

Faculty of Dentistry



INFECTION CONTROL MANUAL

Infection Control Manual

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Revised July 2013

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Faculty Policies

The Faculty of Dentistry holds to the intent of and directives from the Canadian Dental Association, the Canadian Dental Hygienists Association and Dalhousie University with respect to the optimal treatment of Patients.

CDHA Infection Control Practice Guidelines

The Canadian Dental Hygienists Association recommends adherence to guidelines for infection control as the most effective way for dental hygienists to protect themselves and their clients, and to provide safe and ethical care to the public (Canadian Journal of Dental Hygiene. 2008; 42, no.2: 63-103 and 2008; 42, no.3: 139-152).

CDA Position on Access to Oral Health Care for Canadians (2010)

The CDA, as the body that advocates for the principal providers of oral health care, recommends the development of a national action plan to reduce the barriers to access to dental care. The action plan should incorporate the following goals and principles:

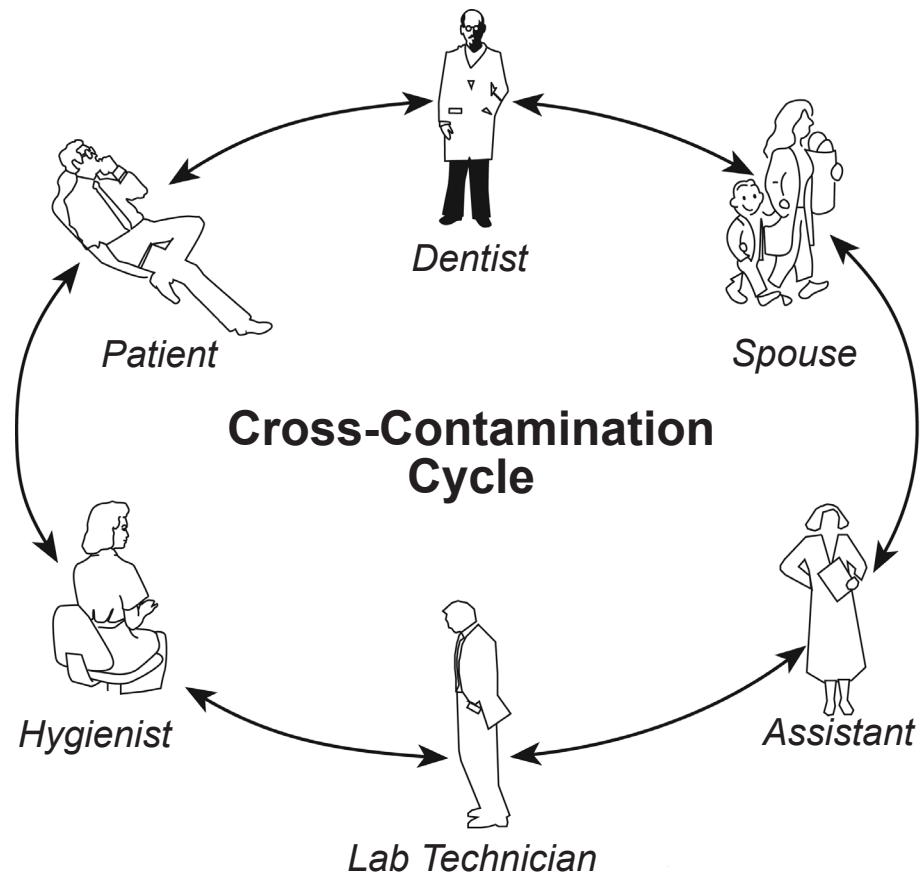
- Oral health is an integral part of general health;
- All Canadians have the right to good oral health;
- Dental caries (decay) is a preventable chronic disease;
- A collaborative approach is needed among oral health care providers, medical and other health care providers, along with provincial and federal health departments and educators;
- Dentists, as the oral health experts in Canada, play a primary role in planning and implementing recommendations and initiatives to prevent and manage oral disorders;
- Creating new minimum mandatory standards for Canadian dental public health programs and providing sufficient resources to meet these standards; and
- Alternative models of care or funding should be explored to alleviate access to care inequities.

Infection Control Program

The following is the Infection Control Program used by Faculty of Dentistry, Dalhousie University.

Objectives

1. Reduce the number of available pathogenic microbes to a level where the normal resistance mechanisms of the body can prevent infection.
2. Break the circle of infection and eliminate cross-contamination.
3. Treat every patient or instrument as a possible source of infectious disease transmission.
4. Protect patients and dental personnel from infection and its consequences (Runnells, 1984).



Immunization for Dental Health Care Personnel

All dental personnel (students, staff, and faculty) who provide patient care or handle items contaminated with patients' blood or body fluids must be immunized against **Influenza, Tetanus/Diphtheria, Measles/Mumps/Rubella, Polio, and Varicella**.

All Dental Health Care Personnel (DHCP) at risk must also be immunized against **Hepatitis B virus**. A series of three injections is given at 0, 1, and 6 months. Antibody testing to determine serologic response is performed 1-2 months after completion of the vaccine series. If vaccination did not result in sufficient anti-HBs (>10mIU/mL) a second series is administered (NACI 2006). Booster vaccination against Hepatitis B is not necessary if one has developed adequate antibodies to Hepatitis B surface antigen (anti-HBs).

DHCP are considered to be at an increased for contracting and transmitting the **influenza virus**. The seasonal influenza vaccine is offered free of charge to all residents of Nova Scotia. It is available from personal physicians or walk-in clinics. All DHCP are required to receive annual influenza immunization, unless it is against the advice of their physician.

An initial **two-step Tuberculin skin test** must be performed on all DHCP to determine previous exposure (Public Health Agency of Canada, 2007).

Documentation of current immunization status must be provided prior to enrollment or employment.

See **Appendix A** for more details.

Medical Conditions, Work-Related Illness and Work Restrictions for Dental Health Care Personnel

DHCP should refrain from providing patient care if any of the following conditions are present:

- Gastro-intestinal Disturbance.
- Chicken Pox or Shingles.
- Fever or Flu.
- Conjunctivitis.
- Draining Lesions.

The decision to restrict work or clinical activity must be made in consultation with the Assistant Dean of Clinical Affairs and attending physician. **See the Dalhousie University, Faculty of Dentistry, Policy on Students and Student Applicants with Infectious Diseases, 2009 and the Policy on Faculty and Clinical Support Staff with Infectious Diseases, 2009** for further information.

Infection Control Procedures

Before Patient Treatment

- ▶ Handwashing
- ▶ Cubicle Preparation
- ▶ Taking Medical History
- ▶ Patients with Herpetic Lesions
- ▶ Patients with Latent Tuberculosis
- ▶ Patients with MRSA
- ▶ Patients with Body and Head Lice
- ▶ Patients Exposed to Bed Bugs
- ▶ Medically compromised patients
- ▶ Performing Oral Exam (Head and Neck)
- ▶ Practicing Respiratory Hygiene / Cough Etiquette

▶ Handwashing

Hands must be cleaned before and after treating each patient, after handling contaminated items, after blowing your nose or using the toilet, and before eating or handling food (CDC, 2002).

All dental health care personnel who have exudative lesions or weeping dermatitis on hands or forearms must refrain from all direct patient contact and from handling patient care equipment until the condition is resolved.

Alcohol-Based Handrub Technique

Perform each time gloves are removed:

- Hands must be dry and free of visible dirt.
- Do not use if there are cuts or open sores on hands.
- Dispense a sufficient quantity of antiseptic into the palm of one hand.
- Rub hands together for 1 minute to completely wet all surfaces of the hands and fingers.
- Reapply if hands are dry within 10 – 15 seconds.
- Antiseptic is flammable, avoid contact with open flame or high temperature.

Handwashing Technique

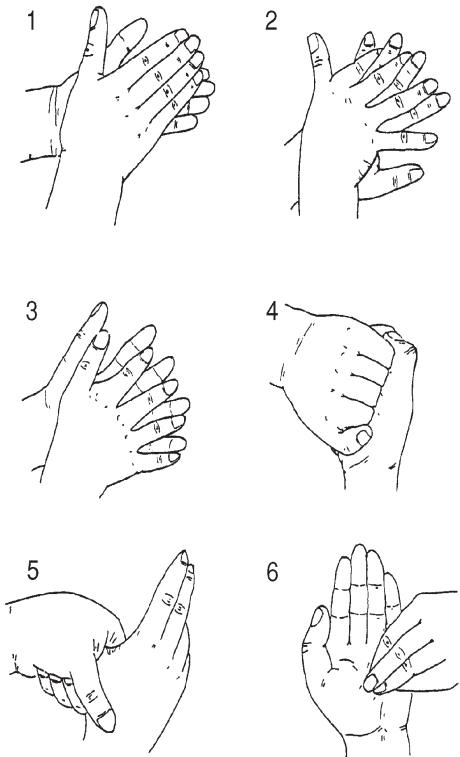
Perform on entering and leaving the clinic and anytime hands are visibly soiled with dirt or heavily contaminated with blood, secretions, or microorganisms.

- Remove all jewelry from hands and forearms (rings, watches, bracelets).
- Fingernails should be kept short and cleaned regularly.
- Nail polish and artificial fingernails harbour microorganisms and may not be worn.
- Wash hands with cleanser for 3 minutes using anatomic scrub technique.
- End with a cold water rinse to close the pores.
- Pat hands and wrists dry with paper towels.
- Cuts and sores on hands must always be covered.

Anatomic Scrub Technique

To do the job thoroughly you need to clean these 6 surfaces:

- 1) the palms
- 2) the webs between the fingers
- 3) the webs again with altered grip
- 4) palms to knuckles of opposing hands
- 5) thumbs clasped in opposing palm
- 6) tips of fingers against palm of opposing hand.



(Croser and Chipping, 1989)

► Cubicle Preparation

Water Lines

Flush all water lines for at least 3 minutes at the beginning of the day and for 30 seconds after each patient.

- Wear protective attire (gloves, mask, eyewear).
- Discharge water into sink or evacuation system.

Closed Water Systems

- Only water from a Sterisil System faucet may be used to fill the water bottle of closed systems.
- The faucets are located on Level 1 in the Oral Diagnosis, SciCan, and McLean Center clinics.
- Do not top-up water bottles, instead completely empty before refilling.
- Prior to each patient treatment, the operator will flush each dental unit water line for 30 seconds.

Sterile water

Use sterile water during surgical procedures.

Boil Water Advisory (CDA, June, 2006)

During a Boil Water Advisory, the following precautions should be taken:

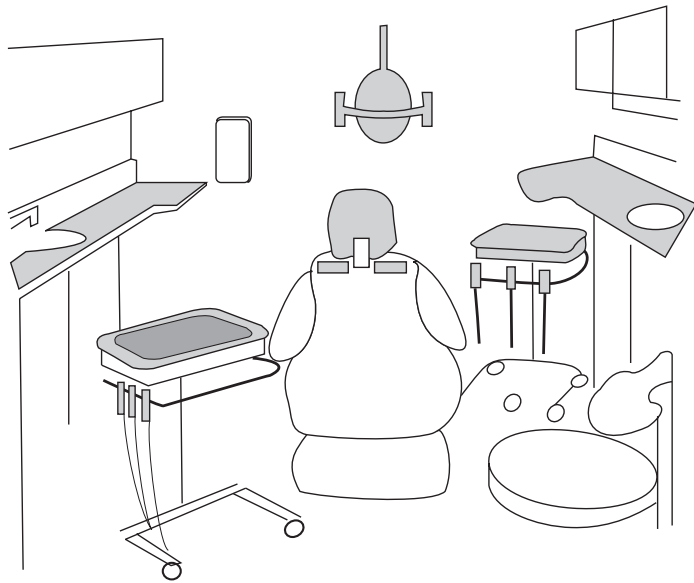
- Public water should not be delivered to the patient through the dental unit, ultrasonic scaler, or other devices and equipment.
- Use alternative water sources through closed water systems.
- Postpone treatment, if necessary.
- Patients should not rinse their mouth with tap water, bottled or distilled water should be used instead.
- Tap water should not be used for hand hygiene. Alcohol-based hand sanitizers can be used. If hands are visibly dirty, they may be washed with bottled water and hand soap.
- When the Boil Water Advisory is cancelled, all incoming public water system lines (taps or other water lines), should be flushed for 1-5 minutes.
- The dental unit waterlines in all dental units and equipment should be disinfected according to the manufacturer's instructions, prior to use.

Operatory Surfaces and Equipment

Always clean and disinfect the dental unit carefully, before treating the first patient of the day and after each patient, to prevent cross-contamination. Cleaning removes visible soil and disinfection kills or destroys all disease-producing micro-organisms except spores. (CDC, 2003)

Protective attire (gloves, mask and eyewear) is to be worn while cleaning and disinfecting.

Prior to cleaning and disinfection, use a paper towel to remove any gross debris from surfaces.



Counters and surface of bracket tables

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant directly to the surface.
- To clean, spread solution over entire area with an absorbent towel.
- To disinfect, re-apply and spread solution over entire area with another towel.
- Allow 3 minutes contact time.
- Allow surfaces to air dry.

Dental Chair

(arm rests, headrest, control switches, light switch and handles)

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to an absorbent towel and clean each item.
- Use a separate towel for each item.
- Re-apply and disinfect each item with another towel.
- Allow 3 minutes contact time.
- When dry, apply clean plastic barriers to headrest and light handles.
- Dental light cover - **let cool** and apply disinfectant with another towel.

Bracket Tables

(pull-handles, control switches, evacuation hoses and holders, handpiece hoses and holders, air/water syringes and holders)

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to an absorbent towel and clean each item.
- Use a separate towel for each item.
- Re-apply and disinfect each item with another towel.
- Allow 3 minutes contact time.
- When dry, apply clean plastic evacuation tips and air/water syringe tip.
- Apply plastic barriers to control panels.

► Cubicle Preparation (Set up)

Handpieces

- Assemble sterilized handpiece and attachments.

Ultrasonic Scalers

- Attach sterilized scaler and tip.

Sterile Instruments

- Open sterile trays and instrument packages immediately prior to use to decrease contamination of contents.

Consumable Supplies

- Bring only those items necessary for treatment into the operator.

Dental Equipment

- Collect all necessary equipment and materials prior to beginning treatment.

Laptop Computer

- Insert behind plastic shield and connect to glass keyboard.

▶ Taking Medical History

Obtain a thorough medical history at the initial examination and review during recall visits. Include specific questions about (ADA+C, 2010):

- New cough or shortness of breath
- New fever or chills in the last 24 hours
- New onset diarrhea
- New undiagnosed rash, lesion, or break in skin
- Recent exposure to communicable infectious disease (e.g. measles, chicken pox, or tuberculosis)
- History of joint prostheses procedures in the past two years
- History of antimicrobial therapy
- Family history of prior disease, or symptoms that may be indicative of CJD, such as sudden onset dementia
- Recent travel to areas where endemic diseases are present
- Immunization history

▶ Patients with Herpetic Lesions

Patients who have a history of recurrent herpetic lesions should be advised to contact their oral health care provider if they have a herpetic lesion present before their appointment (Cleghorn, 2005). See **Appendix (B)** for treatment restrictions.

▶ Patients with Latent Tuberculosis

(CDC, 2011)

Patients who present with a history of Latent Tuberculosis:

- Have TB bacteria in their body that are alive, but inactive
- Cannot spread TB bacteria to others
- Do not feel sick and do not have any symptoms
- Have a positive reaction to a tuberculin skin test or blood test
- Have a normal chest x-ray and negative sputum test
- May develop TB in the future and require medical evaluation

▶ Patients with Methicillin-Resistant Staphylococcus aureus (MRSA)

(Public Health Agency of Canada, 2008)

Agent:

Staphylococcus aureus is a bacteria, which is commonly present on the skin and in the nose of healthy people. Staph bacteria that are resistant to the antibiotic methicillin are known as MRSA. If antibiotics are prescribed to treat infections unnecessarily or individuals do not complete their prescription, infections can develop a resistance to antibiotics.

Staph infections, including Methicillin-Resistant Staphylococcus aureus, (MRSA) can occur among persons in hospitals and healthcare facilities, who have weakened immune

systems. Staph and MRSA can also cause infections among persons living in the community.

Transmission:

Staphylococcus aureus and MRSA can be carried from one person to another on the unwashed hands of dental health care providers and on contaminated patient equipment .

Prevention Measures:

- Hands are to be washed with soap and water or an alcohol hand sanitizer before and after patient treatment.
- All common patient equipment that has direct contact with a patient’s skin (e.g. BP cuff, stethoscope, wheelchair) is to be disinfected after each use.
- Environmental cleaning of clinical areas is to be carried out on a regular basis.

▶ **Patients with Body or Head Lice**

Body lice infestations are spread by close person-to-person contact, but are generally limited to persons, who live under conditions of crowding and poor hygiene. Improved hygiene and access to regular changes of clean clothes is the only treatment needed (CDC 2010).

Head lice are spread most commonly by direct head-to-head contact. Treatment with a pediculicide is recommended for persons diagnosed with an active infection. Additional measures are to wash and dry hats, scarves, pillow cases, bedding, towels, and clothing worn by the person in the 2 days prior to treatment (CDC 2010).

Patients should have completed necessary treatment and be free of infestations prior to dental treatment.

▶ **Patients with Exposure to Bedbugs**

Bed bugs are not known to spread disease. Everyone is at risk for getting bed bugs when visiting an infected area. Bed bug infestations are commonly treated by insecticide spraying (CDC, 2010).

Bed bug bites usually do not pose a serious medical threat. The best way to treat a bite is to avoid scratching the area and apply antiseptic creams or lotions and take an antihistamine (CDC, 2010).

Patients should receive treatment for bed bug bites prior to seeking dental treatment.

▶ **Medically compromised patients**

Students should carry out the following activities for all patients receiving treatment for a significant medical problem:

- Identify the problem from the Health Questionnaire.
- Review the history of the problem with the patient.
- Document the problem in the chart.
- Investigate dental implications of the problem.
- Communicate with the patient's physician prior to treatment.

▶ **Performing Oral Exam
(Head and Neck)**

Perform a thorough oral examination on all new patients seen in the clinic. Oral examination must be repeated during each recall appointment.

► Respiratory Hygiene/Cough Etiquette

In an attempt to prevent the transmission of respiratory infections (influenza, SARS, tuberculosis etc.), the Centers for Disease Control (2012) has drafted measures to be implemented by health care facilities, at the first point of patient contact.

Posting Visual Alerts

Post signs at the entrance to the health care facility instructing patients and persons who accompany them, to;

- Inform DHCP of symptoms of a respiratory infection, when they register for care, and
- Practice Respiratory Hygiene/Cough Etiquette.

Masking and Separation of Persons with Respiratory Symptoms

During periods of increased respiratory infection in the community, offer masks to persons who are coughing. Either procedure masks or surgical masks may be used to contain respiratory secretions.

Practicing Droplet Precautions

Advise DHCP to wear a procedure or surgical mask when examining a patient with symptoms of a respiratory infection, particularly if fever is present.

Practicing Respiratory Hygiene / Cough Etiquette

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

- Cover the nose/mouth when coughing or sneezing.
- Use tissues to contain respiratory secretions and dispose of them in nearest waste receptacle.
- Perform hand hygiene (hand washing or alcohol-based hand rub) after contact with respiratory secretions and contaminated objects/materials.
- Provide tissues and no-touch receptacles for used tissue disposal.
- Provide conveniently located dispensers of alcohol-based hand rub; where sinks are available, ensure supplies for hand washing are available.

During Patient Treatment

- ▶ Use of protective attire and barrier techniques to prevent skin and mucous membrane exposure to disease producing organisms.
- ▶ Minimization of Contamination
- ▶ Handling of sharp instruments and needles
- ▶ Management of Needlestick and Mucous Membrane Exposures To Blood and Body Fluids
- ▶ Dental Radiology
- ▶ Intraoral Photography
- ▶ Intraoral Microscope/camera
- ▶ Handling biopsy specimens
- ▶ Laser/Electrosurgery Plumes or Surgical Smoke
- ▶ Decontamination of Clinical Records, Materials and Devices
- ▶ Decontamination of Laboratory Equipment

- ▶ Use of protective attire and barrier techniques to prevent skin and mucous membrane exposure to disease-producing organisms (CDC, 2003).

Gloves

Examination gloves

- Always wear gloves when touching blood, saliva or mucous membranes, and when examining all oral lesions.
- After each patient appointment, remove gloves and clean hands. Replace with a new pair of gloves before treating the next patient and any time a tear or hole is apparent.



Surgical gloves

- Sterile gloves are used during surgical procedures.

Utility gloves

- When touching items or surfaces that may be contaminated with blood and body fluids or secretions, utility gloves are to be worn.
- After each use, wash and dry reusable gloves or discard disposable gloves.

Masks

- Face masks must be worn to protect oral and nasal mucosa from spatter of blood and saliva.
- Face masks must cover and contain all facial hair.
- Contaminated masks should not be placed on forehead or worn under the chin.
- Change the mask between patients or if it gets wet.
- Remove a used mask by the ties or elastic only.
- Masks must be worn by the operator and the assistant during patient treatment.
- Specialty masks are to be worn during the use of the laser or electrosurgery units.
- N95 Respirators are to be worn to treat patients with severe respiratory infections.



Protective Eyewear

- Safety glasses with side shields or face shields are to be used when splashing or spattering of blood and saliva is likely.
- All protective eyewear must be cleaned and dried after each use.
- Protective eyewear must be worn by the patient, the operator, and the assistant during treatment.
- Special eyewear is to be worn during the use of the curing light and laser.
- Persons wearing loupes are responsible for cleaning and disinfection, after each treatment.



Clinic Jackets / Lab Coats

Long sleeve, cuffed clinic jackets are worn to protect the user from injury and the spatter of body fluids.

- Change daily or more often if visibly soiled.
- Clinic jackets and lab coats used for patient treatment are not to be worn outside the clinical area.
- Students must wear scrub pants and shirts to enter a patient treatment area.



▶ **Minimization of Contamination** (CDC, 2003)

Reduce unnecessary contact with surroundings

- Remove unnecessary items from operatory.
- Prepare in advance for the procedure by obtaining all necessary supplies and equipment.
- Avoid touching unprotected switches, handles or other equipment with contaminated gloves.
- Do not enter drawers or cabinets with contaminated gloves
 - i) ask for assistance
 - ii) remove and discard gloves, wash hands and reglove
- Complete chart entries before gloves are put on or after gloves are removed and hands cleaned.
- Use glass keyboard for computer entries.

Reduce aerosols

- An antiseptic oral rinse (0.12% Chlorhexidine Gluconate) may be used prior to ultrasonic scaling to reduce the number of microorganisms in dental aerosols.
- Use high-volume evacuation, proper patient positioning and dental dam whenever appropriate.
- When using the three-way syringe, use water before air.

Reduce microorganisms transferred to patients

- Remind patients not to close their lips around the saliva ejector, especially when the high-volume evacuator is also being used.
- Instruments are no longer sterile if dropped on the floor, or if their outer wrap is wet or torn. Do not use contaminated instruments on patients. They are to be cleaned and sterilized.

▶ **Handling of sharp instruments and needles**

Used needles, scalpel blades and other sharp instruments are considered potentially infective and are to be handled carefully to prevent unintentional injuries (CDC, 2003). To remove a sharp object, use a hemostat or instrument, not your hands.

Needles

- DO NOT recap used needles by hand.
- DO NOT remove used needles from the dental syringe by hand.
- DO NOT bend, break or otherwise manipulate used needles by hand.

Scalpel Blades

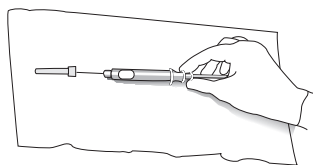
- Remove used blade from handle using blade remover or hemostat.

Dispose of used needles, scalpel blades, and other sharp items in puncture-resistant container, which is available in every cubicle.

During Patient Anaesthesia

Since a patient may require multiple injections from a single syringe the following technique can be used to minimize the likelihood of injury:

- Place the unsheathed needle and dental syringe on a “sterile field”, not on the dental tray. Each syringe packet is wrapped in a sterile napkin intended for this purpose.
- Use the one-handed scoop method to recap syringe.
- Glide the needle into the plastic tip.
- Stand the syringe upright to secure the needle inside the tip.
- Replace the needle each time a new anaesthetic carpule is used. Use a hemostat to remove and discard the needle.



Exposure Prone Procedures

Avoid the simultaneous presence of the operator’s fingers and a needle or other sharp instrument in a poorly visualized or highly confined anatomic site (CDC, 1991).

- Ask for assistance.
- Use an instrument for retraction.
- Position patient for greater visibility/access.

► **Management of Needlestick and Mucous Membrane Exposures To Blood and Body Fluids** (CDC, 2001)

It is the responsibility of the exposed individual to report at the earliest opportunity, all puncture wounds and mucosal exposures to blood and body fluids that occur within the Dalhousie University Faculty of Dentistry Clinics. This is necessary in order for rapid follow-up of the incident and so that decisions may be made for the protection of the exposed individual.

All phases of medical management and counselling should ensure that the confidentiality of the medical data from both the exposed individual and the source is protected (CDC, 2001).

An Exposure Has Occurred If You Receive

- A laceration or puncture wound from a needle or sharp instrument contaminated with blood/body fluid.
- If blood/body fluid splashes into your eyes, non-intact skin, or the mucous membrane of your nose and mouth.

Stop the Procedure and Apply First Aid

- Wash contaminated skin with soap and water.
- Flood eyes with water from Eye Wash Station.
- Flush mucous membranes of nose and mouth with water.

See Infection Control Nurse or Assistant Dean of Clinical Affairs

- An assessment of the exposure will be done using Checklist A (see Appendix C).
- An assessment of the source patient will be done using Checklist B (see Appendix C).

Low Risk Exposure

- No further action required.

High Risk Exposure

- Infection Control Nurse or Assistant Dean of Clinical Affairs will provide counseling to source patient and receive consent for blood work.
- Exposed individual and source patient will be seen at QE II Health Sciences Centre, Emergency Department.
- Complete Dalhousie University Incident Report within 24 hours of exposure.

Medical Follow-up

The following procedures will be directed by the attending physician:

1. Medical management of the injury.
2. Testing of the source patient for Hepatitis B surface antigen, Hepatitis C antibody, and HIV antibodies with appropriate pre and post counseling and informed consent. Testing of the exposed individual for Hepatitis B surface antibodies (if vaccinated), Hepatitis C antibodies, and HIV antibodies.
3. Determine the need for Post-Exposure Prophylaxis.
4. Documentation of the following information in the exposed individual's confidential medical file:
 - date and time of exposure
 - details of the procedure being performed by individual at time of exposure
 - details of exposure, including amount of fluid or material, type of fluid or material and severity of exposure
 - details of the exposure source.
 - details of counselling, post-exposure management and follow-up.

► Dental Radiology (CDC, 2003)

Taking intra-oral or panoramic radiographs:

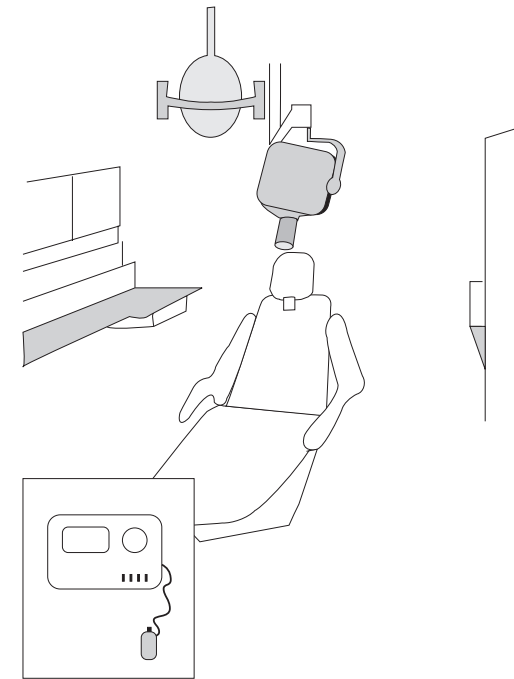
- Record essential information on radiology envelop or in log book.
- Obtain necessary films or phosphor plates with plastic barriers.
- Operator must clean their hands before and after gloving.
- For each patient use a sterile Rinn kit, Endo ray or Snap-A-Ray plate holder, or Panoramic bite pin.

Transporting Exposed Radiographs

- Remove exposed film from patient's mouth and dry outside of packets
- Do not wash or disinfect film packets or phosphor plates
- Remove gloves, wash hands
- Place dried films or plates in a small plastic bag and fold closed
- Place plastic bag inside radiology envelop, seal closed
- Transport films or plates to the darkroom for processing

Preventing Cross-contamination

- Clean and disinfect all surfaces contacted while taking radiographs (control panel, extension cone, tubehead, and exposure button).
- Put on protective attire (gloves, mask, eyewear).
- Apply disinfectant to an absorbent towel and wipe each item.
- Use a separate towel for each item.
- Re-apply and wipe each item with another towel, if visible dirt is seen.
- Allow 3 minutes contact time.



Processing Radiographs in a Daylight Loader or Processor:

- Wear protective attire (gloves, lab coat) to guard against contact with blood and body fluids.
- Place exposed x-ray packet inside Daylight Loader, if using
- Peel open x-ray packet and feed film into the processor
- Remove packet from Daylight Loader, if used
- Completely open packet and let lead foil fall into designated container
- Discard empty packet into the garbage
- Remove gloves and wash hands
- Clean and disinfect all contaminated surfaces as instructed above.

Dropped and used x-ray packets contain lead foil and cannot be discarded in the garbage.

- Return to Radiology Department for proper disposal.

Expired x-ray film contains lead foil and cannot be discarded in the garbage.

- Return to Radiology Department for proper disposal.

Processing Digital Radiographs

- Wear protective attire (gloves, lab coat) to guard against contact with blood and body fluids.
- Remove plates from patient envelop, place on absorbent towel, and discard plastic bag
- Open and drop patient's plates onto file transfer box
- Bundle contaminated barrier envelopes and gloves in towel and discard in garbage
- Scan plates and upload x-ray images
- Remove plates from bottom of scanner
- Clear all plates by placing on the flatbed eraser
- With clean, ungloved hands remove plates from flatbed eraser
- Place plate into a barrier, seal.

▶ Intraoral Photography

- Prepare in advance for photographs by obtaining all supplies including camera equipment, sterilized cheek retractors, and mouth mirrors.
- Handle the camera using clean ungloved hands.
- If assistance is required, the person handling the intra-oral equipment must be gloved.

▶ Intra-oral Microscope/Camera

During patient treatment, the operator should handle only those parts of the microscope/camera which can be cleaned and sterilized (caps on the changer, turning knob, and focusing device). Another person, wearing non-contaminated gloves, can handle other components.

After each patient treatment, clean and sterilize frequently handled parts of the microscope/camera according to the manufacturers instructions.

▶ Handling Biopsy Specimens (CDC, 2003)

- Each specimen is to be placed in a sturdy container with a secure lid to prevent leaking during transport.
- Care must be taken when collecting specimens to avoid contaminating the outside of the container and the laboratory form accompanying the specimen.
- If the outside of the container is visibly contaminated, clean and disinfect before transporting to the Oral Pathology Department.

▶ Laser/Electrosurgery Plumes or Surgical Smoke (CDC, 2003)

During surgical procedures that use a laser or electrosurgery unit, the thermal destruction of tissue creates a smoke byproduct.

Lasers transfer electromagnetic energy into tissues, resulting in the release of a heated plume that includes particles, gases, tissue debris, viruses, and offensive odors.

DHCP should take the following precautions to reduce the potential risk from laser/electrosurgery plumes:

- Use high-filtration surgical masks and possibly full face-shields
- Use high volume evacuation system with a large plastic suction tip placed in close proximity to the operative site.

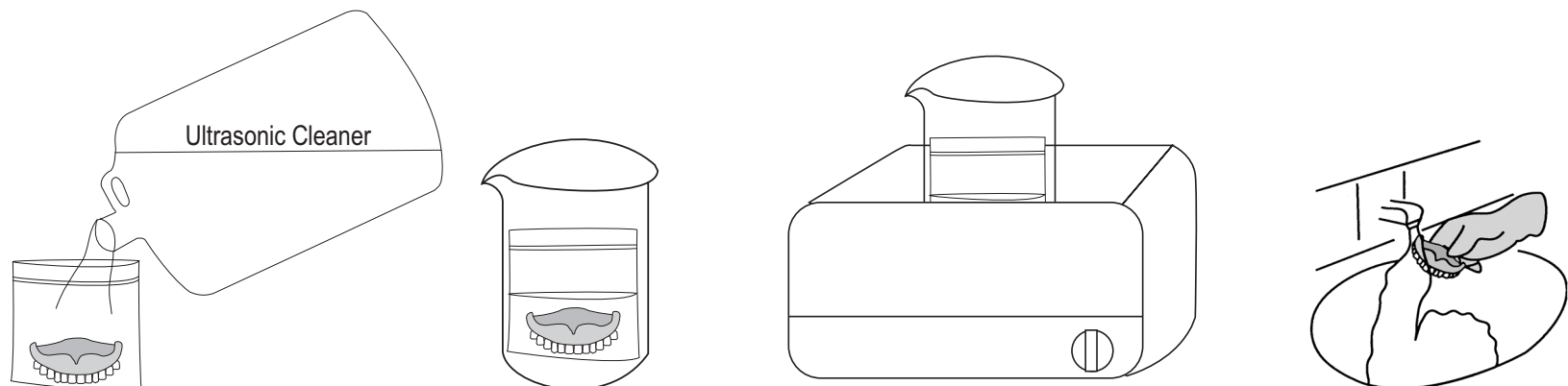
► Decontamination of Clinical Records, Materials and Devices

Impressions and prostheses that have been inserted in a patient's mouth are contaminated with microorganisms. These can be transmitted to dental personnel either by direct contact or as aerosols produced during polishing and grinding procedures (Merchant, 1996).

Decontamination of Prostheses using an Ultrasonic

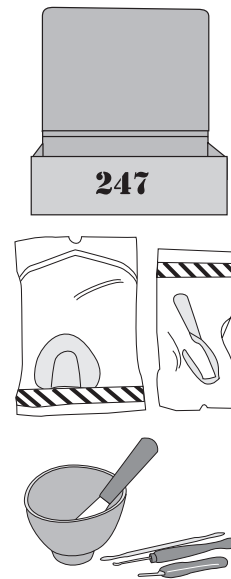
Wear protective attire (gloves, mask, eyewear).

- Place item in zip-lock plastic bag, add appropriate ultrasonic cleaner, and seal bag.
- Operate ultrasonic machine for required time.
- Discard plastic bag and cleaning solution, rinse thoroughly.



Preparing Impressions & Interocclusal Records

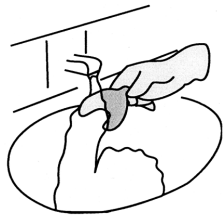
- Put on protective attire (gloves, mask, and eyewear).
- Use a clean lab pan, articulator and facebow for each patient.
- Use a sterile metal impression tray, a disposable plastic tray, or a new custom tray.
- Use a clean mixing bowl and a sterile spatula; disposable mixing pad.



I. Cleaning & Disinfection of Impressions & Interocclusal Records Prior to Lab work (wear gloves)

(Dalhousie Faculty of Dentistry Jan, 2011)

- Remove any cotton rolls embedded in the impression material. Rinse thoroughly with water, gently shake to remove excess water.
- Wet with disinfectant to coat all surfaces.
- Place in sealed plastic bag.
- **After 3 minutes** contact time, rinse thoroughly to remove disinfectant.



II. Orthodontic Appliances, Prostheses & Prosthodontic Materials, which have been in the patient's mouth.

A. Prior to lab adjustments (wear gloves)

- Rinse with water to remove blood and gross debris.
- Wet with disinfectant to coat all surfaces.
- Place in sealed plastic bag.
- After 3 minutes contact time, rinse thoroughly to remove disinfectant.

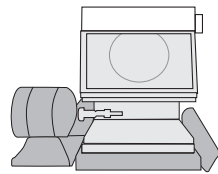
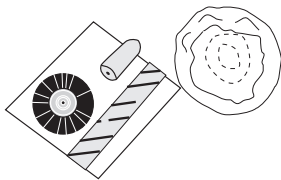
B. Adjustments (Clinic gloves, Lab no gloves)

Grinding:

- Use sterilized acrylic burs and handpiece for adjusting prosthesis.
- Rinse the prosthesis thoroughly before inserting in the patient's mouth.

Polishing:

- Don't wear gloves while using lathe.
- Use a new rag wheel for each case.
- Use a unit dose of pumice, wet with water to make a slurry.
- Polish prostheses.



- Discard rag wheel & remaining pumice.
- Rinse the prosthesis thoroughly before inserting in the patient's mouth

Prior to Use of Steam Cleaner and Sandblaster:

- Rinse and disinfect item.

III. Casts (Disinfect after contact with clinical records/ prostheses - wear gloves).

- Wet with disinfectant to coat all surfaces.
- Place in sealed plastic bag.
- After 3 minutes contact time, allow to air dry.

After Patient Treatment

- ▶ Cleanup Procedure
- ▶ Care of Handpieces, Ultrasonic Scalers, and Air-Water Syringes
- ▶ Equipment Repair
- ▶ Decontamination of Dental Instruments
- ▶ Decontamination of Operatory Surfaces and Equipment
- ▶ Decontamination of Dental Equipment, Materials, and Supplies
- ▶ Decontamination of Environmental Surfaces
- ▶ Decontamination of Laboratory Equipment
- ▶ Disposal of Waste Materials
- ▶ Management of Extracted Teeth
- ▶ Care of Used Protective Attire
- ▶ Medical Device Reprocessing

▶ Cleanup Procedure

Remove contaminated attire (gloves, mask, and eyewear) clean hands, complete chart entries, dismiss the patient.

During the clean-up procedure protective attire must be worn (clinic jacket or lab coat, gloves, mask and glasses).

- Discard disposables (suction tips, air–water syringe tips) in plastic head rest cover along with other patient contaminated waste, tie closed.
- Use a hemostat to place blades, dental needle, syringe tips, glass anaesthetic carpules and sutures into sharps container.
- Damaged, dull, and single use burs are also discarded in the sharps container.
- Remove gross debris (i.e., dental materials, gauze, cotton rolls, sharps) from instruments trays, open hinged instruments, and replace tray cover.
- All heat tolerant items are cleaned and sterilized after each use.

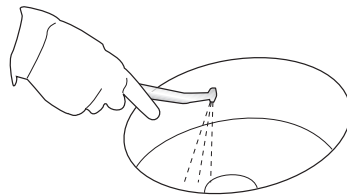
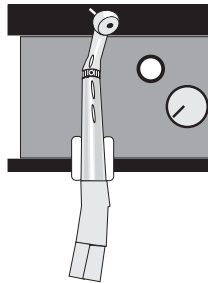
► Care of Handpieces, Ultrasonic Scalers, and Air-Water Syringes

(CDC, 2003)

High Speed Handpieces

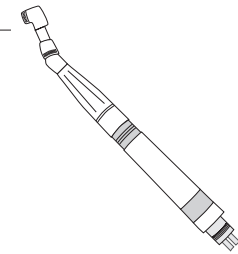
Prepare high speed handpieces for sterilization by completing the following actions.

- Wear protective attire (gloves, mask, eyewear).
- Flush handpiece for 30 seconds, discharge water into sink or evacuation system.
- Remove bur, discard if dull or damaged.
- Return all handpiece components to cassette, close lid.
- Clean and disinfect hose and bracket holder by using 2 separate disinfectant saturated absorbent towels.
- Allow 3 minutes contact time.



Slow Speed Handpieces

Prepare slow speed handpiece for sterilization by completing the following actions.



Latch and Friction Grip Contra Angles

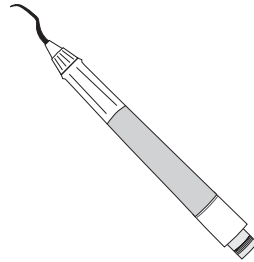
- Wear protective attire (gloves, mask, eyewear).
- Run handpiece for 30 seconds.
- Remove bur, discard if dull or damaged.
- Return all handpiece components to cassette, close lid.
- Clean and disinfect hose and bracket holder by using 2 separate disinfectant saturated absorbent towels.
- Allow 3 minutes contact time.

Prophy Angle

- Wear protective attire (gloves, mask, eyewear).
- Discard prophy cup.
- Run handpiece for 30 seconds.
- Return all handpiece components to cassette, close lid.
- Clean and disinfect hose and bracket holder by using 2 separate disinfectant saturated absorbent towels.
- Allow 3 minutes contact time.

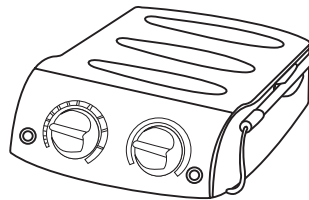
Ultrasonic Scalers

- Wear protective attire (gloves, mask, eyewear).
- Flush scaler for 30 seconds, discharge water into sink or evacuation system.
- Remove tip



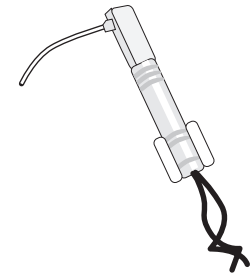
Ultrasonic Device (Cavitron)

- Wear protective attire (gloves, mask, eyewear).
- Flush handpiece for 30 seconds, discharge water into sink or evacuation system.
- Remove ultrasonic scaling insert and handpiece sleeve.
- Clean and disinfect surfaces of console, power cord, handpiece cable, water supply line and foot control using disinfectant saturated absorbent towels.
- Place power cord and foot control in separate plastic bags.
- Return all components to plastic container and secure lid.



Air/Water Syringe

- Discard plastic tip.
- Flush unit by running for 30 seconds, discharge water into sink or evacuation system.
- Clean and disinfect syringe head, water line, and bracket holder by using 2 separate disinfectant saturated absorbent towels.
- Allow 3 minutes contact time.



► **Equipment Repair**

Prior to requesting an equipment technician to carry out a repair, the item must be cleaned and disinfected. Remove sharps and gross debris from the operatory, so that the technician can work safely.

▶ Decontamination of Dental Instruments

Dental Instruments

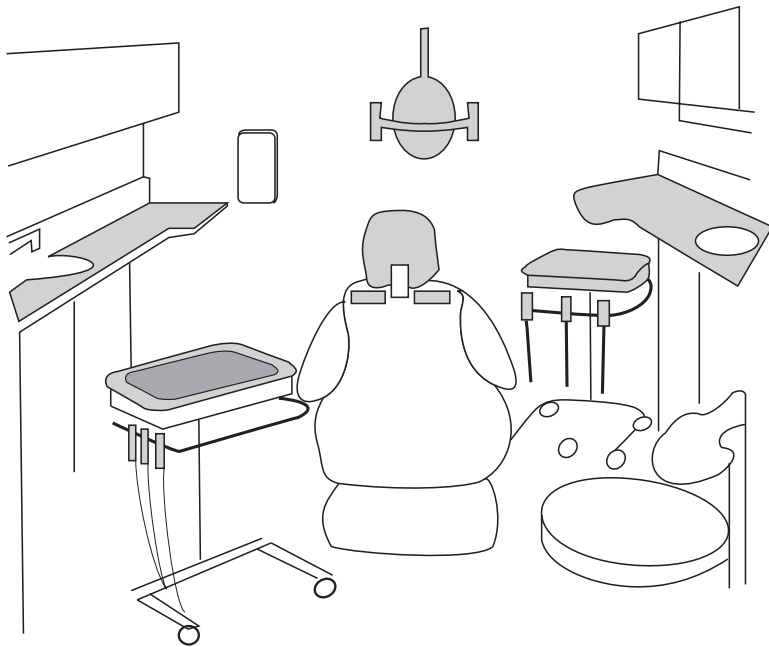
Prior to returning used instruments to the Dispensary or setting them aside for pick-up by staff, follow these steps, to prepare instruments for cleaning and to protect staff from injury.

- Wear protective attire (gloves, mask, eyewear).
- Remove sharps (blades, dental needle, syringe tips, single use and damaged burs, glass anaesthetic carpules, etc.) and discard in sharps container.
- Remove gross debris (cotton rolls, gauze, wedges, pellets, etc.) from instrument tray.
Discard waste in plastic bag, and tie closed.
- Return instruments to cassette, open hinged instruments, secure lid.
- Check counters and the floor for sharps, which may have been left behind.
- Return small items (bur blocks, endo files, etc.) and loose items (impressions trays etc.) to Dispensary contained in a plastic bag.

Surgical Instruments

Immediately after use, remove blood from surgical instruments (Oral Surgery, Perio Surgery, Implants, Biopsy) to reduce the risk of cross-contamination.

- Wear protective attire (gloves, mask, eyewear).
- Remove scalpel blade, suture needle, irrigation syringe tip, single use burs, glass anaesthetic carpules and discard in sharps container.
- Remove gross debris from instrument tray. Discard waste in plastic bag, and tie closed.
- Return instruments to cassette, spray with transport gel, cover.
- Place used instruments in grey plastic bin and cover.
- Immerse forceps and metal suction tip in a detergent solution.



► Decontamination of Operatory Surfaces and Equipment

Clinical Contact Surfaces

Clinical contact surfaces can be directly contaminated from patient materials either by direct spray or spatter generated during dental procedures or by contact with the Dental Health Care Personnel's gloved hands. These surfaces can subsequently contaminate other instruments, devices, hands, or gloves. Examples of such surfaces include: light handles, switches, radiographic equipment, chairside computers, dental materials, drawer handles, countertops, pens, telephones, and doorknobs (CDC, 2003).

Operatory Surfaces and Equipment

Clean and disinfect operatory equipment according to instructions provided by the manufacturer.

Dental assistants and Dispensary staff are to receive training in the proper use, maintenance, and asepsis of new equipment.

Prior to disinfection, use a paper towel to remove any gross debris from surfaces.

Counters and surface of bracket tables

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant directly to the surface.
- To clean, spread solution over entire area with an absorbent towel.
- To disinfect, re-apply and spread solution over entire area with another towel.
- Allow 3 minutes contact time.
- Allow surfaces to air dry.

Dental Chair

(arm rests, headrest, control switches, light switch and handles).

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to an absorbent towel and clean each item.
- Use a separate towel for each item.
- Re-apply and disinfect each item with another towel.
- Allow 3 minutes contact time.
- When dry, apply clean plastic barriers to headrest and light handles
- Dental light cover– **let cool** and apply disinfectant with another towel.
- Use a separate towel for each item.
- Re-apply and disinfect each item with another towel.
- Allow 3 minutes contact time.

Bracket Tables

(pull-handles, control switches, evacuation hoses and holders, handpiece hoses and holders, air/water syringes and holders).

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to an absorbent towel and clean each item.
- When dry, apply clean plastic evacuation tips and air/water syringe tip.

Evacuation System Cleaning

Complete this procedure **after each patient** to prevent backflow from the low volume evacuation and to keep the high-volume evacuation clear of debris.

- Remove disposable tips and discard in plastic bag, tie closed, and place in garbage.
- Dispense evacuation cleaner into 1 liter plastic container.
- Fill container with warm water.
- Draw prepared solution through the evacuation system.
- To clean the high volume evacuation line, prepare another container of cleaning solution and draw through the line.
- Allow solution to remain in line overnight .
- Allow 10 minutes contact time.

Evacuation Traps

Dental Assistant staff will remove disposable/reusable evacuation traps every 6 months.

- Wear protective attire (gloves, mask, and eyewear) to clean or handle evacuation trap.
- Run cleaner through the evacuation system, allow 10 minutes contact time.
- Turn off vacuum, open unit, and discard debris (cotton pellets, floss, etc.) from trap.
- **Do not discard traps or amalgam in the garbage**
- Place used traps and amalgam in pail labeled **“Mercury Waste: Contact Amalgam”** and seal top.
- Place a new trap in the unit.
- If trap is reusable, dry dump amalgam into pail labeled **“Mercury Waste: Contact Amalgam”** and return trap to unit.
- Remove protective attire and wash hands.

Closed Water Systems Maintenance

The Dental Assistant will shock the water bottles, once a month to prevent biofilm from growing inside.

- Empty water from the bottle.
- Drop 2 shock tablets into the 2 litre bottle (1 tablet for 1 litre bottle)
- Fill a clean plastic beaker with 354 ml (12 oz) Sterisil water.
- Add to bottle and wait 60 seconds for tablets to fully dissolve.
- Swirl the orange shock solution to clean and disinfect the inside of the bottle.
- Connect the bottle to the dental unit and run lines until orange color appears.
- Leave the shock solution in the lines overnight or over the weekend.
- The next day, empty the orange shock solution from the bottle.
- Fill the bottle with water from the Sterisil System Faucet and connect to dental unit.

▶ Decontamination of Dental Equipment, Materials, and Supplies

Dental Equipment

Dental equipment (e.g. amalgamator, curing light) that becomes contaminated and cannot be sterilized is cleaned and disinfected between patients.

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to absorbent towel and clean exterior surfaces and controls of each piece of equipment.
- Use a separate towel for each item.
- Allow 3 minutes contact time.

If visible blood is observed on a piece of equipment, repeat the application of disinfectant.

- Apply disinfectant to absorbent towel and clean the item.
- Reapply and disinfect each item with another towel to disinfect the item
- Allow 3 minutes contact time.

Shared Patient Equipment

Commonly shared patient equipment (e.g. BP cuff, stethoscope, pulse-oxymeter, wheelchair) that has direct contact with a patient's skin, must be disinfected after each use.

Dental Materials

Dental materials that become contaminated and cannot be sterilized are cleaned and disinfected between patients.

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to absorbent towel and clean exterior surfaces of each material.
- Use a separate towel for each item.
- Allow 3 minutes contact time.
- Wipe plastic container, dry, and replace all items.

If visible blood is observed on the surface of a material, repeat the application of disinfectant.

- Apply disinfectant to absorbent towel to clean the item.
- Reapply disinfectant with another towel, to disinfect the item.
- Allow 3 minutes contact time.

Consumable Supplies

Items placed in an operatory during patient treatment become contaminated. If it is not possible to adequately clean, sterilize, or disinfect items (cotton rolls, suction tips, evacuation tips, air/water tips, cotton applicators), they are to be discarded.

Extra supplies may be placed on paper towel and covered during patient treatment. If this is done, items may be returned to the supply cupboard as is.

If supplies have been exposed to contamination, they are to be evaluated for re-use. Discard items (e.g. needles, amalgam capsules) if damaged or seal is broken.

Disinfect items that are in good condition

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to absorbent towel and clean exterior surfaces of each item
- Use a separate towel for each item.
- Allow 3 minutes contact time.

▶ Decontamination of Environmental Surfaces

Housekeeping Surfaces

Evidence does not support that housekeeping surfaces (e.g. floors, walls, and sinks) pose a risk for disease transmission in dental health care settings. However, when housekeeping surfaces are visibly contaminated by blood or other potentially infectious material, prompt removal and surface disinfection is appropriate infection control practice (CDC, 2003).

The Faculty of Dentistry has a schedule for cleaning of clinical areas and high-touch surfaces.

Blood Spills

Blood spills on either clinical contact or housekeeping surfaces should be contained and managed as quickly as possible to reduce the risk of contact by patients and Dental Health Care Personnel (CDC, 2003).

- Wear protective attire (gloves, mask, eyewear).
- Pour disinfectant over visible organic material and remove with an absorbent towel
- Contain soiled towel in a plastic bag, tie closed
- Apply disinfectant to absorbent towel and clean surface
- Repeat application with another towel to disinfect surface

► Decontamination of Laboratory Equipment

Heat tolerant items used in the mouth and on contaminated laboratory prostheses and materials are cleaned and sterilized before being used on another patient (CDC 2003).

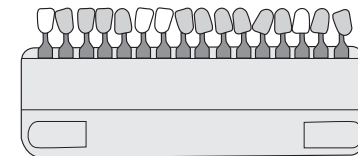
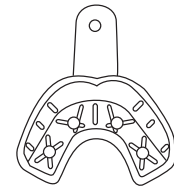
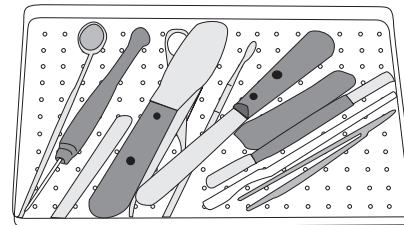
- Metal impression trays.
- Burs.
- Lab knives.
- Facebow forks.
- Handpieces and instruments.
- Polishing points.
- Water bath basins.

Items that become contaminated and cannot be sterilized are cleaned and disinfected between patients.

- Articulators.
- Lathes.
- Case pans.
- Pressure pots.
- Water baths.
- Shade guide.
- Rubber mixing bowls.
- Torch.

Contaminated materials and single-use items used intra-orally that cannot be cleaned, sterilized, or disinfected are to be discarded.

- Plastic impression trays.
- Custom trays.
- Disks and brushes.
- Brushes, rag wheels
- Waxes.
- Polishing wheels.



► Disposal of Waste Materials

Providing dental care creates wastes, which must be handled safely and in accord with local, provincial and federal regulations. (Dalhousie University, 2010)

Sharps

Sharps are items capable of causing punctures or cuts.

- Used needles, scalpel blades and other sharps are to be placed in a puncture-resistant container, at the site of use.
- When the container is $\frac{3}{4}$ full, seal the container with the attached lid, and transport to the Hazardous Waste Holding Area.
- The Dalhousie Environmental Health and Safety Office will collect the sharps containers for incineration.

Fluids

Blood and body fluid waste from surgical procedures is collected in single-use suction liners. The liquid waste must be disinfected, prior to pouring into the sanitary sewer.

- Wear protective attire (gloves, mask, eyewear).
- Prepare sodium hypochlorite disinfectant solution and run thorough the suction line, into the liner.
- Discard suction tubing in plastic bag, tie closed, and place in garbage.
- Let solution stand in the suction container for 3 minutes.
- Carefully open pour spout and discard solution into sanitary sewer.
- Rinse liner with water and place in garbage bag. Tie bag closed.
- Place a new tubing and suction liner in the container.

Satellite clinics use portable vacuum units with reusable containers to collect blood and body fluid waste.

The liquid waste must be disinfected, prior to pouring into the sanitary sewer.

- Wear protective attire (gloves, mask, eyewear).
- Prepare sodium hypochlorite disinfectant solution and run thorough the suction line, into the container.
- Discard suction tubing in plastic bag, tie closed, and place in garbage.
- Let solution stand in the vacuum container for 3 minutes.
- Carefully open pour spout and discard solution into sanitary sewer.
- Rinse container with water and pour into sanitary sewer.
- Wash container and attachments with detergent and water, allow to air dry.
- Replace container and attachments in vacuum unit.

Corrosive or flammable fluids or those that contain toxic components may not be poured into the sanitary sewer. For advice, contact the Dalhousie Environmental Health and Safety Office.

- Wash container and attachments with detergent and water, allow to air dry.
- Replace container and attachments in vacuum unit.

Corrosive or flammable fluids or those that contain toxic components may not be poured into the sanitary sewer. For advice, contact the Dalhousie Environmental Health and Safety Office.

Solids

Solid waste contaminated with blood or body fluids are to be placed in sealed, sturdy, impervious bags to minimize human contact.

Wear protective attire (gloves, mask, eyewear).

- Used disposable items (dental dams, cotton rolls, gauze, suction tips, etc.) are to be placed in a plastic bag, tied closed, and placed in cubicle waste container.
- Gauze that is dripping with blood may be reduced to general waste by immersing in water, until the blood is dissolved.
The liquid waste will be carefully poured into the sanitary sewer. Once the excess liquid is removed, the gauze will be placed in plastic bag and tied closed.
- No liquids are to be placed in cubicle waste container.
- Sharps may not be mixed with clinic waste.

► Management of Extracted Teeth

Patient Request for Extracted Teeth

- All teeth removed within Faculty of Dentistry Clinics become the property of Dalhousie Faculty of Dentistry and will not be given to patients.
- Pediatric patients will receive a certificate entitling them to a visit from the Tooth Fairy.
- The retained teeth will be used for pre-clinical teaching/research or will be discarded as Biological Waste.

Safe Handling of Extracted Teeth for Pre-Clinical Teaching/Research

- Extracted teeth that contain amalgam restorations are not suitable for pre-clinical teaching/research.
- Use PPE when handling extracted teeth, as they are a source of potentially infectious material.
- Maintain extracted teeth in a hydrated state. Clean teeth of blood and gross debris with detergent and water.
- Immerse teeth in a solution of 1:10 household bleach for 30 minutes, before using for pre-clinical teaching/research.
- Store extracted teeth in a jar with a secure lid to prevent leaking. Attach a label to identify contents. Bring jar of decontaminated teeth to Pre-clinical Technician.
- Clean work surfaces and decontaminate with a surface disinfectant.

Extracted Teeth from Outside Dentists and Satellite Clinics

- Only extracted teeth free of amalgam restorations are suitable for pre-clinical teaching/research.
- Extracted teeth are to be maintained in a hydrated state. They are to be cleaned with detergent and water to remove blood and gross debris, prior to providing to Dalhousie Faculty of Dentistry.
- Teeth are to be decontaminated by immersion in a solution of 1:10 household bleach for 30 minutes, before offering to Dalhousie Faculty of Dentistry.
- Teeth are to be rinsed of the household bleach solution and covered with tap water, prior to transporting to Dalhousie Faculty of Dentistry.
- Extracted teeth are to be stored in a jar with a secure lid to prevent leaking. A label identifying contents and source, is to be attached. The jar of decontaminated teeth are to be brought directly to the Pre-clinical Technician.

Disposal of Extracted Teeth with Amalgam Restorations

- Extracted teeth with amalgam restorations cannot be discarded in the garbage. Collect in a 16 oz. jar labeled **“Mercury Waste: Extracted Teeth with Amalgam Restorations”** and close lid.
- Extracted Teeth jars are to be transported to the Waste Collection Area on level 2, for collection and recycling by the Environmental Health & Safety Office.

▶ **Care of Used Protective Attire** (CDC, 2003)

Protective Eyewear (safety glasses, eye shield)

- After each use, eyewear must be cleaned and dried
- Persons wearing loupes are responsible for cleaning and disinfection, after each use..
- Disposable masks with eye shields are discarded after each use.

Clinic Jackets, Scrubs, and Lab Coats

- Change daily or more often if visibly soiled.
- Remove jackets and lab coats prior to leaving clinical area.

Medical Device Reprocessing

► General Policies (CSA, 2009)

- Manufacturers must provide written instructions for the cleaning and sterilization of dental instruments and equipment.
- Medical Device Reprocessing (MDR) staff must receive training in the reprocessing of any new dental instruments and equipment.
- Service technicians must follow infection control guidelines, when repairing MDR equipment.

► Sterilization of Dental Instruments

All instruments and devices used in and around the oral cavity must be sterilized after each use.

Sterilization is the use of a physical or chemical procedure to destroy all microorganisms including substantial numbers of resistant bacterial spores (CDC, 2003).

Within the Faculty of Dentistry clinics, dental instruments and devices are steam sterilized using the following information: (CSA, 2009).

Preparation

- Before sterilization instruments are cleaned either manually or in an ultrasonic machine.
- Persons involved in cleaning instruments must wear protective attire (goggles or face shield, mask, waterproof apron, hair cover and gloves).
- When cleaning instruments manually, use a long-handled brush and submerge items during scrubbing.
- After cleaning, instruments are dried.
- Examine instruments for debris or damage and manually clean or discard as necessary.



Packaging

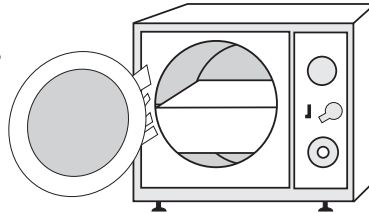
- Instruments are either placed in a paper/plastic pouch or in an instrument cassette, which is wrapped, prior to sterilization
- A chemical indicator is placed in each pouch or cassette.
- Pouches are sealed and cassettes are secured with autoclave tape.
- Each pouch or cassette is labeled with the following data – sterilizer number, load number, and date.
- Surgery cassettes are labeled with the identity of the person, who assembled it.

Sterilizer Load

- Packages are placed in the sterilizer in a manner that facilitates air removal, steam penetration, and steam evacuation for drying.

Storage

- After sterilization, instruments are stored in sealed packages until used.

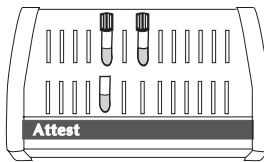


Sterility Assurance

- Biological indicators are used to verify the adequacy of the sterilization cycle on a daily basis. For steam sterilization a medium containing *Bacillus stearothermophilus* is used.

Recalls

- If a positive biological indicator is found, all items processed in the sterilizer are recalled and reprocessed.
- The sterilizer should be checked by a service technician and run with another biological indicator.
- Only when a negative biological indicator is found can the sterilizer be put back into operation.



Shelf Life

- An item remains sterile unless it is opened, damaged, or wet.

► Management of loaned reusable medical devices (CSA, 2011)

Dental instruments and devices are supplied to satellite clinics for use by Faculty of Dentistry students, staff, and faculty.

Release

Before releasing a medical device (instrument, tray, equipment) the sender shall decontaminate it and ensure that all essential components are present.

Sending

- If dental instruments and devices cannot be cleaned immediately after use, they must be kept moist by spraying with a transport gel
- Contaminated medical devices are to be sealed in an impermeable container labeled "biohazard".
- Place the contained device into an impermeable transportation case with a biohazard label attached outside.

Transportation

Cleaned and sterilized medical devices shall be contained separately from soiled medical devices or laundry to prevent or minimize cross-contamination.

► Management of medical devices for Study Clubs and Hands-On Courses

Privately Owned Instruments and Equipment - Processed at Dalhousie University, Faculty of Dentistry

- Instruments from dentists not currently licensed in Nova Scotia, New Brunswick, Prince Edward Island, or Newfoundland will be washed, packaged, and sterilized prior to use, by the MDR Department of the Faculty of Dentistry. Sterilization monitoring will be conducted on each load. Instruments, in clean condition and good working order, are to be delivered to MDR, 3 days prior to use.

Privately Owned Instruments and Equipment - Processed in Private Practice

- Dentists **currently licensed** in Nova Scotia, New Brunswick, Prince Edward Island, or Newfoundland may use their own instruments, packaged and sterilized in accordance with recommendations of CDA Infection Prevention and Control in the Dental Office 2006 (IPC-04-01 to IPC-04-04). All new items must be cleaned and sterilized prior to use (e.g. burs, files, brownies, greenies). Sterile items are to be transported in a puncture-resistant, sealed container.

- a) **Waiver** Dentists bringing processed equipment, handpieces, and hand instruments into the facility will be required to sign a waiver indicating that any instruments they bring in to the Faculty have been cleaned, sterilized and transported according to these guidelines..
- b) **Biological Monitoring** Dentists will comply with the CDA 2006 (IPC-04-04) requirement for weekly biological monitoring of sterilizers used in private practice. Upon request, dentists will supply documentation of biological monitoring results.
- c) **Used instruments** Following patient treatment, used instruments will normally be washed and packaged prior to removal from the facility, by the dentist or their auxillary.
- d) **Release of Contaminated instruments** Following patient treatment, unwashed items may be removed from the facility, if placed in a puncture-proof, sealed container with a Bio-hazard label affixed to the outside. Separate containers are required for transporting clean/sterile instruments and soiled instruments.

Dental Laboratory

The dental laboratory should follow the same infection control practices as the dental clinical areas in order to protect laboratory personnel and prevent cross-contamination between patients CDA, 2006).

► Handwashing

Hands must be cleaned before and after handling each case, after handling contaminated items, after blowing your nose or using the toilet, and before eating or handling food.

All dental health care personnel who have exudative lesions or weeping dermatitis on hands or forearms must refrain from all direct patient contact and from handling patient care equipment until the condition is resolved.

Handwashing Technique

Perform on entering and leaving the laboratory and anytime hands are visibly soiled with dirt or heavily contaminated with blood, secretions, or microorganisms.

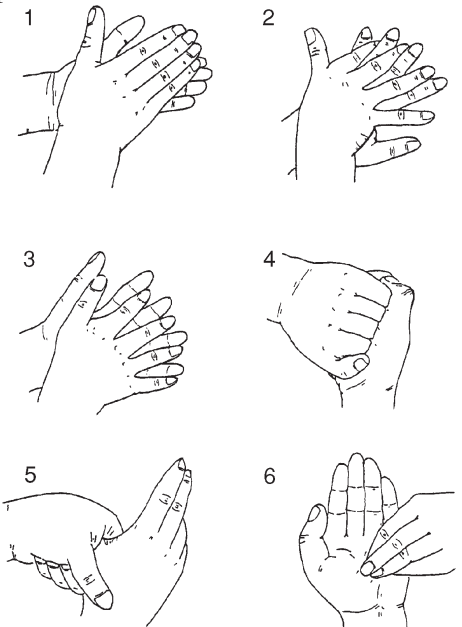
- Remove all jewelry from hands and forearms (rings, watches, bracelets).
- Fingernails should be kept short and cleaned regularly.
- Nail polish and artificial fingernails harbour microorganisms and may not be worn.

- Wash hands with cleanser for 3 minutes using anatomic scrub technique.
- End with a cold water rinse to close the pores.
- Pat hands and wrists dry with paper towels.
- Cuts and sores on hands must always be covered.

Anatomic Scrub Technique

To do the job thoroughly you need to clean these 6 surfaces:

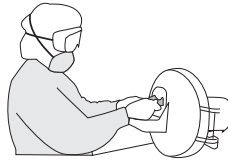
- 1) the palms
- 2) the webs between the fingers
- 3) the webs again with altered grip
- 4) palms to knuckles of opposing hands
- 5) thumbs clasped in opposing palm
- 6) tips of fingers against palm of opposing hand.



(Croser and Chipping, 1989)

Personal Protective Attire

- Laboratory personnel should wear a clean lab coat. Change coat each week or sooner if soiled. Remove when leaving area.
- Eyewear and a mask should be worn when operating a lathe, model trimmer, or rotary equipment.
- To reduce injury from aerosols, spatter, and particles, use safety shields and ventilation when operating rotary equipment.
- Gloves should be worn if it is necessary to handle a contaminated item.



► **Receiving Area**

This area should be separate from the Production Area.

- New cases should be placed in a clean case pan and articulator.
- Communicate with the client to ensure that the case has been cleaned and disinfected.

If disinfection cannot be confirmed, carry out the following instructions:

- Put on protective attire (gloves, mask, and eyewear).

Clean

- Place item in zip-lock plastic bag, add appropriate ultrasonic cleaner, and seal bag.
- Operate ultrasonic machine for required time.
- Discard plastic bag and cleaning solution, rinse thoroughly.

Disinfect

- Place item in zip-lock plastic bag, pour in disinfectant to cover completely.
- Allow 3 minutes contact time, remove immediately.
- Rinse under running water to remove any chemical residue prior to handling.
- Packaging from outside cases should be discarded.

Work surfaces should be cleaned and disinfected every day

- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to an absorbent towel and clean each item.
- Use a separate Kimtowel for each item.
- Allow 3 minutes contact time.

► Production Area

This area should be isolated from the possible transmission of micro-organisms. All items brought into the Production Area should have already been cleaned and disinfected. No persons should be permitted to enter while wearing contaminated attire.

Housekeeping

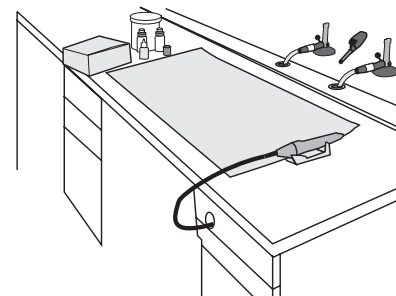
- NO FOOD or DRINK are to be consumed at the work bench
- Laboratory staff should clean their hands each time they change cases.
- Work benches should be covered with paper.
- Work benches should be cleaned and disinfected at the end of the day or whenever contamination occurs
- Wear protective attire (gloves, mask, eyewear).
- Apply disinfectant to an absorbent towel and clean each item.
- Use a separate towel for each item.
- Re-apply and disinfect each item with another towel.
- Allow 3 minutes contact time.

Sharps Disposal

- Use a hemostat to remove blade from lab knife.
- Discard used burs, orthodontic wire, and blades in a puncture-resistant container.

Clean-up

- Polishing lathes should be cleaned and disinfected daily.
- Each day, clean and disinfect all common-use laboratory instruments and equipment (wax carver, wax spatula, spatula and mixing bowl, rag wheels, burs etc).
- Pressure pots and water baths should also be cleaned and disinfected daily.
- Put on protective attire (gloves, mask, and eyewear).
- Apply disinfectant to an absorbent towel and clean each item.
- Use a separate towel for each item.
- Allow 3 minutes contact time.
- Use a unit dose of pumice, wet with water for each case.
- Line the pumice tray with plastic, change daily.



► **Distribution Area**

- Use new packaging to transport outside cases.
- Store appliances and prosthodontic devices in water, NOT DISINFECTANT.
- If the same equipment has been used on new and existing prostheses, disinfect the item before it leaves the laboratory.

Wear protective attire (gloves, mask, eyewear).

Clean

- Place item in zip-lock plastic bag, add appropriate ultrasonic cleaner, and seal bag.
- Operate ultrasonic machine for required time.
- Discard plastic bag and cleaning solution, rinse thoroughly.

Disinfect

- Place item in zip-lock plastic bag, pour in disinfectant to cover completely.
- Allow 3 minutes contact time, remove immediately.
- Rinse under running water to remove any chemical residue prior to insertion into patients mouth.

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Appendix A:

Immunizations for Health Care Workers (NACI, 2006)

Tetanus and Diphtheria Vaccine

- Given as Td and pertussis given as Tdap.
- Booster schedule – Td every 10 years; 1 dose should be given as Tdap, if not previously given in adulthood.

Measles, Mumps, and Rubella Vaccine

- Given as MMR.
- One dose for adults born in or after 1970 without a history of measles or those individuals without evidence of immunity to rubella or mumps.
- Second dose is required for healthcare workers.
- MMR should also be given to all persons of either sex who may expose pregnant women to rubella through face-to-face contact.

Polio Vaccine

- Primary immunization with inactivated poliomyelitis vaccine (IPV) is indicated for all health care workers who may be exposed to poliovirus and who have not had a primary course of poliovirus vaccine (OPV or IPV).
- Persons who have previously been given less than a full primary course of OPV or IPV should have the series completed with IPV regardless of the interval since the last dose.

Hepatitis B Vaccine

- A series of three injections is given at 0, 1, and 6 months.
- An accelerated Hepatitis A/B vaccine is also available. It is given at 7, 14, and 21 days followed by another injection at 12 months.
- Antibody testing to determine serologic response is performed 1-2 months after completion of the vaccine series.
- If vaccination did not result in sufficient anti-HBs (>10mIU/mL) a second series is administered .
- Booster vaccination against Hepatitis B is not necessary, if one has developed adequate antibodies to Hepatitis B surface antigen (anti-HBs).

Influenza Vaccine

- Every autumn, health care workers should receive the influenza vaccine, using current recommended vaccine formulation.

Varicella Vaccine

- Two doses at least 4 weeks apart, is given to susceptible adults without seronegativity.

Tuberculin Skin Test (TST)

(Canadian Tuberculosis Standards, 2007)

An initial 2 step TST needs to be performed on health care workers, to reduce the chance of inaccurate results.

- After the first test, a second test is given 1 to 4 weeks later.
- Both tests are read and recorded at 48 to 72 hours.

If the second test result is 10 mm or more, a referral is made for medical evaluation and chest radiography.

The 2 step TST only needs to be done once, if properly documented.

- Subsequent TST can be 1 step, regardless of how long it has been since the last TST.

Appendix B: Management Of Patients with Herpetic Lesions

All stages of recurrent herpetic lesions are potentially contagious, including the prodromal and immediate post-lesion stage^{1,2}. Lesions in the vesicular stage, however, are the most contagious^{1,2}. Therefore, the guidelines that follow are based on the changing degree of infectivity of the lesions^{1,2,3,4,5,6,7,8}. Patients who have a history of recurrent herpetic lesions should be advised to contact their oral health care provider if they have a herpetic lesion present before their appointment. Rescheduling of the appointment prevents the inconvenience of dismissing the patient should they attend with an active lesion⁵.

Confirm diagnosis of herpetic lesion with dentist prior to any treatment. Location of the recurrent herpetic lesions extra-orally could include the lips or nasolabial folds. Intra-orally they are almost always found on the gingival or hard palate.

Stage of Lesion Development

Dental and dental hygiene treatment*

1. PRODROMAL STAGE

- infectivity +
- patient is aware lesion will appear in a few hours.

- no treatment restrictions.
- modify appointment schedule to avoid lesion in the vesicular stage.

2. VESICULAR STAGE

- infectivity ++++
- most infectious stage
- small gray or white vesicle

- treatment should be limited to relief of pain/infection.
- no elective treatment should be performed**

3. ULCERATIVE STAGE

- infectivity +++
- infectious stage
- small gray or white vesicle

- treatment should be limited to relief of pain/infection.
- no elective treatment should be performed**

4. CRUSTING STAGE

- infectivity ++
- less infectious than vesicular stage

- treatment should be limited to procedures that don't produce aerosols or splatter. (no cavitation or gross scaling or polishing, care in removing rubber dam).

5. IMMEDIATE POST-LESION STAGE

- infectivity +

- no treatment restrictions.

* all patients are to be treated using normal barrier protections (gloves, mask, patient/operator glasses) or universal precautions.

** exceptions depend on:

1. agreement between supervising faculty, student and patient,
2. nature of procedure.

It may be reasonable to perform some procedures under Rubber Dam if aerosols are minimized and the patient is comfortable during treatment.

- Cover lesion with petroleum jelly prior to treating patient. Take care not to rub the lesion as this can result in spreading the lesion locally.
- Ensure that the herpetic lesion is not a marker for any underlying systemic disorder, that the patient understands to apply any medications that may be prescribed, that the patient understands how to avoid inoculation and cross-infections.

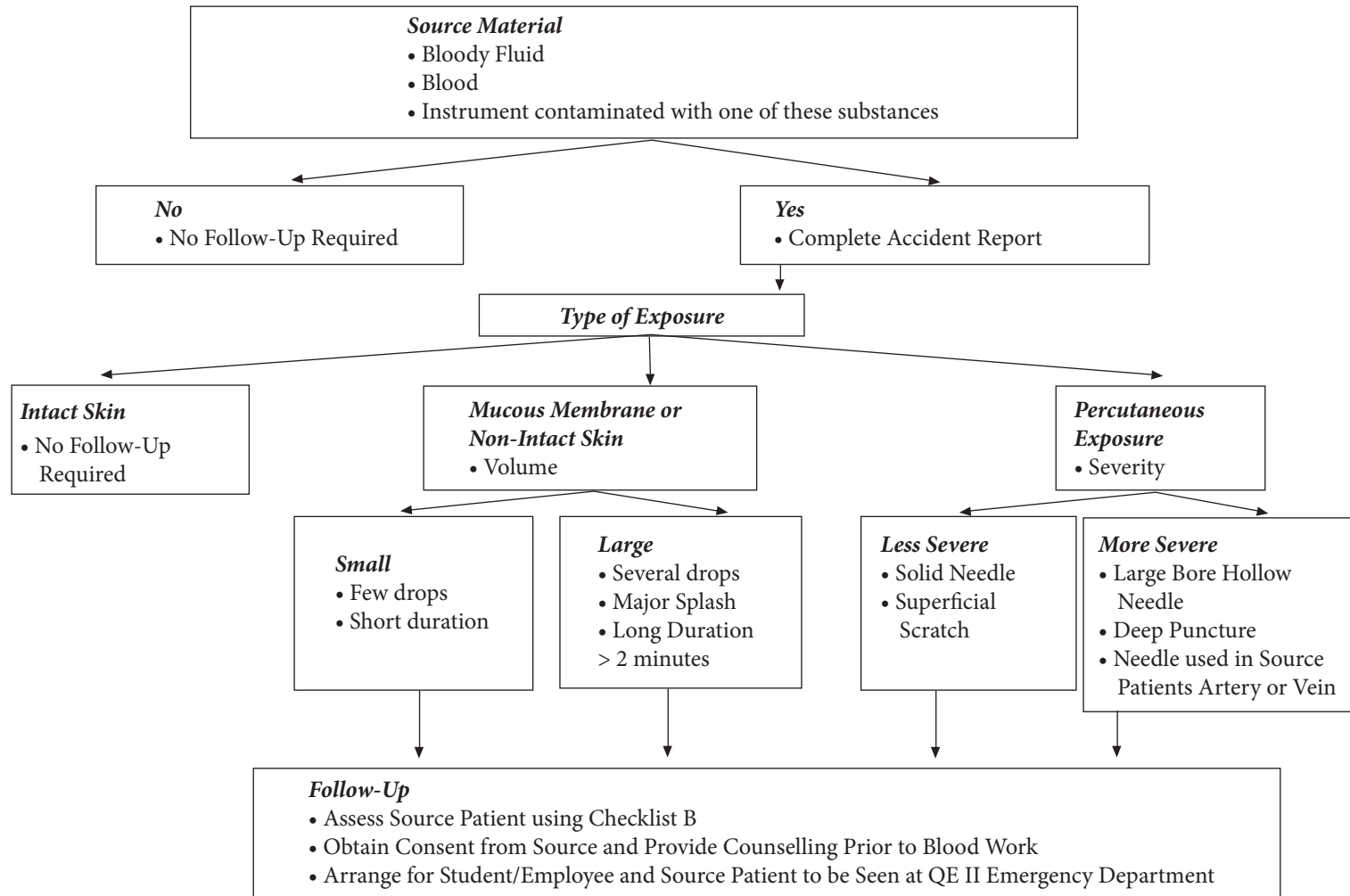
Oral Health Care Workers with Herpetic Whitlow

Due to the highly infectious nature of an active lesion, oral health care providers should be removed from clinical activity during this time⁷. An outbreak of HSV-1 gingivostomatitis occurred over a 4-day period where 20 of 46 patients seeing a dental hygienist were infected⁸. Although this occurred before the routine use of latex gloves, the highly infectious nature of this condition dictates this prudent course of action.

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**Appendix C:
Management of Occupational Exposures**

**Checklist A
To Assess Exposure for Risk of Infection**
(to be completed by Assistant Dean of Clinical Affairs or Designate)



Appendix C: Management of Occupational Exposures

Checklist B

To Assess Source Patient After Exposure

(To be completed by Assistant Dean of Clinical Affairs or Designate)

1. Inform the Source Patient of the reason for the enquiry and allow them time to read Information for Patients .
2. Evaluate the Source Patient's risk of blood-borne infection by reviewing their medical history for clinical symptoms and asking them for additional information.

Do you know if you are Hepatitis B, Hepatitis C, or HIV positive or have any risk factors for exposure to these viruses?

Hepatitis B ___ Yes ___ No _____ Date Diagnosed

Hepatitis C ___ Yes ___ No _____ Date Diagnosed

HIV ___ Yes ___ No _____ Date Diagnosed

Stage of Illness ___

Antiretroviral medications: _____

Risk Factors ___ Yes ___ No

Risk Factors may include:

- a) IV drug use/shared needles
- b) receiving blood products (before 1986 for HIV, before 1986 for HCV)
- c) multiple sex partners
- d) men having sex with men
- e) partner with Hepatitis B, Hepatitis C or HIV or any of the above risk factors

3. Request Source Patient's consent to obtain blood for testing of their Hepatitis B, Hepatitis C and HIV status.

Physician to whom test results should be sent:

Dr. _____ Telephone Number _____

Address _____

Test results will also be sent to Assistant Dean of Clinical Affairs, Faculty of Dentistry.