and drying solid and hollow surgical and dental equipment. Note that disinfection is not a required step in the safe reprocessing of critical or semi-critical instruments.

- Follow the manufacturer’s instructions for the operation, maintenance and evaluation of the washer-disinfector to ensure that it works properly.
- Monitor the cleaning and disinfecting process regularly according to the manufacturer’s instructions.
- Avoid stacking or overloading of instruments in the washer-disinfectors; and disassemble devices as much as possible.
- Maintain and clean the washer-disinfectors regularly to prevent formation of biofilms that could contaminate the instruments being processed.

### **Manual cleaning**

Cleaning is performed manually in reprocessing area without automatic cleaners.

- Soak contaminated instruments in a puncture-resistant container or dedicated instrument-cleaning sink that is filled with a solution of warm water and detergent (i.e., a mildly alkaline, low foaming, non-abrasive liquid detergent intended for cleaning reusable instruments) if manual cleaning is not performed immediately.
- Use long-handled brushes to keep the hand as far away as possible from sharp instruments and use non-abrasive cleaning methods. The brushes must also be cleaned, disinfected and stored dry. Brushes with metal bristles are not recommended.
- Keep instruments low in the sink or container, and fully submerged in the cleaning solution while cleaning to minimise splashing, when manufacturer’s instructions permit.
- Rinse instruments with water after cleaning to remove detergent and residue.
- Inspect all instruments visually to ensure all debris have been removed and if not, repeat the cleaning procedure.

### **Drying of instruments**

Drying is an important step in reducing the potential of re-contamination during inspection and assembly.

- Follow the manufacturer’s instructions for drying of the instruments.
- Dry instruments (e.g., by using a drying cabinet, air-dried, or dried by hand with a clean and lint-free towel).
- Dry stainless steel instruments immediately after rinsing to prevent spotting.
- Inspect the instruments for any malfunction or damage after drying.

## 2.4

### Step 2: Disinfection of Reusable Instruments

Disinfection is a process that kills or destroys nearly all disease-producing microorganisms, except bacterial spores or prions. Disinfection of reusable instruments falls into two major categories:

**High-Level Disinfection (HLD):** The level of disinfection required when reprocessing heat-sensitive semicritical instruments. Instruments that touch mucous membranes or non-intact skin are considered to be semicritical instruments. Sterilization is always the preferred method of reprocessing semicritical instrument. However, for instruments that cannot tolerate sterilization, HLD must be used. Disinfection does not destroy bacterial spores or prions.

**Low-Level Disinfection (LLD):** The Level of disinfection required when reprocessing noncritical instruments. Instruments either touch only intact skin or not directly touch the patients are considered to be noncritical instruments. This procedure kills most vegetative (live) bacteria except *Mycobacterium tuberculosis*, some fungi, and inactivates some viruses.

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You shall use the appropriate disinfection procedure for the various types of instruments.

#### GUIDANCE

##### Disinfection

- Wear appropriate Personal Protective Equipment (PPE) during disinfection.
- Select an appropriate disinfection procedure for reprocessing of reusable instruments according to:
  - If the instrument is noncritical– use Low-Level Disinfection (LLD). If it is not visibly soiled.
  - If the instrument is heat-sensitive semicritical– use High-Level Disinfection (HLD), at minimum. Sterilization of semicritical instruments is always the preferred method whenever possible.  
The majority of semi-critical instruments used in a dental laboratory are available in heat-tolerant or disposable alternatives. Avoid the use of heat-sensitive semi-critical instruments that must be processed with HLD.

##### Low-Level Disinfection (LLD)

- Thoroughly clean reusable noncritical instruments prior to LLD.
- Select an appropriate disinfectant for reprocessing noncritical instruments. You must ensure that the disinfectant has:
  - a Drug Identification Number (DIN) from Health Canada
  - proper efficacy for the intended use
  - compatibility with the instrument to be disinfected (information may be obtained from Health Canada’s drug information website).
- Follow the manufacturer’s instructions regarding:
  - the usage of disinfectants (e.g., amount, dilution, contact time, safe use, shelf life, storage and disposal).
  - the method for monitoring the disinfectant’s concentration.
  - instruction for rinsing the disinfectant (e.g., water quality, volume, time) after disinfection.

- Use low-level disinfectants (e.g., chlorine-based products, 0.5% accelerated hydrogen peroxide, 3% hydrogen peroxide, 60 to 95% alcohols, iodophors, phenolics and quaternary ammonium compounds) according to manufacturer's recommendations.
- Do not top up prepared solutions with fresh solution.
- If manual disinfection is performed, wash, rinse and dry the container used for disinfection when the solution is changed.
- Ensure that ventilation in the dental laboratory setting is appropriate to the disinfectant being used, to protect staff from toxic vapours.

### **High-Level Disinfection (HLD)**

- Avoid the use of heat-sensitive semi-critical instruments that must be processed with HLD. Use heat-tolerant or disposable alternative instruments.
- Meticulously clean reusable heat-sensitive semicritical instruments prior to HLD.
- Select an appropriate disinfectant for reprocessing heat-sensitive semicritical instruments. You must ensure that the disinfectant has:
  - a Drug Identification Number (DIN) from Health Canada
  - proper efficacy for the intended use
  - compatibility with the instrument to be disinfected (information may be obtained from Health Canada's drug information website).
- Follow the manufacturer's instructions regarding:
  - the usage of disinfectants (e.g., amount, dilution, contact time, safe use, shelf life, storage and disposal).
  - the method for monitoring the disinfectant's concentration.
  - instruction for rinsing the disinfectant (e.g., water quality, volume, time) after disinfection.
- Use high-level disinfectants (e.g., 2% glutaraldehyde, 7% accelerated hydrogen peroxide, 6% hydrogen peroxide, 0.2% peracetic acid and 0.55% ortho-phthalaldehyde) according to manufacturer's recommendations.
- Do not top up prepared solutions with fresh solution.
- Use chemical test strips to determine whether an effective concentration of active ingredients is present according to manufacturer's recommendations.
- Rinse instrument thoroughly following chemical disinfection, according to the chemical manufacturer's instructions; the quality of the rinse water (i.e., sterile, filtered or tap water, volume, time) will depend on the intended use of the device.
- If manual disinfection is performed, wash, rinse and dry the container used for disinfection when the solution is changed.
- Perform manual disinfection in an area that is vented appropriately to protect against toxic vapours.
- Do not use high-level disinfectants solution beyond the expiration date and for environmental surface disinfection.

Ensure that ventilation in the dental laboratory setting is appropriate to the disinfectant being used, to protect staff from toxic vapours. Comply with Ontario regulations for the use of chemical disinfectants (e.g., *Reg. 67/93 Health Care and Residential Facilities* and *Reg. 860, Workplace Hazardous Materials Information System (WHMIS)*) under the *Occupational Health and Safety Act*.

## 2.5

### Step 3: Sterilization of Reusable Instruments

Sterilization is the elimination of all disease-producing microorganisms, including spores. Sterilization is conducted using medical sterilization equipment that is registered with Health Canada. There are many types of sterilization techniques but the most common and preferred is steam sterilization.

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You shall use the appropriate **sterilization** procedure for the various types of instruments, noting that steam sterilization be used whenever possible.

#### GUIDANCE

##### Preparation and packaging before sterilization

- Inspect instruments for cleanliness to ensure all debris are removed.
- All instruments are then wrapped or placed onto trays or containers designed to maintain sterility during storage.
- Use a container system or wrapping compatible with the type of sterilization process used.
- Use an internal chemical indicator in each package. If the internal indicator cannot be seen from outside the package, use an external indicator.

##### Sterilization

- Develop written policies and procedures for sterilization of reusable instruments used in the dental laboratory setting that include cleaning, drying, inspection, disassembly, wrapping, sealing and labelling.
- All sterilization must be performed by using medical sterilization equipment registered with Health Canada.
- Follow the manufacturer's instructions for installation, operation, cleaning and preventive maintenance of the sterilizing equipment.
- Staff must be trained to operate sterilizers.
- Test all sterilizers for performance using physical, chemical and biological monitors and indicators.
- Keep records of any preventive maintenance and repairs of sterilizer.

##### Steam sterilization

The preferred method for heat-resistant instruments is steam sterilization (i.e., autoclaving).

- Follow the manufacturer's instructions for load and operating the sterilizer to ensure steam can circulate freely and touch all instrument surfaces.
- Allow the sterilizer to complete its entire cycle, including drying, before removing the load and handling. Allow instrument packs to dry inside the sterilizer chamber before removing and handling, in order to avoid wicking of moisture and, potentially, microorganisms from hands or gloves.
- Please follow the manufacturer's instruction for the cleaning of steam sterilization machine, the daily maintenance and the validation test for steam sterilization.

##### Dry-heat sterilization

There are two types of dry-heat sterilizers: the static-air type (i.e., oven) and the forced-air type.



- Use dry heat only for the instruments that cannot be sterilized by steam (e.g., sharp reusable instruments) based on the manufacturer's instructions.
- Allow the load to cool prior to handling or use.

### **Liquid chemical sterilization**

In all dental and other health-care settings, indications for the use of liquid chemical germicides to sterilize instruments are limited.

- Use liquid chemical germicides to sterilize only semicritical instruments that cannot withstand steam or heat sterilization, and are not available as single-use instruments.
- Choose only chemical germicides that have Drug Identification Numbers (DIN) from Health Canada.
- Follow the manufacturer's instructions to achieve sterilization of instruments.
- Instruments sterilized by chemical solutions are not wrapped and therefore must be used immediately or stored in a sterile container.
- Have ventilation systems appropriate to the process/product being used, to protect staff from toxic vapours.
- Comply with Ontario regulations (e.g., *Reg. 833, Control of Exposure to Biological or Chemical Agents*) under the *Occupational Health and Safety Act*.

### **Monitoring the Sterilization Process**

The sterilization process must be monitored to ensure the integrity of the process. Performance monitoring includes:

- Physical indicators must be checked, documented and signed for each sterilizer cycle by the person sterilizing the instrument. Physical indicators may include:
  - mechanical printouts from the sterilizer.
  - assessing the cycle time, temperature, and pressure of sterilization equipment by observing the gauges or displays on the sterilizer.
- A biological indicator (spore test) must be used to test the sterilizer at least weekly.
- An internal chemical indicator must be placed inside each package, container or bundle that is undergoing sterilization.
- If a dynamic air removal-type sterilizer is used, an air removal test with a Class II chemical indicator shall be performed every day the sterilizer is used.

### **Sterilization failures**

If failure of any parameter is detected, consider the sterilization cycle unsatisfactory.

- Remove the load, allow the load to cool before re-packaging for re-sterilizing later.
- Document as a failed cycle and repeat the sterilization cycle with an empty chamber.
- If the repeated process indicates success, there is no indication of a system malfunction, continue as normal.
- Re-sterilize the failed cycle load once the results of the sterilizer indicators are acceptable.

## 2.6

### Step 4: Storage of Reusable Instruments

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You shall ensure instruments are protected from contamination during storage and before reuse.

#### GUIDANCE

- Store instruments in a clean, dry, dust-free area (close shelves), outside the contaminated zone, and handle minimally before use.
- Do not store instruments under sinks or in other locations where they might become wet and contaminated.
- Before using a packaged instrument, check the integrity of the pack:
  - Visually inspect for discolouration, dampness, dust, soil, tears; if present, send for reprocessing.
  - Validate results of chemical tape and internal monitors, if present (e.g., no change in colour), send for reprocessing.

# Part 3:

## Blood or Body Fluid Exposure Management

Blood or body fluid exposure is an event where a person is exposed to potentially infectious blood or body fluid of others through the following:

- Percutaneous exposure: where the skin is punctured accidentally by a sharp object potentially contaminated with blood or body fluid of others.
- Mucous membranes exposure: where the mucous membranes are exposed to direct contact with blood or body fluid of others.
- Non-intact skin: where the integrity of the skin is compromised (e.g., scratches, cut, open wound, abrasion, burns, or eczema) and the skin is exposed to direct contact with blood or body fluid of others.

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### 3.1 Blood or Body Fluid Exposure Management

All blood and body fluids shall be treated as infectious because a person with bloodborne infection can be asymptomatic or unaware of the infection. Saliva has always been considered a potentially infectious material in dental infection control. Transmission of bloodborne viruses such as hepatitis B, hepatitis C and Human Immunodeficiency Virus (HIV) are the main concerns.

Preventive practices used to reduce the exposures, particularly percutaneous exposures, include:

- Careful handling of sharp instruments
- Handwashing
- Use of Personal Protective Equipment (PPE) (e.g., gloves, masks, protective eyewear, and gowns)

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**You shall immediately follow appropriate procedures in the event of accidental exposure to blood or body fluids. This will minimize the risk of transmission of infectious diseases.**

#### GUIDANCE

##### **In the event of blood or body fluid exposure:**

- Stop working immediately and apply first aid care to the wound.
- Inform the exposed person of the incident.

##### **First aid care**

Apply first aid care to the exposed person following a blood or body fluid exposure, if it is exposure of:

##### **Penetrating injury (Wound/needle stick):**

- Allow the wound to bleed briefly and freely.
- Do not promote bleeding by squeezing the wound. This may damage the tissues and increase uptake of any pathogen(s).
- Wash with soap and water (do not apply bleach to wound) and bandage as needed.

##### **Mucous membrane or eye:**

- Rinse well with water or normal saline (remove contact lenses after rinsing the eye and clean normally).

##### **Intact skin:**

- Wash with soap and water.

##### **Management of blood or body fluid exposure**

- Refer the exposed person for immediate advice to her/his family physician, an infectious disease specialist or the hospital emergency department depending on severity.
- Test to determine if they have been susceptible to hepatitis B, hepatitis C or HIV.
- Inform the source patient of the incident.

- Document the following:
  - Name of the exposed person and details regarding her/his vaccination status.
  - Date and time of the exposure.
  - Type of exposure (i.e., percutaneous injury, mucous membrane or non-intact skin exposure), nature of the incident, and how it occurred.
  - Type of fluid (e.g., blood, visibly bloody fluid, other potentially infectious fluid).
  - Length of time since fluids left source's body (minutes).
  - Name of the source patient and details regarding his or her known or suspected status related to bloodborne pathogens. The source patient consent or refusal, for medical advice.
  - Actions taken; including who was informed and when.

**Information only:**

If necessary, post-exposure prophylaxis should be administered as soon as possible:

- In the event of a high-risk exposure to hepatitis B without immunization, it would likely be recommended to receive a single dose of hepatitis B immunoglobulin within 48-72 hours and start a course of hepatitis B immunization.
- In the event of a high-risk exposure to HIV infection, anti-retroviral drugs should be administered within hours.
- There is no effective post-exposure prophylaxis for hepatitis C. However early pre-emptive therapy may be offered if you receive a positive test result for hepatitis C RNA following testing at 1 month post-exposure.

# Part 4:

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## Training and Documentation

## 4.1 Training

Regular education (including orientation and training) and support must be provided in all dental laboratory settings to help dental laboratory personnel (including non-registered and registered dental technologists) consistently implement and maintain appropriate infection prevention and control practices.

**18** You shall be up to date on the current knowledge of infection prevention and control.

### GUIDANCE

- Maintain current knowledge of infection prevention and control by refreshing your knowledge on the infection prevention and control:
  - when starting in a new practice.
  - at least annually (e.g., participating in continuing education).
  - after a safety incident.
- Educate dental laboratory personnel/staff about infection prevention and control where appropriate (e.g., new hires, after a safety incident).

## 4.2 Documentation

**19** You shall ensure your infection prevention and control record keeping is kept and readily accessible.

### GUIDANCE

- Keep any laboratory records for a minimum of 10 years – including any health and safety related documents.
- Should any dental laboratory personnel or staff attend training, orientations, courses or professional development activities, it is advisable to document the dates, persons attending and topics covered for your record keeping.
- Document any health and safety incident records according to the *Part 3: Blood and Body Fluid Exposure Management*.
- It is advisable (if possible) to maintain immunization status records for dental laboratory personnel and note whether an individual has been vaccinated for Hepatitis B.

# Glossary of Terms

**Alcohol-Based Hand Rub:** An alcohol-containing preparation (e.g., liquid, gel or foam formulation) designed for reducing the number of viable microorganisms on the hands.

**Antiseptic:** A chemical agent that destroys microorganisms on human skin or mucosa.

**Bacterial spore:** A form assumed by some bacteria that are resistant to heat, drying and chemicals. Under the right environmental conditions, the bacterial spore may revert to the actively multiplying form of the bacteria.

**Bioburden:** Microbiological load (i.e., number of viable organisms in or on an object or surface) or organic material on a surface or object before decontamination, or sterilization.

**Biological Indicator (BI):** A test system containing viable microorganisms providing a defined resistance to a specified sterilization process.

**Bloodborne infections:** Infections spread through infected blood or body fluids, (e.g., human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV)).

**Bloodborne pathogens:** Pathogenic microorganisms that may be present in human blood and can cause disease in humans. These pathogens include, but are not limited to human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV).

**Body fluids:** Fluids produced by the human body, including tears, saliva. People who come in contact with human body fluids may be exposed to health risks (e.g., HIV, HBV and HCV).

**Chemical Indicator (CI):** A 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 physical removal of contamination (e.g., soil, debris and organic material). Cleaning physically removes rather than kills microorganisms. It is accomplished with water, detergents and mechanical action. Thorough cleaning is required before disinfection and/or sterilization.

**Contact Time:** The defined time for which surfaces of the receiving items or the dental instruments (e.g., articulators, facebows, shade guides) are exposed to a chemical or thermal disinfection process to achieve the appropriate level of disinfection.

**Critical Instruments:** Dental instruments that enter sterile tissues, including the vascular system (e.g., surgical instruments and periodontal scalers) are not used in a dental laboratory setting. Critical instruments present a high risk of infection if the instruments are contaminated with any microorganism, including bacterial spores. Reprocessing critical instruments involves meticulous cleaning followed by sterilization.

**Cross-contamination:** The transfer of contamination from a contaminated source to a previously noncontaminated zone.

**Decontamination:** The process of cleaning, followed by the inactivation of microorganisms, in order to render an object safe for handling, use, or disposal.



**Dental Laboratory Personnel:** Individuals who work in a dental laboratory setting, whether paid or unpaid, who have the potential for exposure to infectious materials, including body substances, contaminated dental supplies and equipment, contaminated shipping materials, contaminated environmental surfaces, or contaminated air.

**Dental Laboratory Setting/Dental Technology Setting:** Any location where dental technology services are provided, including dental laboratories or other professional offices.

**Detergent:** A synthetic cleansing agent that can emulsify oil and suspend soil. A detergent contains surfactants that do not precipitate in hard water and may also contain protease enzymes and whitening agents.

**Disinfectant:** A chemical agent used on inanimate objects (e.g., dental instruments, receiving items, floors, walls, or sinks) to destroy virtually all recognized pathogenic microorganisms, but not necessarily all microbial forms (e.g., bacterial spores).

**Disinfection:** The inactivation of disease-producing microorganisms. Disinfection does not destroy bacterial spores. Dental instruments must be cleaned thoroughly before effective disinfection can take place. See also, *Disinfectant*.

**Drug Identification Number (DIN):** In Canada, disinfectants are regulated as drugs under the Food and Drugs Act and Regulations. Disinfectant manufacturers must obtain a drug identification number (DIN) from Health Canada prior to marketing, which ensures that labelling and supporting data have been provided and that it has undergone and passed a review of its formulation, labelling and instructions for use.

**Enzymatic Cleaner:** A pre-cleaning agent that contains protease enzymes that break down proteins such as blood, body fluids, secretions and excretions from surfaces and equipment. Most enzymatic cleaners also contain a detergent. Enzymatic cleaners are used to loosen and dissolve organic substances prior to cleaning.

**High-Level Disinfection (HLD):** The level of disinfection required when processing semicritical instruments. High-level disinfection processes destroy vegetative bacteria, mycobacteria, fungi and enveloped (lipid) and non-enveloped (non-lipid) viruses, but not necessarily bacterial spores. Dental instruments must be thoroughly cleaned prior to high-level disinfection.

**High-Level Disinfectant:** A chemical agent that achieves high-level disinfection when applied to surfaces or reusable instruments. Do not use high-level disinfectants/ liquid chemical sterilants for environmental surface disinfection or as holding solutions.

**Hand Hygiene:** A general term referring to any action of hand cleaning. Hand hygiene relates to the removal of visible soil and removal or killing of transient microorganisms from the hands. Hand hygiene may be accomplished using soap and running water or an alcohol-based hand rub.

**Health Care Setting/Health Care Facility:** Any location where health care is provided, including hospitals, dental offices, denturist offices, independent health facilities, clinics, out-of-hospital premises, settings where emergency care is provided, offices of other health professionals and home health care.

**Immunization:** Process by which a person becomes immune, or protected against a disease.

**Instruments/Dental Instruments:** Any dental instruments, devices or equipment whether used alone or in combination, in a dental laboratory setting.

**Indicator:** A system that reveals a change in one or more of the sterilization process parameters. Indicators do not verify sterility, but they do allow the detection of potential sterilization failures due to factors such as incorrect packaging, incorrect loading of the sterilizer, or equipment malfunction. See also, *Biological Indicator* and *Chemical Indicator*.

**Low-Level Disinfection (LLD):** Level of disinfection required when processing noncritical instruments. Instruments must be thoroughly cleaned prior to low-level disinfection.

**Low-Level Disinfectant:** A chemical agent that achieves low-level disinfection when applied to surfaces or reusable instruments. This disinfection level is required when processing noncritical instruments or contaminated environmental surfaces.

**Manufacturer:** Any person, partnership or incorporated association that manufactures and sells dental or medical instruments, equipment or devices under its own name or under a trade mark, design, trade name or other name or mark owned or controlled by it.

**Mucous Membrane Exposure:** Contact of mucous membrane (e.g., mucous membranes of eyes, nose, mouth) with blood or body fluid of others.

**Noncritical Instruments:** Instruments that either touch only intact skin (but not mucous membranes) or do not directly touch the patient. Reprocessing of noncritical instruments involves cleaning and may also require low-level disinfection if visibly soiled or contaminated.

**Non-Intact Skin:** Areas of the skin that have been opened by scratches, cuts, abrasions, dermatitis, chapped skin, etc.

**Non-Intact Skin Exposure:** Contact of non-intact skin with the blood or body fluids of others.

**Non-Registered Staff:** Anyone who is not registered in College of Dental Technologists of Ontario (CDTO) and conducting activities in dental laboratory settings where dental technology services are provided.

**Penetrating Injury/Percutaneous Injury:** An exposure event occurring when any sharp object penetrates the skin.

**Percutaneous Exposure:** where the skin is punctured accidentally by a sharp object (e.g., needle, sharp instrument) potentially contaminated with blood or body fluid of others.

**Personal Protective Equipment (PPE):** Wearable equipment that is designed to protect healthcare personnel from exposure to potentially infectious agents and hazards.

**Practitioner:** Any person delivering care to a patient. This includes, but is not limited to, the following: Dental technologists, dentists, physicians, nurses, respiratory therapists and other health professionals. In some non-acute settings, volunteers or students might provide care under supervision of registered practitioners and would be included as practitioners. See also, *Staff*.

**Prion:** Protein particle lacking nucleic acid that has been implicated as the cause of certain neurodegenerative diseases (e.g., scrapie, CJD, and bovine spongiform encephalopathy [BSE]).

**RDT:** A dental technologist who is registered with the College of Dental Technologists of Ontario (CDTO) is called Registered Dental Technologist (RDT). As dental technology is a regulated health care profession, it is illegal for anyone other than a member of CDTO to use the restricted title or its abbreviation or variation.

**Reprocessing:** The steps performed to prepare used dental instruments for use (e.g., cleaning, disinfection, sterilization).

**Reusable:** A term given by the manufacturer of dental or medical instruments that allows it, through the selection of materials and/or components, to be reused.

**Semicritical Instruments:** Dental instruments that come in contact with non-intact skin or mucous membranes but ordinarily do not penetrate them (e.g., shade guide, facebow, and reusable dental impression trays). Sterilization by heat is always the preferred method of reprocessing semicritical instrument. However, for instruments that cannot tolerate heat, high level disinfection must be used.

**Sharps:** Items that may penetrate the skin and are capable of causing punctures or cuts (e.g., blades, burs, needles, orthodontic wires).

**Single-Use/Disposable:** A term given to dental instruments designated by the manufacturer for single-use only. Single-use instrument must not be reprocessed.

**Staff:** Anyone conducting activities in settings where health care is provided, including but not limited to, health care providers. See also, *Health Care Providers*.

**Sterilant:** A chemical used on dental instruments which results in sterilization of the instruments. Do not use sterilants or high-level disinfectants for environmental surface disinfection or as holding solutions.

**Sterilization:** The level of reprocessing required when processing critical instruments. Sterilization results in the destruction of all forms of microbial life including bacteria, viruses, spores and fungi. Instruments must be cleaned thoroughly before effective sterilization can take place.

**Ultrasonic Cleaner:** A machine that cleans reusable instruments by the cavitations produced by ultrasound waves.

**Vaccination:** process of administering a killed or weakened infectious organism or a toxoid.

**Washer-Disinfector:** A washing system that removes soil and cleans reusable instruments prior to high-level disinfection or sterilization. A washer-disinfector can provide low-level disinfection. Noncritical instruments that do not require high-level disinfection or sterilization may be reprocessed in a washer-disinfector (e.g., articulators and case pans).

**Workplace Hazardous Materials Information System (WHMIS):** The Workplace Hazardous Materials Information System (WHMIS) is Canada's national hazard communication standard. The key elements of the system are cautionary labelling of containers of WHMIS 'controlled products', the provision of Material Safety Data Sheets (MSDSs) and staff education and training.

# Additional Resources

***Best Practices for Cleaning, Disinfection and Sterilization of Medical Equipment/Devices in All Health Care Settings, 2013***

Provincial Infectious Diseases Advisory Committee (PIDAC), Public Health Ontario  
[https://www.publichealthontario.ca/en/eRepository/PIDAC\\_Cleaning\\_Disinfection\\_and\\_Sterilization\\_2013.pdf](https://www.publichealthontario.ca/en/eRepository/PIDAC_Cleaning_Disinfection_and_Sterilization_2013.pdf)

***Best Practices for Environmental Cleaning for Prevention and Control of Infections, 2012***

Provincial Infectious Diseases Advisory Committee (PIDAC), Public Health Ontario  
[https://www.publichealthontario.ca/en/eRepository/Best\\_Practices\\_Environmental\\_Cleaning\\_2012.pdf](https://www.publichealthontario.ca/en/eRepository/Best_Practices_Environmental_Cleaning_2012.pdf)

***Best Practices for Hand Hygiene in All Health Care Settings, 2014***

Provincial Infectious Diseases Advisory Committee (PIDAC), Public Health Ontario  
<https://www.publichealthontario.ca/en/eRepository/2010-12%20BP%20Hand%20Hygiene.pdf>

***Canadian Immunization Guide for 2006***

Public Health Agency of Canada  
<http://publications.gc.ca/collections/Collection/HP40-3-2006E.pdf>

***Decontamination of Reusable Medical Devices (CSA Z314.8-08, 2008) (CSA Z314.8-14), 2014***

Canadian Standards Association  
<https://www.scc.ca/en/standardsdb/standards/27342>

***Guideline C-4: The Management of Biomedical Waste in Ontario, 2009***

Ontario Ministry of the Environment  
<https://www.ontario.ca/document/management-biomedical-waste-ontario>

***Infection Prevention and Control in Dental Office, 2010***

Royal College of Dental Surgeons of Ontario  
<http://www.rcdso.org>

***Summary of Infection Prevention Practices in Dental Settings Basic Expectations for Safe Care, 2016***

Centers for Disease Control and Prevention  
<https://www.cdc.gov/oralhealth/infectioncontrol/pdf/safe-care2.pdf>

***Routine Practices and Additional Precautions in All Health Care Settings, 2012***

Provincial Infectious Diseases Advisory Committee, Ontario Ministry of Health and Long-Term Care  
[https://www.publichealthontario.ca/en/eRepository/RPAP\\_All\\_HealthCare\\_Settings\\_Eng2012.pdf](https://www.publichealthontario.ca/en/eRepository/RPAP_All_HealthCare_Settings_Eng2012.pdf)

***Workplace Hazardous Materials Information System (WHMIS): A Guide to the Legislation, 2008***

Ontario Ministry of Labour  
<http://www.labour.gov.on.ca/english/hs/pubs/whmis/index.php>