Hazard Control in the Dental Environment

University of Washington
School of Dentistry

Updated August 2024

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Section 1 | Introduction to Hazard Control

Disease transmission and chemical hazards in the dental setting are concerns in oral health care. Local, state, and national regulations have been enacted to reduce the threat to health care workers and patients of acquiring an infectious disease or being injured by exposure to hazardous chemicals in a medical or dental setting.

The objective of hazard control at the University of Washington School of Dentistry is to protect all patients, students, staff, and faculty from contracting an infectious disease or being injured by exposure to hazardous chemicals during their treatment, education, or employment.

Overview

Occupational Safety and Health Programs: General Requirements for Compliance

The Washington Industrial Safety and Health Act (WISHA, Chapter 49.17 RCW) and related standards[1] require all state employers to maintain work practices and work environments that do not endanger the health or safety of employees and others who may have legitimate access to the work site. In educational institutions, faculty, staff, students, volunteers and visitors may all have legitimate access to the work site. The University of Washington and the School of Dentistry are committed to complying with these state and federal standards by instituting occupational safety and health programs in all departments and service units. In addition, faculty, staff, and students must practice safe work habits to prevent work-related illnesses and accidents.

To comply with WISHA and related standards and to provide a safe and healthy environment, the University has assigned responsibility for occupational health and safety as follows:

- Vice President and Deans – These individuals are responsible for directing all units within their respective areas to establish and administer occupational safety and health programs. Assistance may be obtained from the Environmental Health and Safety Department.
- Deans, Directors, Chairs and Supervisors – Each of these individuals is responsible for safety performance in their respective units (as referenced in the University Administrative Policy 12.5 section 1).

[1] See Appendix A for a list of related standards and on-line resources

- Department/Clinic Leaders – These individuals are advised to designate one person, plus an alternate, to act as a department coordinator for health and safety. This individual is responsible for implementing department safety and health programs and for acting as a liaison between the department and the School's Health and Safety Manager.
- Employees – Faculty and staff are responsible for using required safety equipment and for following safe work policies and practices. Faculty and staff are also responsible for the safety of other employees and students under their supervision.

WISHA standards require that employees:

- Coordinate and cooperate with all other employees to prevent accidents
- Study and follow all safe practices governing their work
- Offer safety suggestions that may contribute to a safer work environment
- Apply accident prevention principles in their daily work and use proper safety devices and equipment as required by their employer and/or discipline or profession
- In Dentistry, this includes the practice of ***Standard Precautions***:
    - Properly use and care for all personal protective equipment
    - Promptly report work-related injuries to the immediate supervisor or other designated person (including injury to self, colleagues, staff, students and patients)

Hazard Control Documents

There are five documents providing standards for hazard control in the School of Dentistry:

1. Infection Control Policy (found in the *Clinic Manual*)
2. Hazard Control Policy (found in the *Clinic Manual*)
3. *Bloodborne Pathogens Manual* (includes Exposure Control Plan)
4. *Hazard Control in the Dental Environment* manual

Refer to the *Bloodborne Pathogens Manual* for guidance on the responsibilities, training requirements, and safety procedures necessary to protect against occupational exposure to bloodborne pathogens, including the use of PPE, safe work practices, and the management of exposure incidents.

Purpose

Purpose: To create and implement policies that minimize hazard risk to patients, students, residents, staff, and faculty who are engaged in clinical care, laboratory procedures, and/or laboratory research.

Policy Summary

All patient care, laboratory procedures, and equipment management in the School of Dentistry is carried out in accordance with guidelines set forth by the Washington State Dental Quality Assurance Commission (DQAC), US Public Health Service Centers for Disease Control (CDC), the Occupational Safety and Health Administration (OSHA), the Washington Industrial Safety and Health Act (WISHA), and state and local regulatory boards.

It is School policy that all students, faculty and staff care for patients within their level of competence and without discrimination based on infectious disease status. Specific strategies for treating individuals with infectious diseases should be discussed with a supervisory faculty member prior to treatment.

The Medical History and Standard Precautions

It is not possible to determine an individual's infectious disease status solely through medical history review. Patients may be unaware of their condition or the mechanism of disease transmission. Others may choose not to reveal a known condition to health care workers. Furthermore, the infectious disease status of patients may change with time and assumptions made about disease status may not be valid.

Proper review of health history is imperative to ensure patients receive appropriate care. Because not all transmissible conditions may be disclosed with this review, it is essential that *Standard Precautions* be employed for all care.

Standard Precautions is defined as: A strategy used in patient care that assumes ***all*** body fluids from ***all*** patients are infectious and that ***all*** patients be treated with the same high standard of infection control practice.

The infection control standards outlined in this manual are designed to prevent transmission of Hepatitis B, HIV, Hepatitis C, and other bloodborne diseases.

Accountability

It is ultimately the responsibility of everyone providing care to adhere to the School's health and safety protocols. All care providers must ensure that appropriate care is rendered in a safe environment with appropriately processed and handled instruments/materials to minimize chances of contamination and subsequent disease transmission. This safe environment applies to both clinical

and laboratory procedures. The laboratory phase of care must be carried out on appropriately processed appliances and impressions and performed with aseptic technique. All faculty and staff associated with patient care must monitor compliance with the standards outlined in this manual. Staff members who perform sterilization duties are likewise charged with ensuring strict compliance with protocols for prevention of cross contamination. Individuals found in violation of these standards are subject to sanctions defined by the University of Washington.

Chemical Hazards – Hazard Communication Standard

The federal *Hazard Communication Standard* (Appendix A) requires development of a written hazard communications program for all employers. This program is designed to ensure that hazards associated with chemicals used in the workplace are evaluated and that information concerning such hazards is communicated to the employer and employees.

The School of Dentistry has a written hazard communication program in compliance with University and Washington State regulations (http://www.washington.edu/admin/adminpro/APS/12.05.html and WAC 296–62–054 through –05425). This document must be maintained at the workplace and must include provisions for container labels, collection and availability of material safety data sheets, and the employee training program. This hazard control manual serves as the School's required written program.

Implementation

Training

Training will be managed as described in the Bloodborne Pathogens Manual. Chemical Hygiene Officers and Primary Investigators (P.I.) will have training through UW EH&S to complete upon entering or joining a lab or clinic space.

Chemical Inventory and Container Labeling

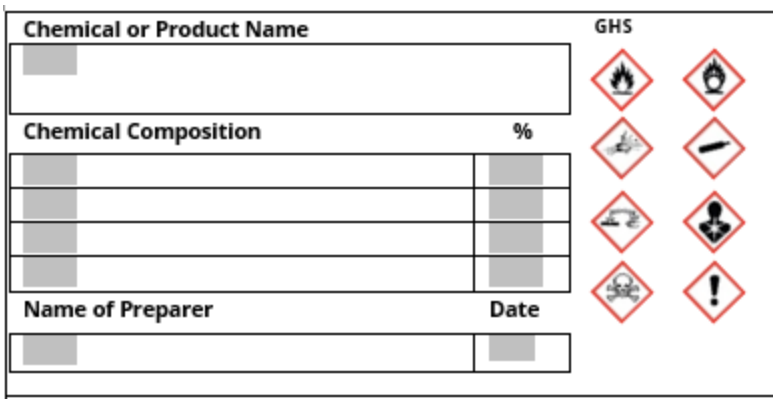
MyChem is the online method for tracking chemicals on UW Campus. UW EH&S maintains MyChem and helps with ongoing issues. The supervisor for the work area is responsible for ensuring the inventory is updated on MyChem. Inventory must be reviewed and updated at least once a year, but more often is preferred for fire safety. Inventory review includes the chemical/product information, amount in location, MSDS updated, etc. Due to MyChem being required for all areas storing chemicals, there is no requirement to have a physical copy of the MSDS. However, a

physical copy of the MSDS may be preferred in some lab or clinic spaces. (https://mychem.ehs.washington.edu/)

Container Labeling Requirements

- All containers must be labeled with content identity and show hazard warnings appropriate for employee protection, including target organ information.
- Most manufacturers provide appropriate labeling on the original container, but it must be verified to include the following:
    - Chemical/Product name
    - Manufacturer's name and contact information
    - Signal word (e.g., "danger" or "warning")
    - Hazard statement(s) (e.g., "toxic if inhaled" or "combustible liquid")
    - GHS pictogram(s)
    - Precautionary statements (e.g., "Keep container tightly closed")
    - Appropriate hazard warnings
    - If an appropriate label is not provided by the manufacturer, the material should not be accepted. UW EH&S states not to accept any chemicals if the label is illegible or missing required information.
- Most custom labeling, also known as secondary chemical container labelling, will be limited to “end user” containers. End user containers are containers used to store chemicals after they are transferred from their original containers for the convenience of the user (e.g., household bleach purchased in a gallon container that is diluted and dispensed into smaller bottles to be used as disinfectant).
    - However, secondary chemical container labels are also required for containers when labels are faded or damaged including those listed in the exemptions from labeling requirements.
- Secondary chemical container labels: UW EH&S details further about secondary chemical container labels and templates (https://www.ehs.washington.edu/chemical/chemical-container-labels). There is no standard label format required. A common file label (e.g., Avery) will be used. The label must contain at least the following information as shown in Figure 1-1 one of UW EH&S Templates. If the chemical product was prepared, the preparer must date and list their name on the label.
    - Identification of the hazardous product/chemical
        - If this is a prepared solution, the percent composition and the chemical composition must be listed.
    - Appropriate hazard warning (i.e. “flammable”, “corrosive”, etc.)
    - Reference number to the MSDS chemical inventory
    -

Figure 1-1



Source: UW EH&S Template

- Source of Hazard Information: The MSDS for each chemical provide the information necessary for proper labeling using the NFPA symbol.
- Exemptions from the Labeling Requirement: The following items do not require the labeling described above because they are regulated under separate OSHA standards and can be used as labeled from the manufacturer:
    - Drugs and medical/dental devices regulated by the Food and Drug Administration and labeled in accordance with FDA requirements
    - Disinfectants labeled in accordance with Environmental Protection Agency requirements
    - Consumer products such as household cleaners, labeled according to requirements of the Consumer Product Safety Commission
    - Portable containers of hazardous chemicals being transferred for immediate use of the employee making the transfer (e.g., measuring devices for mixing disinfectants)
    - Items considered to be “articles” by OSHA. These items do not release hazardous chemicals under normal use (e.g., office products)

Using Material Safety Data Sheets (MSDS) (Figure 1-2)

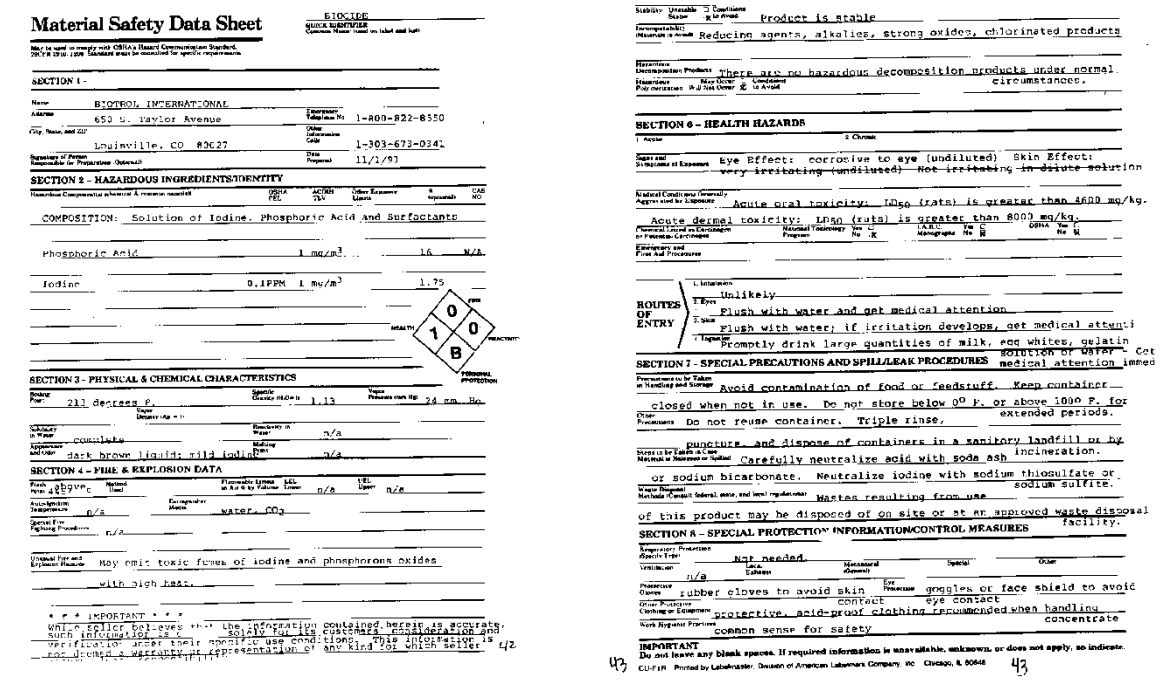


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Figure 1-2. Sample MSDS for Biotrol disinfectant. (8 ½" x 11")

- MSDS sheets contain health and safety information about each hazardous chemical in the workplace. An MSDS is required for each hazardous chemical in the workplace. MSDS are accessible through MyChem and must be readily accessible by employees. Supervisors are responsible for ensuring their employees are trained and know how to obtain MSDS information. MSDS information must be added to MyChem for each chemical. The area supervisor is responsible for the maintenance of MyChem in all clinics, labs, and offices. Departmental Administrators are responsible for MyChem maintenance and upkeep in their respective reference stations.

Although MSDS is online through MyChem, there is standard information that can be found on all. The following list provides a summary and interpretation of the information on the MSDS:

- *Product Identification:* The name, address, and phone number of the manufacturer, chemical name, and trade name.
- *Hazardous Ingredients:* Those substances present in the product that are listed as hazardous. Each substance in a mixture may be listed for entirely different reasons based on flammability, toxicity, corrosiveness, etc. Exposure limits are also provided.

- *Physical Data:* Information regarding the physical properties of the substance is provided in terms of an indication if the product is a liquid, solid, gas, color, odor, boiling point, solubility, etc.
- *Fire & Explosion Hazard Data:* Indication if the substance will burn or explode and how flammable the product may be.
- *Health Hazard Data:* A description of the acute and chronic health effects of the product, exposure limits, possible routes of entry into the body, and first aid procedures.
- *Reactivity Data:* A description of the stability of the product. Precautions to use in handling and storage conditions and its incompatibility with other products.
- *Spill or Leak Procedures:* This section provides information on how to contain and treat a spill or leakage of a product. It will indicate if special equipment or clothing is needed when dealing with a spill.
- *Special Protection Information:* This section will list any personal protective equipment needed to handle the product. It includes such items as ventilation requirements, gloves, eye protection, etc.
- *Special Precautions:* This section provides directions for special handling, storage of containers, labeling, posting of signs, and other information on health and safety not contained in other sections.

Section 2 | Infection Control

Policy Summary

Fixture surfaces or non-sterilizable equipment and materials that can be contaminated by blood or other body fluids during dental care must be covered with disposable barriers or cleaned and disinfected after use to minimize the potential for disease transmission between patients and health care workers.

Dental health care workers will use work practice controls during patient care that will ensure diseases are not transmitted between patients or between provider and patient due to contamination of materials or supplies or because of inappropriate technique. See Clinic Manual for Infection Control Policy.

Operatory Management

Operatory Preparation

The dental operatory must be prepared prior to seating patients to ensure an aseptic environment. Preparing the operatory for patient care involves the following procedures:

1. Waterline Contamination Control Measures

* Anti-retraction valves are installed on all dental units in the school.
* Flush all water lines in the morning for at least 2 minutes to eliminate microorganisms multiplying in the water lines overnight and any material that may have been aspirated into the lines. (CDC, Guidelines for Infection Control in Dental Health-Care Settings — 2003)
* Water lines to handpieces, air-water syringes and auxiliary equipment must be flushed for 20-30 seconds between patients.

2. Disinfectant Measures
    - Using an EPA-approved hospital grade disinfectant, clean and disinfect operatory and dental unit surfaces that may have been contaminated.
    - Cleaning supplies and FDA approved disinfectant spray or wipes are available in each operatory.
    - Contaminated surfaces should be cleaned and followed by one of the following techniques:

- Sprayed, wiped with a paper towel, sprayed again and allowed to remain wet (IAW manufacturer's instructions "spray, wipe, spray" technique)
- Wipe with disinfectant wipe, discard wipe, wipe with another disinfectant wipe and allow to air dry ("wipe, discard, wipe again" technique).

3. Surfaces and Surface Covers
   - Clinical contact surfaces must be covered in surface barriers prior to patient care OR cleaned and disinfected after each patient:
   - https://www.cdc.gov/oralhealth/infectioncontrol/summary-infection-prevention-practices/standard-precautions.html
   - https://app.leg.wa.gov/wac/default.aspx?cite=246-817-655) :

   - Surfaces within three (3) feet of the patient's mouth must be considered contaminated when treatment produces aerosols or spatter and should receive highest attention.
   - Surfaces covered by effective barriers need not be disinfected between patients.
   - Surface barriers must be FDA approved (https://www.cdc.gov/dental-infection-control/hcp/dental-ipc-faqs/cleaning-disinfecting-environmental-surface.html).

A. Surface Barriers

i. Are used to protect clinical contact surfaces that are prone to damage by disinfectant (e.g. electronic controls) or difficult to clean. Must cover the following items for all patient encounters:
   1. Electronic controls
   2. Light handles
   3. Patient headrest

ii. Must cover the following items when it is anticipated that they will be used during treatment:
   1. Air Water syringe buttons/handle
   2. Curing lights
   3. Low-volume suction controls
   4. High-volume suction controls
   5. X-ray tubehead (if indicated per manufacturer instructions)
   6. X-ray sensors

iii. Must only be applied to the following surfaces if they are touched with dirty gloves during treatment (e.g. provider working alone and must chart on computer, developing radiographs, etc.).
    1. Keyboards
    2. Computer mice
    3. Pens/Pencils

iv. Are not required for:
    1. Delivery unit
    2. Operator and assistant chairs
    3. Patient armrest
    4. Handpieces

v. Must be changed at the end of each patient treatment session
    1. Areas that have had surface barrier coverage should not be wiped or sprayed, as this will lead to equipment deterioration

B. Clinical contact surfaces that are not barrier protected must be cleaned and disinfected with an EPA-registered hospital disinfectant after each patient. Use an intermediate-level disinfectant (i.e. tuberculocidal claim) if visibly contaminated with blood. Disinfectant wipes should be used between use on all surfaces using “spray-wipe-spray" or “wipe-discard-wipe" technique to clean, then wiped again to disinfect and remain moist for at least 3 minutes once disinfected.

C. At the beginning of each patient encounter, surfaces will have been cleaned from the end of the previous patient encounter. In some clinics a sign designating that the unit is clean is placed on the patient chair.

Environmental Management Strategies

1. Disposable bibs must be used for each patient.

2. Dropped instruments must not be picked up during treatment, reused, or placed in the field of work. If the instrument is essential, obtain a sterile replacement.

3. Keep all books, syllabi, back packs, articulator and tackle boxes off the counter top.

4. Laboratory materials from other patients should not be on the counter top during patient care.

5. Drawer pulls are not covered. The cabinet drawers are not opened while wearing contaminated gloves.

6. Surface covers are the same for surgical procedures with the exception that a Mayo stand is provided for use instead of the standard mobile cart. The stand tray will be placed in a plastic bag and covered with a sterile paper drape on which instruments may be placed.

7. The counter top must be covered for placement of contaminated objects other than the surgical instruments such as bagged camera, mirrors, and retractors.

8. Items such as light cure units must be barriered. While items such as ultrasonic scaler units and handles must be thoroughly disinfected using the "spray, wipe, spray" or “wipe, discard, wipe again” technique.

    a. Thoroughly clean the item by using one of the approved methods above.

    b. If the item will enter the patient's mouth, remove residual disinfectant after treatment by rinsing in water or wiping with water-moistened gauze or toweling.

    c. Ultrasonic scaler tips should always be heat sterilized after use.

Post-Treatment Environmental Management

1. The following procedure is used to handle barrier materials in the dental operatory after the patient is dismissed:

    a. Remove the bag from the patient chair and turn it inside out so the contaminated surface is now inside.

    b. Remove the syringe tip, evacuators and handpieces from the tubing and then carefully remove the covers from the tubing to avoid contaminating the tubing or connectors, and lay the tubing over the seat of the chair.

c. Remove the surface covers from the operating light handles and switch off the operating light. Place waste in the inverted chair bag. Disinfect, being careful not to wipe the reflector surface which is hot. Fold the light so that both arms are horizontal and parallel to the chair.

d. Remove the unit cover and place it along with the tubing covers and other surface covers in the inverted chair bag for disposal.

e. Remove the bedside waste bag and place it in the large red container located on the floor throughout the clinic aisles.

2. Evacuation System

Run a large volume of water (two to three liters or 60 seconds from the tap) through the high volume evacuation hose and another one to two liters through the saliva ejector hose. Substantially larger volumes of water should be used following surgical procedures. This is accomplished by holding the tips directly in the water stream in the sink.

3. Contaminated Surfaces

Any surfaces such as handpiece couplings, saliva ejector holder, etc., that may have come into contact with patient body fluids during the procedure must be cleaned and disinfected with FDA approved disinfectant solution as previously described.

Following removal of waste from the unit and disinfection, gloves are removed, disposed, and hands washed thoroughly. DO NOT RE-COVER and REBAG until the operatory will be used again.

Operatory Management at the End of the Day

1. Use the disinfectant/cleaner and paper towels to clean all contact surfaces in the operatory using the "spray, wipe, spray" or “wipe, discard, wipe again” method.

2. Evacuation System

Prior to cleaning the filter in the evacuation system, aspirate a paper cup full of an accepted disinfectant into the evacuator. Leaving the high volume evacuation slide valve open, turn the main evacuation shut-off valve (located just under the instrument head), to the OFF position. With gloves on, determine if there is any solid debris in the filter, remove the

filter and empty the waste into the waste receptacle. Rinse the filter thoroughly and replace it. Use paper towels to prevent drips from the highly contaminated filter from contacting the chair, floor, or counter. Replace the cap cover. Turn the main valve back ON and the tip valves for the saliva ejector and high volume evacuation hose OFF. The unit is then disinfected and bagged for the next use.

3. Unit Arrangement

   Students are provided with cleaning supplies for general 'housekeeping' of their assigned unit. Students may not provide any additional cabinetry, plants, radios, books, etc. to be stored in the units. Backpacks and other personal items may not be stored in the clinic for security and infection control reasons.

Management of Radiographic Equipment

This section is governed by the School's Radiation Safety Policy found in the *Clinic Manual*, which establishes protocols designed to minimize radiation exposure to patients and operators, promote sound radiological health practices, and ensure proper infection control during radiographic procedures. The policy adheres to the ALARA (As Low As Reasonably Achievable) standard and complies with both Federal and Washington State regulations. It emphasizes the importance of training, the safe operation of radiologic equipment, and the need for regular monitoring and inspection. The policy also includes guidelines for patient protection, operator safety, and the proper management of radiographic equipment and facilities.

1. X-ray Machines

   a. The x-ray head must be bagged with a large plastic bag before each use to prevent cross contamination by contact with the patient in placement of the film and alignment of the head.

   b. Use over gloves if the control panel needs adjusting.

   e. Touch only covered surfaces of x-ray head during alignment.

2. Preparation of Countertops: Countertops must be covered by either paper toweling or polycoated paper to provide a clean area for storage of film and film holders during the examination.

3. Protective Barriers for Radiography: Use of gloves and masks is mandatory during radiographic procedures. Once the radiographic examination has started, the gloved hands of the operator are contaminated and must only touch protected surfaces of the x-ray room, x-ray equipment, controls, and countertops.

4. Clean-up of X-ray Rooms: When the patient examination is completed, the covers of the x-ray unit, exposure controls, and the patient chair are removed and put in the appropriate receptacle. The countertops and the patient chair must be disinfected after each patient.

Management of Other Equipment Used In Direct Patient Care

1. Nitrous Oxide Unit

   Disposable masks are obtained from the dispensary and are attached to the tubing.

2. Camera, Mirrors, and Retractors

   a. The grip of the camera should be bagged and plastic wrap placed on the focusing knob or ring and any areas of the flash assembly that might be touched during picture taking. The flash and drive should be turned on once, prior to the start of the procedure.

   b. Mirrors can be autoclaved or sterilized by chemical vapor, but they should be cleaned very well prior to packaging to ensure that no spots get baked on. Wrap them in white paper toweling before packaging to reduce the possibility of scratches.

   c. Wire retractors must be heat sterilized between uses.

3. Prophy Angles and Ultrasonic Scalers

   a. Disposable prophy angles with cups attached are available for use.

   b. Ultrasonic scalers must ***never*** be used on more than one patient without being sterilized first, even with tip replacement.

   c. Ultrasonic scalers must be thoroughly disinfected prior to use and after use with the "spray, wipe, spray" or “wipe, discard, wipe again” technique, as previously described. Special attention should be given

to the control knobs and handpiece. The tips are always heat sterilized after use. Barriers are used to simplify disinfection (large bag over control unit and tubing cover over handpiece through which the tip insert is placed.)

4. Aseptic Dental Carts and Cabinetry

    a. Students must clean and disinfect both the inside and outside work surfaces of their fixed cabinetry with a cleaner and accepted disinfectant whenever these surfaces are visibly soiled. Cubicles are inspected on a regular basis. Violations of the aseptic protocol will be reported and may result in loss of clinic privileges.

    b. Instruments and equipment used in patient care should be stored in sterile bags and arranged in an orderly manner. Instruments for intraoral use may not be stored unwrapped.

    c. Packages must be rewrapped and resterilized if there is evidence that the packages are not intact or tape remained unchanged. Packages must also possess a process indicator to ensure that the contents were actually cycled through a high heat sterilizer.

    d. Laboratory equipment and instruments will be stored in separate drawers from patient care equipment and instruments.

    f. Clinic cabinetry may not be used to store lab work in progress. Lab work should be stored in student lockers in plastic containers that are disinfected with an accepted surface disinfectant, "spray, wipe, spray" or “wipe, discard, wipe again” technique between cases.

Aseptic Clinical Techniques

There are a variety of aseptic techniques that can be practiced to reduce the spread of patient saliva and blood or will decrease the chances of unnecessary exposure to potentially infectious materials. These are listed as follows:

Storage and Dispensing of Instruments and Supplies

1. Supply items must be unit dosed rather than dispensed in bulk containers whenever possible, i.e., take only what is to be used in a single treatment session and dispense into a disposable medicine cup.

2. An aseptic dispensing technique must be employed to prevent contamination of bulk supplies. For example, Vaseline and pressure indicator paste can be dispensed with tongue blades into disposable medicine cups rather than having the tubes or jars on the contaminated work surface. Pumice for lab procedures can also be unit dosed using a paper cup.

3. Plan ahead for supplies rather than contaminating supply containers. For example, place Temp-bond on a mixing pad prior to gloving for temporary cementation or place cavity varnish in a small, covered medicine cup.

4. If an unplanned material is required during a procedure, gloves should be removed, and the material unit dosed prior to regloving. For example, if Dycal is required it should be dispensed into the mixing area after degloving. Wash hands and reglove prior to continuing.

5. Supply containers and other items that must be kept at the unit or in carts should be placed on the countertop or in closed drawers and not on the covered cart-top or bracket table to avoid supply contamination.

6. Contaminated items such as bite registrations, appliance baseplates, models, dies, or impressions must not be transported from one unit to the next in a clinic or to the laboratory without first being disinfected (see Asepsis in the Dental Laboratory).

7. Personnel responsible for dispensing sterile instruments or supplies must wash their hands after touching contaminated items or surfaces.

Maintaining an Aseptic Environment

1. Never return any item to work surfaces that has fallen on the patient or the floor.

2. Do not allow patients to handle instruments. Children who are not patients and other visitors should not be allowed in clinics or treatment areas.

3. Never place unbagged or non-sterile items such as hand mirrors, timers, pencils, patient records, audio-visual aids, etc., on work surfaces or on the contaminated instrument area.

4. Hand mirrors used for patient education should be cleaned and disinfected following each use.

5. When making notes during a procedure use pen covers.

6. Take care to avoid cross-contamination via your gloves by pushing up glasses, touching face and hair, rubbing nose, or adjusting mask, etc. Put on face mask and adjust glasses first, then wash hands and put on gloves. Hair should be off the face and out of the work area to avoid falling into the work area.

7. Final chart entries should be made with unwrapped pen and clean hands after the unit has been cleaned.

8. Wash hands, glove, and open all sterile packages in the presence of the patient, including the handpiece, if possible and practical.

Sterilization

Instrument Sterilization

All reusable heat stable instruments, handpieces, mechanical scalers and prophy angles that contact a patient's blood, saliva, teeth or mucous membranes must be cleaned and sterilized before use on other patients. Pressurized steam, dry heat, chemical vapor and ethylene oxide are all acceptable methods of sterilization.

Only sterilizers that are routinely spore-tested and demonstrate repeated capacity to kill biological indicators may be used for sterilization of instruments[2,3]. Sterilizers must be spore-tested weekly and monitored with chemical process indicators on every load. Records of these tests are maintained by the sterilization supervisor.

All items to be sterilized must be properly cleaned (preferably in an ultrasonic cleaner) and properly packaged before sterilization.

Some items will be destroyed if a heat sterilization method is used, but must be cleaned and then sterilized in a School-accepted disinfectant solution using a submersion time and product concentration that achieves sterilization following the manufacturer's label directions.

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[2]WAC 246-816-520 and 246-816-620 Washington Administrative Code "Use of Barriers and Sterilization Techniques", 11/95.
[3]"Recommended Infection Control Practices for Dentistry," Morbidity and Mortality Weekly Report, May 28, 1993. (See Appendix A.)

Sterilization Procedures

A. Training of Sterilization Staff

Sterilizing equipment users must be trained prior to using the equipment. The training procedure must include written protocols and all users must have access to a copy of this procedure as well as the operator's manual for the equipment being used. Training and written protocols are required for central sterilization locations and clinic sterilization locations. Trainings on machines must be logged. UW EH&S Autoclave log can be used or can be used as a template to create your own, but all items must be present, (https://www.ehs.washington.edu/system/files/resources/autoclave-log.pdf). If your autoclave has the option for electronic records, then please be sure to save your records for inspection purposes. For the central sterilization locations, the supervisor will maintain training session records and publish an employee instruction manual entitled *Sterilization Procedure Manual* to supplement the training of central sterilization employees. The manual will provide staff with information on instrument processing and operation of sterilization equipment.

For other clinic sterilization locations, the supervisor or manager of the space will be responsible for ensuring maintenance of the machines according to the IFUs (instructions for use, or machine manuals) and trainings are logged. They are responsible for ensuring their sterilization protocols in their clinical manuals are in alignment with the central sterilization manuals.

B. Acceptable Sterilization Methods

1. Steam, dry heat, or chemical vapor sterilization must be used for all contaminated reusable instruments that can be sterilized in verifiable sterilizing devices. These must be thoroughly cleaned and sterilized before used in the treatment of another patient. Use of chemical disinfection as a substitute for sterilization of these items is unacceptable.

2. Alternate sterilants will be used for all reusable items that cannot tolerate heat sterilization. These items must be thoroughly cleaned and appropriately treated with either ethylene oxide or an FDA accepted disinfectant using either the “spray, wipe, spray” or “wipe, discard, wipe again” method.

   These agents must be used as follows:

a. Processing for the time length specified by the manufacturer is essential. In reference to shelf life, use life and reuse life (# loads).

b. Heavy gloves and safety glasses are required when handling glutaraldehyde.

c. After chemical "sterilization," items must be rinsed thoroughly under running tap water for at least one minute to remove all traces of glutaraldehyde.

d. If items will be used to penetrate tissue, they should be rinsed with sterile water. The instruments must then be packaged in a clean manner.

C. Instrument Sterilization Protocols

Following a patient treatment session, the following protocol for processing and sterilization will be employed:

1. Remove all disposable "sharps" from contaminated work area (cart top and bracket table) after completing care and place in the sharps container in the operatory.

2. Remove all disposable waste from the activity area and discard, taking care to properly dispose of materials designated as infectious or regulated waste (any body fluid).

3. All instruments must be cleaned prior to packaging for sterilization in an ultrasonic cleaner with the appropriate cleaning solution for at least 12 minutes. Handling instruments during cleaning should be done with heavy gauge utility gloves to minimize the risk of accidental injury. Even with utility gloves, never reach into a container or ultrasonic containing reusable sharps. Instead, rinse the instruments and then invert the container onto an appropriately covered surface. The ultrasonic cleaner lid must be in place during the cleaning cycle. Instruments must be rinsed with water following cleaning and spread on towels and allowed to dry or dried in an instrument dryer.

Turnaround Time
Personal instruments and handpieces turned in at the following times will be ready 1 hour later: 8:00 AM, 12:00 Noon, or 4:00 PM

4. Handpieces should not be ultrasonically cleaned, but must be externally cleaned with a Caviwipe to remove debris. The handpieces are lubricates then wiped to remove excess oil and debris.

5. Cleaning of School-owned instruments follows the same protocol except that instruments in cassettes will be cleaned automated washer by central sterilization staff.

6. Hand cleaning instruments must be avoided due to the possibility of injury and spatter if reasonably possible

7. Burs should be locked into the bur holder, cleaned ultrasonically for 12 minutes and then rinsed and dried.

8. Following drying of the instruments, they will be packaged in appropriate materials (read labels on packaging materials to determine suitability for specific sterilization process) and sterilized as noted in Table 2-2.

Table 2-2 Sterilization Guidelines

Steam Sterilization

- Instrument kits and cassettes
- Dental hand instruments
- Dental handpieces
- Other heat stable items not specifically noted

Dry Heat Sterilization

- Carbon steel instruments other than specified
- Burs in blocks
- Instrument kits and cassettes
- Dental hand instruments
- Other heat stable items not specifically noted

Chemical Vapor Sterilization

- Burs and bur holders
- Instrument kits and cassettes
- Dental hand instruments
- Dental handpieces
- Other heat stable items not specifically noted

2% Glutaraldehyde

- Non-heat sterilizable items, such as shade guides will be cleaned and then sterilized by immersion in glutaraldehyde for at least 10 hours. Notations will be kept with each glutaraldehyde bath to insure immersion of items for full time period. Solutions will also be dated and mixed fresh per manufacturer's instructions. Items will then be rinsed, dried, and packaged for distribution.

Glasses

- Protective glasses will be disinfected with a 10-minute soak in a 1:10 dilution of household bleach (sodium hypochlorite), then rinsed, dried, and packaged for distribution.

Handpieces

- Sterilization of handpieces is mandatory between patients. The only exception to this is the use of disposable prophy angles on the slow speed handpiece. In this case, the handpiece must be covered with a tubing cover leaving only the disposable prophy angle exposed.

- Debris on handpieces should be removed by scrubbing prior to packaging for heat sterilization.

- Handpieces should not be cleaned in ultrasonic cleaners, nor should they be disinfected by immersion in glutaraldehyde solutions.

The following surface disinfectants are approved by the School for use in its clinics and laboratories:

Table 2-3 Surface Disinfectants

SURFACE DISINFECTANT	SHELF LIFE	USE LIFE	REUSE LIFE	DISINFECTION TIME	STERILIZE TIME	MIX RATIO
Sodium Hypochlorite	Indefinite	1 day	1 day	10 min	N/A	1:10
Iodophor/Biocide Cavicide	2 years 2 years	1 day 28 days	1 day 28 days	10 min 10 min	N/A N/A	2 ml: 14 oz H_2O 1:1 ready to use
2% Glutaraldhyde Cidex Plus (3.2%)	2 years	28 days	dirty	10 min	10 hrs	1 Act:1Bt
Banicide	Dated	30 day	dirty	10 min	10 hrs	1:4
BIREXse	Indefinite	1 week	dirty	10 min	N/A	1/8oz:1qt

Monitoring Sterilization Equipment

A. Verification of Sterilization

1. Heat Sterilization (Spore Testing)

   Dental instruments pose a threat of cross-contamination between patients if the instruments are not sterilized between uses. Consistent killing of bacterial spores with a sterilizer provides the best known assurance that sterilization (death of all microorganisms) has occurred and that the device is functioning properly.

   At least once per week, each steam, dry heat, or chemical sterilizer will be checked with a biological control indicator. Control indicators are indispensable in checking against faulty packaging, loading, and sterilizer performances. Physical controls such as pressure gauges and thermometers are widely used but should be considered secondary methods of monitoring the efficacy of sterilization.

   a. **Steam Sterilization:** The biological indicator to be used for steam sterilization is *Bacillus stearothermophilus* spores. Use spore strips

or ampules with an average population of 10^4 to 10^6 Bacillus *stearothermophilus* organisms. The spores should be killed at 250^0 F in thirty minutes with steam sterilization.

b. **Dry Heat Sterilization:** The proper organism to use for testing dry heat sterilization processes is a spore strip with *Bacillus subtilis*. containing 10^6 organisms.

2. Glutaraldehyde Sterilant Solutions

   The effectiveness of the glutaraldehyde method cannot be routinely verified during use. Therefore, this or any other disinfection method must not be substituted for a verifiable sterilization method unless the instruments would be destroyed by high heat methods. Verifiable heat or gas sterilization methods provide the most effective way to ensure dental instrument safety.

B. Spore Testing Protocol

The following procedure establishes the testing procedures and equipment required to evaluate the performance of sterilizing equipment.

1. Place the spore strips or ampule in the load. The most reliable means for determining whether a sterilizing cycle has been successful is by planting biological indicators throughout the load before the load is subjected to the sterilization process. If the load contains wrapped items, a test pack should be prepared containing a spore strip. This pack should be positioned in the center of the sterilizer load.

2. Operate sterilizer in accordance with manufacturer's instructions.

3. Record chamber temperature as shown by the sterilizer indicator. Most large steam sterilizers utilize a chart recorder and the chart should be changed as necessary. It must be dated and retained to document the sterilizer's performance.

4. Upon completion of cycle, fast exhaust the chamber and remove test spore strips from sterilizer.

5. Incubate the indicators at the temperature and for the time indicated by the manufacturer after completion of the sterilizer cycle.

6. Record the results of the test indicating viability of the spores or successful sterilization.

7. Failure of a sterilizer to successfully indicate a spore kill on the biological indicator should trigger the recall of all materials processed in that machine, followed by verification of the failure by repeat biological indicator testing and repair of the sterilizer, if warranted. Overloading the sterilizer should be assessed as it is a common cause of sterilization failure. A questionable sterilizer should be taken out of service until a successful spore test has been achieved. If it fails a second time, then Dental Maintenance must be notified to review the machine.8. The Supervisor of Sterilization must be informed of any spore test failure.

C. Recordkeeping

Records must be maintained for one year. These records must include:

1. Calibration reports on thermometers and other equipment

2. Results of all monitoring (spore tests)

3. Temperature charts

D. Monitoring Efficacy of Ultrasonic Cleaners

Once every month, each ultrasonic cleaner will be evaluated for performance by a standardized test as follows:

1. A sheet of lightweight aluminum foil equivalent to the length and depth of the cleaner will be suspended in the cleaner filled with fresh cleaning solution and the unit operated for the appropriate cycle time (1 minute).

2. The test foil sheet will be examined for distribution of "dimples" and compared with previous records of performance.

3. Test foils will be dated and kept for reference.

4. Machines that exhibit bad or deteriorating performance as assessed by variation in "dimple" distribution must be repaired or replaced.
5. Logs must be kept of results and maintenance done for the ultrasonic.

E. Repair of Equipment

1. All equipment or instruments that may have come in contact with blood or other potentially infectious materials, such as saliva, will be cleaned and disinfected by an acceptable disinfectant using the "spray, wipe, spray" or “wipe, discard, wipe again” method, or sterilized, if possible, prior to servicing. If such decontamination is not possible, the repairing agency must be informed and the device labeled as being contaminated with potentially biohazardous materials.

2. Dental repair personnel are required to wear protective clothing, rubber gloves and eyewear when handling dental equipment that may have been contaminated with body fluids.

Asepsis in the Dental Laboratory

All materials and appliances from the clinics destined for laboratory work must be disinfected prior to leaving the clinic. In addition, all appliances and materials coming from the laboratory phase of care must be disinfected and rinsed prior to try-in or insertion. All phases of the laboratory stage of dental care will be carried out in a manner that minimizes the potential for disease transmission by contact with appliances or materials.

Implementation

A. Disinfection of Fixed and Removable Prostheses

1. All instruments contaminated with body fluids during the laboratory phase of treatment must be cleaned and sterilized following use. This includes all wax spatulas, lab knives, acrylic burs and stones, wax carvers, etc.

2. All custom impression trays, biteforks and occlusion rims must be disinfected after fabrication and before use with a patient. These items are disinfected thoroughly with the available FDA accepted spray or wipe disinfectant found in each clinic and wrapped in a disinfectant-moistened paper towel to insure saturation with the disinfectant for the required time recommended by the manufacturer.

3. Articulators, casts, baseplates, bite records and trial dentures must be disinfected following each clinical appointment. These materials must also be disinfected before taken to faculty offices for evaluation. Disinfection of the mounted casts can be accomplished best by spraying both the articulator and casts with the solution until saturation of the

casts is noted. The casts should then be wrapped with disinfectant-moistened paper toweling for the manufacturer's recommended time span. After that time, the articulator should be dried with paper towels and the condylar mechanism dried with compressed air. After each disinfection sequence, the articulator condylar mechanism should be sprayed with a fine mist of silicone spray (SGS) to preserve the mechanical integrity of the instrument. The entire surface of the instrument should be sprayed with silicone spray before mounting each new case to preserve its surface.

B. Disinfection of Impressions/Casts

2. 1. Alginate Impressions, Elastomeric Impressions (silicone, rubber base, polyvinyl), and Reline Impressions
    a. Impressions will be disinfected by rinsing the impression under tap water, sprayed with Cavicide, and rinsed for one final time.
    b. The impression will be bagged for transport.
    c. One gloved hand will hold the bag. The ungloved hand will open and manage the doors in the hallway.
    d. Upon entering the lab space, wash hands and redon PPE before casting.

C. Denture Disinfection

1. New dentures prior to delivery:

    a. Wash dentures vigorously with a brush and antimicrobial soap. Rinse well.

    b. Place in denture cup with 2% glutaraldehyde disinfectant for 20 minutes.

    c. Using aseptic technique, remove dentures, rinse well, and place on a clean towel.

2. Patient dentures prior to polish or repair:

    Follow procedures under "new denture" before polish or repair in lab.

D. Laboratory Procedures

Use of protective clothing, glasses, masks and gloves is required.

1. Change the paper covering the bench top when changing cases.

2. Disinfect receiving area in Prosthodontics lab with the "spray, wipe, spray" or “wipe, discard, wipe again” technique at least daily.

3. Cases should be disinfected before placement in the case pans.

4. Case pans should be disinfected with an FDA accepted disinfectant solution after use.

5. The same standards of infection control apply to fraternity labs or personal home labs. Impression trays must be cleaned prior to sterilization. Removal of the impression material as quickly as practical will make for easier cleaning.

E. Dental Lathe Polishing

1. Place a sheet of plastic wrap or a Styrofoam tray in the splash pan.

2. Dispense amount of clean pumice to be used in a paper cup.

3. Sterile rag wheels will be used (rinse, package, and autoclave after use).

4. An accepted disinfectant solution will be used to moisten pumice.

5. Unit dose polishing paste (Ivoclar Universal Polishing Paste).

6. Dispose of plastic wrap or Styrofoam tray when finished.

7. "Spray, wipe, spray" splash pan with an accepted disinfectant solution or “wipe, discard, wipe again” after use.

F. Preclinical Laboratory Protocol

Tissues including teeth, blood and other body fluids from all patients should be considered infectious. During sessions in laboratories, appropriate barrier precautions (masks, gloves and eye wear) must be worn when working with materials contaminated by human body fluids such as extracted teeth. Carrying out infection control work habits in the preclinical laboratory will enhance infection control procedures later during clinical practice. The following precautions are recommended for health care workers in preclinical laboratories when performing procedures on anatomical specimens such as teeth:

1. Laboratory gowns are provided to students.

2. Use of extracted teeth in instructional programs demands that attention to infection control practices such as the use of personal protective equipment be included in laboratory activities. Refer to Chapter 4, Section IIB of this manual for proper handling of extracted teeth.

3. Masks and protective eyewear must be worn if particles of tooth or restorative materials may come in contact with mucous membranes. Gloves should be changed and hands washed after completion of specimen use or processing.

4. Laboratory work surfaces should be cleaned and disinfected with a FDA accepted disinfectant when work activities are completed.

5. Equipment that has been contaminated with blood or other body fluids should be cleaned and heat sterilized if possible or at least disinfected before being repaired in the laboratory or transported to the manufacturer for repair.

Section 3 | Biomedical Waste Management

Policy Summary

Waste generated during the course of dental care will be disposed in a manner consistent with University, local, and state regulations pursuant to the protection of individuals with possible exposure risk.

A. Definitions

1. ***Blood/Body Fluids:*** Flowable "liquid" blood or body fluids.
2. ***Blood or Body Fluid Saturated Items:*** Items in which the blood or body fluid in question is not dried or fully absorbed and has the potential to drip (cotton rolls, gauze, etc.)
3. ***Bloody Wastes:*** Items that have come into contact with blood or body fluids and on which the fluid has dried (gloves, bibs, rubber dams, etc.)

B. Regulated Waste Categories

1. Items referred to as "sharps" including items such as used and unused needles, scalpel blades, sutures, anesthetic carpules, instruments, and broken glass
2. Human tissues and foreign bodies including teeth removed during surgery
3. Blood-contaminated material or items that would release blood or other potentially infectious materials, including saliva, if compressed (Blood or Body Fluid Saturated Items)
4. Liquid blood in free flowing form (Blood/Body Fluids)
5. Chemical hazards

Biohazardous Waste Management

To meet these regulations, the following waste management procedures must be followed:

A. General Clinical Material

1. Sharps removed from their original packaging must be disposed in the red puncture-resistant, leak-proof containers found in each operatory.

2. All human materials (except extracted teeth) removed during surgery must be managed in accordance with the Tissue Management Policy of the School. The Division of Oral Pathology will arrange for appropriate disposal following examination and reporting.

3. All blood-contaminated disposable materials must be transferred from the patient's mouth and placed directly into a bedside collection bag taped to the cabinetry or mobile cart in the operatory (this is true for materials that would release *Blood or Body Fluid Saturated Items* or other potentially infectious materials, including saliva if compressed, or that are caked with dried blood or other infectious materials, *Bloody Wastes*). Materials placed in this bag include, but are not limited to soaked or blood-contaminated cotton rolls, gauze, cotton pellets, floss, and tissue dressings ("packs").

   Following patient treatment, the bedside bag must be closed and placed in the biohazardous waste bag-lined receptacle (red bins) located in each clinic. Staff will collect and close the autoclave bag lining the bin at least daily and deposit in a biohazardous waste container on each floor when full. Biohazardous waste is then taken to Health Sciences Laboratory Services in T-276 weekly between 9-11AM ., M-F, for sterilization disposal. All required information that needs to be on the bags and for processing can be found at https://hsasf.hsa.washington.edu/instructional-support/labservices/sterilization-services/.

B. Procedure for Extracted Teeth

1. Extracted teeth are not classified as pathological waste in the State of Washington, but because of contamination with blood and saliva they must be handled as biohazardous material in the dental school.

2. Extracted teeth should NOT ordinarily be returned to patients. Unless they will be used for research or educational purposes, the teeth are infectious waste and should be treated prior to disposal. If the patient insists on obtaining his/her extracted tooth, it may only be returned to that patient following a 10-minute soak in a 1:10 solution of sodium hypochlorite (i.e., chlorine bleach). Handle extracted teeth only with forceps or gloved hands[1, 2].

[1] Schulein, TM. Infection control for Extracted Teeth in the Teaching Laboratory. J. Dent. Educ. 1994; 58:411-13.
[2] Tate, WH, White, RR. Disinfection of human teeth for educational purposes. J. Dent. Educ 1991; 55:583-5.

3. Teeth that will be used for research or educational purposes should be placed in a leak-proof container of 1:10 sodium hypochlorite. The container should be no more than one-third filled with teeth and all teeth must be completely submerged for at least two weeks before handling. Care should be taken to avoid contaminating the outside of the container. Gloves must always be worn when handling the container. Eyeglasses and gloves must be used to prevent exposure to the sodium hypochlorite when adding sodium hypochlorite to, or when retrieving the teeth from, the container. Teeth should be thoroughly rinsed with water to remove as much residue as possible. (Note: If these procedures render the teeth inadequate for the intended research, contact the Health and Safety Task Force concerning the potential development of alternative methods of sterilization or disinfection.)

4. Teeth with amalgam restorations **must not** be heat sterilized to avoid the possibility of mercury vapor release.

C. Disposable Items Management

Items manufactured for "single use" may not to be reused. Such items include needles, plastic suction tips, prophylaxis points, cups and brushes, examination or surgical gloves, masks, operatory surface covers, and disposable clinic attire. **Used disposable items must not be removed from the clinic and should be discarded in available containers immediately after use.**

Chemical Waste Management

A. Chemical Spill Management

The range and quantity of hazardous substances used in the facilities require preplanning to respond safely to chemical spills. The cleanup of a chemical spill should only be done by knowledgeable and experienced personnel. Spill kits with instructions, absorbents, reactants, and protective equipment should be available to clean up minor spills. A **minor** chemical spill is one that facility staff members are capable of handling. All other chemical spills are considered to be in the **major** category.

1. Minor Chemical Spill Protocol
    a. Alert all people in the immediate area of the spill.
    b. Wear protective equipment, including safety goggles and long-sleeved gown.

c. Avoid breathing vapors from the spill.
d. Confine spill to smallest area possible.
e. Use appropriate kit to neutralize and absorb inorganic acids and bases. Collect residue and place it in a container and dispose of it as chemical waste.
f. Clean spill area with water.

2. Major Chemical Spill Protocol
   a. Attend to any injured or contaminated individuals and remove them from further exposure to the spill.
   b. Alert people in the work area to evacuate.
   c. If spilled material is flammable, turn off ignition and heat sources.
   d. Call Chemical Spill Emergency Response at 543-0467.
   e. Close doors to affected area.
   f. Have any individuals knowledgeable of spill incident and the facility staff assist in clean up.

B. Mercury

Mercury is considered a hazardous chemical and must be disposed of by the Safety Assistant through the Chemical Waste Section of EH&S. A chemical collection request form, as shown in Figure 4-1, must be submitted to EH&S to arrange for a pick-up of chemical waste items.

1. Small Mercury Spills
   In the event of a small mercury spill (under 5 ml of mercury) the following protocol should be followed:
   a. Mark or cordon off the spill area to prevent the inadvertent spread of spilled mercury.
   b. Wear gloves and goggles during clean-up procedures.
   c. Moisten a mercury-absorbent sponge with water and wipe down the spill area. Some of the mercury will be absorbed into the sponge and some will be amalgamated on the sponge surface. Rubbing mercury absorbent powder into the surface of the sponge will increase its absorbent capacity. These materials can be obtained from the dispensary.
   d. Repeat step c as necessary until the entire area has been decontaminated.
   e. Place any broken glass or other mercury-contaminated material such as gloves in a screw capped plastic container. Contaminated sponges should be placed in a plastic bag with zipper lock, labeled "Hazardous Waste" and stored under a fume hood or in a well-ventilated area until it is picked up by the area supervisor.
   f. The area supervisor will submit a hazardous waste collection request form to EH&S to order the pick up.
2. Large Mercury Spills

In the event of a large mercury spill (over 5 ml of mercury) the following protocol should be followed:

a. Mark or cordon off the spill area to prevent the inadvertent spread of spilled mercury.
b. The clean-up should be performed by specially trained personnel. For the dental school clinics, either the area supervisor or the Dental Equipment Repair Technician should be contacted to manage the spill using a mercury vacuum. If both of these individuals are unavailable, call EH&S at 543-0467 for clean-up advice or follow up if needed.
c. Following the clean-up, the contaminated materials must be disposed of as described above.
d. EH&S must be notified of large spills so they can perform a post clean-up evaluation prior to the release of the contaminated area into service.

C. Amalgam Scrap

1. Amalgam scrap must be stored in the sealable jars located in each cubicle where amalgam services are provided. The scrap must be covered by a 1:10 solution of sodium hypochlorite in the jar.
2. Extracted teeth with amalgam must be handled in the same manner by storing them in a closed container of 1:10 solution of sodium hypochlorite.
3. Full containers must be sent to the Sterilization Supervisor for storage in a larger container with a Chemical Waste label until the waste is collected by the Chemical Waste Section of EH&S for proper disposal. A request form must be completed for chemical waste collection. See figure 4-1.

D. Amalgam Capsules

Used amalgam capsules must not be disposed of with normal waste.

1.. Place the capsules in the sealable receptacle provided and close the lid tightly. Clinic staff will empty the jars weekly and consolidate the waste into a larger sealed container to be disposed with amalgam scrap by the Chemical Waste Section of EH&S. Notify the area supervisor if the container gets full between scheduled pick-ups.

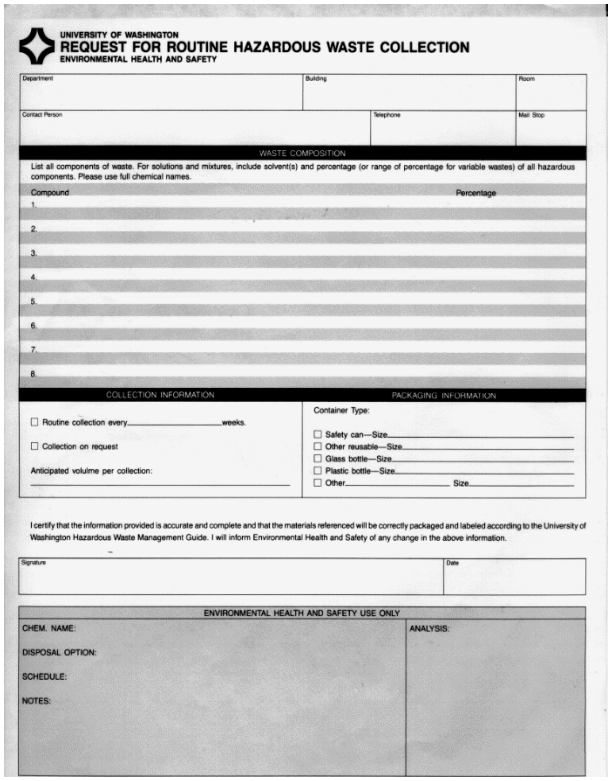
E. Lead Foil from Dental X-ray Film Packets

1. Lead foil from dental film packets must be deposited in containers labeled "Recyclable Lead Foil Only" that are located at each film processing station. No other waste may be placed in these containers.
2. Students, faculty, and staff must be trained in the proper management of dental film packet disposal.

3. The area supervisor will collect the full containers and consolidate the waste into a sturdy, clear plastic bag for pick up by the Radiation Safety Section of the Department of EH&S.

F. X-ray Film Developing Solutions

1. X-ray fixer contains silver salts and is considered a hazardous chemical that must not be poured into the sewer system. It must be collected by the Dental Equipment Repair Technicians and delivered to the Chemical Waste Section of EH&S for proper disposal.



UNIVERSITY OF WASHINGTON
REQUEST FOR ROUTINE HAZARDOUS WASTE COLLECTION
ENVIRONMENTAL HEALTH AND SAFETY

Department	Building	Room

Contact Person	Telephone	Mail Stop

WASTE COMPOSITION

List all components of waste. For solutions and mixtures, include solvent(s) and percentage (or range of percentage for variable wastes) of all hazardous components. Please use full chemical names.

Compound	Percentage
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

COLLECTION INFORMATION

☐ Routine collection every_____weeks.

☐ Collection on request

Anticipated volume per collection:

_____

PACKAGING INFORMATION

Container Type:

☐ Safety can—Size_____
☐ Other reusable—Size_____
☐ Glass bottle—Size_____
☐ Plastic bottle—Size_____
☐ Other_____ Size_____

I certify that the information provided is accurate and complete and that the materials referenced will be correctly packaged and labeled according to the University of Washington Hazardous Waste Management Guide. I will inform Environmental Health and Safety of any change in the above information.

Signature	Date

ENVIRONMENTAL HEALTH AND SAFETY USE ONLY

CHEM. NAME:	ANALYSIS:
DISPOSAL OPTION:	
SCHEDULE:	
NOTES:	

Figure 4-1. Chemical Collection Request Form (81/2" x 11")

2. X-ray fixer that has been processed through a silver scavenging system can be disposed of in the sewer system.
3. X-ray developing solution is considered a hazardous chemical that must not be poured into the sewer system. It must be collected in the same manner as fixer.

Section 4 | Accident Reporting and Follow-up

Injury and Exposure Procedures

Policy Summary

Emergency procedures must be posted in each dental operatory and medical emergency reminder cards must be distributed by the Office of Clinical Services to each dental health care worker. These documents will contain the following information:

1. ***Life-threatening Medical Emergency Protocol.***
   a. Call **911** (answered by University Police who will contact Medic-I). Direct them to the loading dock between B- and D-wings. Be prepared to give your name and campus location (building/room/phone) and a description of the emergency.
   b. Someone must stay with the patient ***at all times***.
   c. Identify another person to meet aid car and guide Medic-I to the Emergency while a second person holds elevator.
   d. Retrieve drug kit and oxygen from the dispensary.
   e. Students and staff immediately notify supervising faculty of the emergency.
   f. Complete an Accident/Incident report.

2. ***Aspiration/Swallow of a Foreign Object Emergency Protocol***
   a. If a foreign object is suspected of being swallowed or aspirated during dental procedure:
      - If patient shows no signs of distress such as coughing or choking, look for the missing object (crown, rubber dam clamp, etc.) by checking the mouth, floor, crevices of chair, suction trap, and surrounding area.
   b. If the object **is not** found:
      - Notify supervising faculty member and area staff immediately.
      - Area staff pages the dental assistant supervisor to the student's cubicle and delivers a wheelchair.
      - Student transports the patient to UWMC Emergency Room for evaluation. ***DO NOT DELAY BY COMPLETING THE DENTAL PROCEDURE***. The dental assistant supervisor or an available dental assistant should accompany the student and patient when possible.

- Student explains the situation to emergency room staff and requests appropriate treatment for the patient.
- Give the Office of Clinical Services phone number (543-3367) to hospital staff for billing purposes.
- Remain with the patient until patient evaluation results are known.
- If the foreign object was determined to have been swallowed, be sure that the patient has instructions from emergency staff and transportation home before leaving.
- If object was aspirated, call the Office of Clinical Services and remain with patient until course of action is determined.
- If object was aspirated, notify individual listed as emergency contact in patient's record.
- Follow up by contacting patient that evening or next day.
- Complete incident reports and other paperwork after patient's needs have been addressed.

c. If a patient has obvious signs of distress or choking, attempt to remove the object immediately. Follow the above protocol if coughing stops. Call 911 if unsuccessful.

3. Potential human body fluid exposure (Exposure Incident)

a. If the exposure occurs during weekday hours and the incident involves a potential exposure to human body fluid or materials contaminated with body substances (e.g. needlestick or splash to mucus membranes) or it involves non-intact skin, ***perform appropriate first aide and then*** call and ***report without delay (within one hour)*** to:

UWMC Employee Health Service
Room NN256A (Adjacent to the Emergency Room)
598-4848 (24 Hours per day)
8 AM to 3:15 PM Monday-Friday

b. If the potential exposure to human body fluid occurs between 3:15 pm and 5:00 pm, contact UWMC Employee Health Service at 206-598-4848 for triage to the UWMC Emergency Department. Go directly to the UWMC Emergency Department and inform them you are a student or employee of the dental school for follow-up.

c. If the incident involves spatter to eyes or face, emergency eyewash stations are located in each clinical area and should be used as soon as possible.
d. Fees

All UW employees, students and volunteers can receive initial assessment and treatment of work-related illness, exposure or injury at no charge. Student health fees cover the related charges.

e. Do not dismiss the patient until speaking with the nurse as the patient may need to have blood drawn.

f. Post-exposure evaluation and follow-up protocol will be determined by the Employee Health Nurse and may include testing of the source and recipient blood, medically indicated prophylaxis, counseling, and evaluation of subsequent reported illnesses.

g. An accident or exposure report should also be completed as soon as possible. Reports are available in each clinic or from the Office of Clinical Services, D322. The original should be returned to the Office of Clinical Services following completion.

4. Other Injuries or Exposures

Staff, faculty and students who receive a non-life-threatening injury on the job should do the following:

a. Use first aid kit if necessary (located in all labs and clinics)

b. Notify supervisor

c. Report to:
   - Students: Hall Health Center
   - Employees: UWMC Employee Health Nurse

d. Report the injury to the department supervisor who will document the event in the Online Accident Reporting System (OARS).

e. Document the event on an accident/incident form (available in clinics and D 322) and submit to the Office of Clinic Services who will route copies and take action as appropriate.

Records of Injuries or Exposures

1. The Office of Clinical Services will forward injury or exposure reports to the Health and Safety Director and to the Health Sciences Risk Manager who will forward the report to the employee medical history record. The report should include details of the incident.

2. The Health and Safety Director will request a written opinion from the evaluating health care professional within 15 days following completion of the evaluation. This opinion will include: 1) documentation that the employee has been informed of the results of the tests or evaluation and 2) that the employee has been informed of any conditions resulting from the incident that might require further evaluation or testing.

3. All contents of employee medical health records are confidential.

4. Employee medical records will be retained for the duration of employment plus 30 years in compliance with HIPAA regulations.

Appendices

Appendix A - Related Hazard Standards Online Resources

I. OSHA hazard communication standard, 2002
http://www.osha-slc.gov/SLTC/hazardcommunications/
http://www.osha.gov/OshDoc/toc_fact.html

II. University of Washington Infection Control Policies
http://www.ehs.washington.edu/manuals/bsmanual%5Fpdf/index.htm

III. Recommended Infection Control Practices for Dentistry
http://www.cdc.gov/OralHealth/infection_control/
http://www.cdc.gov/mmwr/preview/mmwrhtml/00021095.htm

IV. Bloodborne Pathogens, Title 29 of the Code of Federal Regulations
The following links were gathered from a search on bloodborne pathogens http://www.osha.gov/pls/oshaweb/owares.do_search

2003 - 06/05/2003 - Employer's responsibility to protect employees from workplace hazards through appropriate hazard control methods.

Updated U.S. Public Health Service Guidelines for HIV. (9/2005)

18-Jan-2001	66:5317-5325	Occupational Exposure to Bloodborne Pathogens; Needlestick and Other Sharps Injuries; Final Rule.
29-Sep-2000	65:58569-58570	Bloodborne Pathogens Standard; Extension of the Office of Management and Budget's (OMB) Approval of Information-Collection (Paperwork) Requirements.
09-Sep-1998	63:48250-48252	Occupational Exposure to Bloodborne Pathogens: Request for Information.
15-Jul-1997	62:37936	Agency Information Collection Activities: Proposed Collection;Comment Request; Bloodborne Pathogens Standard
18-Mar-1994	59:12985-12988	Washington State Standards; Notice of Approval
01-Jul-1992	57:29206	Occupational Exposure to Bloodborne Pathogens; Correction
13-Apr-1992	57:12717	Occupational Exposure to Bloodborne Pathogens, OMB approval of Information Collection Requirements
13-Apr-1992	57:12717	Occupational Exposure to Bloodborne Pathogens, OMB approval of Information Collection Requirements

Appendix B - Clinic Attire and Proper Donning of PPE

Checklist for Donning and Doffing PPE (CDC, September 2022)

Title	Description	Rationale
Supplies	Gather supplies, which include: • Gown • Mask or respirator • Goggles or face shield • Gloves	Allows for efficiency and prevents disruption of the procedure
Rights	Support privacy, safety, comfort, and dignity during the entire procedure.	Protects the individual's rights
Identify	Identify yourself by name and confirm the individual's identity per organizational policy.	Minimizes anxiety and prevents medical errors
Supplies	Assemble supplies on a protective barrier on a bedside table.	Allows for efficiency and prevents disruption of the procedure
Infection Control	Perform hand hygiene. Use infection control measures and standard precautions during the entire procedure.	Prevents the transmission of microorganisms
Order	Don PPE in the following order: 1. Gown 2. Mask or respirator 3. Face shield or goggles 4. Gloves	Ensures proper procedure and prevents the transmission of microorganisms
Don Gown	Locate the neck, back opening, and sleeves of the gown. Put the gown on with the opening facing the back. Put each arm into each sleeve of the gown. Pull the top of the gown over your shoulders.	Follows proper procedure and prevents the transmission of microorganisms
Check Gown Coverage	Make sure it fully covers the torso, from the neck to the knees, and covers the arms to the end of the wrists.	Prevents the transmission of microorganisms
Select Mask or Respirator	Determine what type of PPE to wear: • Surgical masks should be used for potential splashes from blood, mucous, stool, and urine. • A respirator should be used according to your organization's policies.	Ensures proper face protection
Identify the Top of the Mask	Identify the top of the mask, which has a stiff, bendable edge.	Ensures proper mask placement
Identify the Front of the Mask	Identify the front side of the mask and face this side away from you so the other side touches your face.	Ensures proper mask placement

Don Mask	Hold the mask by the earloops, ties, or bands. Place the elastic bands or ties around your head and neck. If you are using a mask with earloops, place the loops around your ears.	Prevents the transmission of microorganisms
Fit Mask	Fit the flexible band to the bridge of your nose. Fit the mask around your face and below your chin.	Prevents the transmission of microorganisms
Inspect Respirator	Inspect it for damage. Do not use it if it appears damaged, dirty, or damp.	Ensures respirator quality
Don Respirator	Put your fingertips on the bar (or foam) of the nosepiece of the respirator. Put the bottom of the respirator under your chin and the nose piece bar at the top.	Prevents the transmission of microorganisms
Secure Straps	Place the top strap near the crown of your head. Place the bottom strap below your ears at the back of your neck. Avoid crossing or twisting them.	Ensures proper placement and prevents the transmission of microorganisms
Adjust Nose Piece	Mold the nose piece by pressing down on both sides with your fingertips.	Ensures proper placement and prevents the transmission of microorganisms
Check and Correct Gaps	Cover as much of the respirator with your hands as possible and exhale. If air leaks from the edges or if your glasses fog, readjust the respirator and try again.	Ensures proper placement and prevents the transmission of microorganisms
Select Eye Protection	Select a face shield or goggles according to the required protection. Assemble the eye protection if needed.	Ensures proper eye protection
Don Goggles	Place the goggles over your eyes. Secure them with an elastic band around your head or earpieces over the top of each ear. Adjust or tighten as needed.	Follows proper procedure and prevents the transmission of microorganisms
Don Face Shield	Place the face shield by holding onto the straps of the shield with both hands. Place the straps up and over your head. Secure the shield on your forehead.	Follows proper procedure and prevents the transmission of microorganisms
Check and Adjust or Tighten	Check that the front and sides of the face are covered. Adjust or tighten as needed.	Prevents the transmission of microorganisms
Inspect Gloves	Inspect your gloves for holes and tears.	Prevents body fluids or waste from getting through gloves
Remove Jewelry	Remove any rings, watches, bracelets, or other items worn on the hands/wrists.	Prevents cuts or tears in the gloves

Don Gloves	Hold one glove with one hand and insert the other hand into that glove by spreading your fingers and slipping your hand inside the glove. Make sure the glove feels secure, has no tears or holes, and the cuff of the glove covers as much skin as possible.	Prevents the transmission of microorganisms
Remove PPE	Remove PPE in the following order: 1. Gloves 2. Face shield or goggles 3. Gown 4. Mask or respirator	Follows the proper procedure for doffing PPE and prevents the transmission of microorganisms
Infection Control	If the hands become contaminated during the removal of any PPE, immediately wash them or use an alcohol-based hand sanitizer.	Prevents the transmission of microorganisms
Remove Gloves	Pull one glove away from one hand by pulling the outside near the wrist with your non-dominant hand.	Follows the proper procedure for doffing gloves and prevents the transmission of microorganisms
Turn Inside Out	Turn the glove inside out while taking it off to avoid contamination. Keep that glove in your non-dominant hand.	Follows the proper procedure for doffing gloves and prevents the transmission of microorganisms
Remove Second Glove	Starting at the wrist of the second glove, use one or two fingers of your ungloved hand to peel off the glove from the inside, turning it inside out as it is removed.	Follows the proper procedure for doffing gloves and prevents the transmission of microorganisms
Discard Gloves	Discard both gloves in the appropriate trash can or bin.	Maintains infection control practices and a clean environment
Remove Face Shield or Goggles	Remove the face shield by grabbing the elastic straps at the temples and then leaning your head slightly forward. Lift the straps forward, up, and over your head. Remove your goggles in the same way.	Follows the proper procedure for doffing eye protection and prevents the transmission of microorganisms
Discard Goggles or Face Shield	Discard the goggles or face shield if they are for one-time use only. If they are reusable, put the goggles or face shield in their assigned container.	Maintains infection control practices and a clean environment
Untie or Break the Gown Ties	For gowns that have ties that can be broken, untie them or gently pull them to break them. Avoid forceful movement. Unfasten any snaps or buttons if present.	Prevents the transmission of microorganisms

Pull the Gown Away	Touch only the inside of the gown when pulling it away from your neck and shoulders and away from your body.	Prevents the transmission of microorganisms
Turn the Gown Inside Out	Turn the gown inside out while pulling it off each arm and rolling the gown down and into a bundle.	Prevents the transmission of microorganisms
Dispose of Gown	Throw the gown bundle in the appropriate trash can or bin.	Maintains infection control practices and a clean environment
Remove Mask or Respirator	Without touching the front of the mask/respirator, loosen or unfasten the ties around the ears at the bottom, then the top. Remove the mask/respirator.	Follows the proper procedure for doffing a mask or respirator and prevents the transmission of microorganisms
Dispose of Mask or Respirator	Discard disposable supplies. Put reusable respirators in the assigned container.	Maintains infection control practices and a clean environment
Infection Control	Perform hand hygiene.	Prevents the transmission of microorganisms
Leave	Leave commonly used items within the individual's reach at the end of care.	Promotes comfort and sense of well-bein