

**INFECTION CONTROL POLICIES  
HORRY GEORGETOWN TECHNICAL COLLEGE  
DENTAL CLINIC**

**HGTC DENTAL CLINICS**  
**DENTAL UNIT WATERLINE RATIONALE & PROTOCOL**

**Dental Hygiene Clinic and Community Dental Clinic**

**Rationale for Waterline Safety & Precautions:**

Biofilm—a coating of microorganisms—can develop in dental unit waterlines (the tubes connecting instrumentation such as low and high-speed handpieces, air/water syringes and ultrasonic scalers with a water supply). To deliver water of optimal microbiologic quality, dental unit waterlines must be maintained regularly. Colonization of microorganisms within the waterlines may not pose a concern for healthy individuals, but it may place elderly or immunocompromised patients at unnecessary risk. Although infection associated with microbial contamination of waterlines appears to be rare, dental unit waterlines have been shown to harbor a wide variety of microorganisms including bacteria, fungi, and protozoans in numbers sufficient to cause illness. These microorganisms colonize and replicate on the interior surfaces of the waterline tubing forming biofilms. Biofilms can serve as a reservoir, amplifying the numbers of free-floating microorganisms in the water.

As a result, the CDC recommends flushing water lines at the beginning of the day to temporarily reduce the level of microbes in the water. Additionally it is recommended to flush handpieces after patient use to help reduce any patient-borne microbes that may have entered the handpiece itself during clinical care.

**Daily Waterline Protocol for the HGTC Dental Clinics:**

At the beginning of each clinic day, dental unit lines and devices should be flushed with water **for at least two minutes**. The flushing of lines should occur prior to attaching any handpieces, ultrasonic scalers, air water syringe tips or other devices.

The dental unit lines and devices should be flushed after each patient for a minimum of 20 seconds.

**HGTC DENTAL CLINICS**  
**SUCTION LINE MAINTENANCE PROTOCOL**  
**Dental Hygiene Clinic and Community Dental Clinic**

At the end of each clinic session, or following procedures that generate heavy bleeding, the following maintenance should be performed:

1. Filling the suction cleaner container located under operatory cabinet:
  - If suction cleaner container is full, proceed with Step 2. If empty, follow the steps below to fill the container:
    - Remove container from the rear delivery cabinet and disconnect lines. Be careful with this procedure as the computer is housed in this cabinet, as well.
    - Place container on cart and take container to sterilizing center.
    - Place 4 pumps full of *SaniTreet* (located under sink on dirty side of sterilizing center) into container and fill with regular tap water to the marked fill line.
    - Return container to the unit, connect lines and return to the cabinet.
2. Place suction lines (low and high volume) on the system flush, turn on unit and let the system flush. It will turn off automatically.
3. Remember, prophy paste is the main culprit of clogged suction lines. This **MUST** be done routinely to keep the lines clear.

# STEP-BY-STEP INFECTION CONTROL GUIDELINES

## THE CLINICIAN

### Uniform

1. **UNIFORM LAB COATS MUST MEET THE OSHA REQUIREMENT OF LONG, CUFFED SLEEVES WITH ROUND NECKS. NO V-NECK OR OPEN NECK TOPS ARE ALLOWED.** A clean, pressed uniform must be worn each day.
2. Students may not enter clinic without a long sleeved lab jacket. Students must wear the lab jacket during set up and clean up procedures. Students are required to don a disposable gown once the patient has been seated and clinical contact is about to begin. Students may not enter the waiting area or leave the clinic wearing the disposable gown.
3. Clinic labcoats **MUST NOT** be worn to and from campus. Bring the labcoat with you to school and put on prior to entering clinic. The labcoat should be removed at the clinical facility after use and taken home to be washed and dried. Bacteria can penetrate the uniform, so to practice maximum infection control and prevent cross-contamination of any kind, clinical labcoats will be worn in the clinic area only.

### Hair

1. Remember to keep your clean hands out of hair. Your hair harbors your own normal microflora as well as microorganisms collected from aerosols generated during dental procedures; thus your hair becomes a vehicle for cross-contamination.
2. Hair must be up, off collar, and secured when in uniform. Hair bonnets/coverings will be worn to provide further protection to the student clinician. Hair bonnets will be disposed after use; fabric hair coverings are to be taken home by the student and laundered.

### Eyes

1. **SAFETY GLASSES/FACE SHIELDS AND LOUPES ARE CONSIDERED TO BE PART OF THE CLINICIAN'S UNIFORM AND MUST BE WORN DURING ALL LABORATORY AND/OR CLINICAL SESSIONS WHILE WORKING ON PATIENTS!!!** Safety glasses must be worn during clinical set up and clean up procedures to protect the eyes from harmful microbes and/or disinfecting materials.

2. If you are the *Clinical Assistant* and you are assisting a student who is working on a patient, you must also wear proper PPE.
3. At the end of the day, unless it is needed sooner, clean glasses to remove all splatter and then spray/wipe with a surface disinfectant. Allow glasses to stay wet for 5-10 minutes, then rinse with water and dry. (This is done to prevent any fumes entering the eye and also to prevent any allergic skin reaction to the disinfectant).

### **Fingernails**

1. Short nails are easier to keep clean; microorganism-laden debris trapped under fingernails may cause cross-infection. Nails may not extend over fingertips.
2. False fingernails **MUST NOT** be worn. Contamination may occur from fungal growth occurring between the false and natural nail. The false nail can compromise the integrity of the glove.
3. No fingernail polish of any kind is allowed.

### **Jewelry**

1. **NO JEWELRY WHILE WORKING** on patients EXCEPT ONE small, stud earring PER EAR; microorganism-laden debris may become trapped in irregularities of the jewelry, especially in gems, thereby serving as a source of cross-infection. No hoop earrings of any kind are to be worn.
2. **NO OTHER PIERCINGS OF ANY KIND ARE NOT TO BE WORN IN THE CLINICAL AREA. THIS INCLUDES PIERCINGS IN THE NOSE, TONGUE, EYEBROW, etc.**
3. Non-gem rings may be worn. A plain gold band is allowed; however, the practice of wearing the plain gold band is discouraged under gloves.
4. Watches can be worn if they are completely covered by gloves. No smart watches are permitted.

### **Clinic Shoes**

1. Clinic shoes will be white, with closed toe and heel. No perforated clogs such as Crocs are permitted.
2. Clinic shoes should be made of a smooth, sturdy material such as leather or polyurethane that can easily be wiped clean. No laces or canvas shoes are permitted.
3. Clinic shoes must be removed after clinic sessions and stored inside students' lockers. Clinic shoes may not be worn to and from school, to

prevent microbe transmission. It is recommended that student wear shoes to and from school and change into/out of clinic shoes at school.

### **Face Masks**

1. Face masks **MUST** be worn at all times when working in the clinic on patients and during pre-disinfection and post-treatment disinfection of the operatory. The face mask should also be kept on AFTER completing aerosol producing procedures. Again, wearing a facemask protects your face from microbes and/or disinfectant materials being used to clean.
2. If you are the *Clinical Assistant* and you are assisting a student who is working on a patient, you must also wear a facemask.
3. Face masks **MUST** be changed frequently if they become moist. A moist facemask will transmit bacteria to the student's respiratory system.
4. Face masks **MUST** be removed by handling the elastic ear strings. **DO NOT TOUCH THE MASK AT ANY TIME!**
5. When leaving the operatory, remove your face mask. **Never** pull the mask down over your chin and then walk around the clinic.
6. Face masks are not to be worn outside of the clinical area.

### **Gloves**

1. Gloves are worn for the student's protection AS WELL AS the protection of the patient. They must be long enough to fit over the uniform cuff. As the clinic is a latex-free environment, all gloves **are latex-free.**
2. Gloves are to be worn in the **operatory area** only, and only while involved in direct patient care.
3. When the student leaves the operatory for any reason, the gloves will be removed and discarded. If hands are not visibly soiled, an acceptable hand sanitizer can be utilized. Otherwise, hands should be washed.
4. When returning to the operatory, either sanitize or wash, and thoroughly dry hands before putting on gloves again.
5. When gloves are on hands, practice scrupulous aseptic technique. Do not touch anything other than instruments and devices used in treatment.
6. Should gloves become torn or compromised for any reason, immediately stop what you are doing, remove gloves, get a new pair of gloves and follow procedures as noted above in #4.

7. When wearing gloves, **DO NOT**:
  - a. Leave the operatory
  - b. Shake hands with someone
  - c. Adjust Your Glasses
  - d. Touch an environmental surface such as door knobs, telephone, mobile cart drawers, etc. that do not have a barrier
  - e. Pick up an instrument from the floor
  - f. Touch an uncovered light
  - g. Touch your face mask

## **PRE-APPOINTMENT**

### **Handwashing Upon First Entering The Clinic**

1. The first hand washing of the day should be an “**ANTISEPTIC HANDWASH**”. Conscientious adherence to the following protocol will result in an acceptable level of disinfection.
2. Remove all jewelry.
3. Use cool water. (Hot water causes your pores to open, making disinfection more difficult).
4. Thoroughly wet hands and forearms, then lather using a liquid antimicrobial soap.
4. Thoroughly scrub hands, nails, and forearms.
5. Be sure to scrub both the palmar and dorsal sides of each hand, all four surfaces of each finger, interdigital areas, wrists, and forearms.
6. Clean under fingernails.
7. Rinse well with cool water.
8. Repeat lathering and rinsing two more times. All three washings are for 30 seconds each.

9. Using 2 clean paper towels, dry hands first with each of the paper towels, then forearms, in the same manner.
10. Your hands are now ready for gloving.

### **Handwashing Between Patients**

1. Hands should be washed before and after each patient and at other times during an appointment when necessary to prevent contamination of your operatory or cross-infection of your patient. It is always a good idea to do your hand washing where patients can observe you, thus quelling any doubts as to whether or not you have washed your hands.
2. Hand sanitizers can be used during the appointment, if your hands are free of debris.

**PREPLAN** your treatment sessions to minimize repeated entry into drawers and cabinets after washing hands.

### **UNIT SET-UP**

#### **Preparing The Operatory**

1. Use heavy-duty utility gloves for preparing the operatory for set-up.
2. Flush water lines by running water in air/water and handpiece hoses for 2 minutes.
3. Disinfect the following with surface disinfectant wipes and ***follow manufacturer's directions for contact time***. For example, after wiping surfaces with SaniCloth AF3 Germicidal wipes, they surface should remain wet for at least 3 minutes before placing any barriers.
  - a. All cabinet surfaces (back cabinet and side cabinets) and handles of cabinet
  - b. Tray delivery unit
  - c. Handpiece hoses and holder
  - d. Air/water syringe and oral evacuator bodies and holder
  - e. Panel controls of on/off switch
  - f. Foot control rheostat



- g. Light handles and arm
- h. DO NOT USE DISINFECTANT ON UPHOLSTERY OF DENTAL CHAIR AND OPERATOR/ASSISTING STOOLS. These must be cleaned with warm soap and water on a paper towel and then wiped off with a damp paper towel.

Remove heavy-duty gloves after washing with antibacterial soap. Spray outside of gloves with disinfectant, taking care not to contaminate bare hands (it is appropriate to touch inside of utility gloves only). Cover with paper towels until dry. Once gloves are dry, return to proper storage area in sterilization on the drying rack.

**PRIOR TO PLACING BARRIERS, PUT ON EXAM GLOVES, follow steps below:**

#### 5. Barriers

- a. The dental chair and top of the dental tray unit will be covered with the large chair cover.
- b. The following will be covered with a keyboard barrier:
  - Computer keyboard
  - Monitors (Front and back, if using an aerosol producing agent. If not, only cover the back monitor). Secure with tape on the back of the monitor to make viewing easier.
- c. The following will be covered with a blue barrier:
  - Light switch
  - Light handles (both right and left)
  - Operator chair height adjustment levers
  - Large touch pad on dental tray delivery unit
  - The assisting touch pad
  - Computer mouse
- d. The following will be covered with plastic wrap:
  - Delivery unit handles to include buttons
  - Front and back monitor handles
  - Pencils and pens utilized during treatment
- e. A plastic sleeve is to be placed on:
  - High speed evacuation holders
  - Saliva ejector holders
  - Air water syringe

Discard gloves worn for setting up the operatory.

## **DURING THE APPOINTMENT**

1. Escort patient to chair.
2. Review medical history and take vitals. Place patient napkin on patient.

### **\*DON PPE:**

**Prior to donning PPE, wash hands thoroughly for 20 seconds with soap and water or use an antimicrobial hand sanitizer.**

3. Don a disposable gown and hair covering-
  - The gown should fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
  - Fasten gown at back of neck and waist
  - Place hair covering over hair
4. Put on mask (or respirator)-
  - Secure ear loops around ears
  - Fit flexible band to bridge of nose
  - Fit mask snug to face and below chin
  - Fit-check respirator if using
5. Put on goggles or loupes followed by face shield-
  - Place over shield over face and eyes, adjusting to fit
6. **Wash and dry hands thoroughly** before donning treatment gloves.
7. Put on treatment gloves-
  - Extend to cover wrist of isolation gown
8. Before any clinical care begins, it is recommended to have the patient perform a pre-procedural rinse with Chlorhexidine Gluconate. Doing so will reduce the risk of contaminated aerosols and provide a cleaner oral environment. Patients who are pregnant, nursing or under age 18 should NOT use Chlorhexidine Gluconate.

Prefill the small plastic disposable cup in sink cabinets with 15ml (use cap to premeasure) of Chlorhexidine Gluconate. The patient should swish and expectorate into the cup after 30 seconds. You may also suction the rinse out of the patient's mouth.

**\*\*Rewash hands again during the donning of PPE steps if hands become**

contaminated.

## **AT APPOINTMENT COMPLETION**

**YOU MUST REMOVE ALL PPE** before leaving the dental operatory area!  
**Remember all PPE is contaminated so be careful about how you remove it.**  
If your hands become contaminated during PPE removal, immediately wash your hands or use an alcohol-based hand sanitizer.

**The proper steps for PPE removal are as follows:**

**Prior to removing PPE, wash hands thoroughly for 20 seconds with soap and water or use an antimicrobial hand sanitizer.**

1. Remove gloves-
  - Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
  - Hold removed glove in gloved hand
  - Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
  - Discard gloves in a waste container
2. Remove face shield and glasses-
  - Remove goggles or face shield from the back by lifting head band or ear pieces
  - If the shield is reusable, place on counter for disinfection later. Otherwise, discard shield.
3. Remove outer disposable gown-
  - Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
  - Pull gown away from neck and shoulders, touching inside of gown only
  - Turn gown inside out
  - Fold or roll into a bundle and discard in a waste container.
4. Remove mask-
  - Front of mask/respirator is contaminated — DO NOT TOUCH!
  - Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
  - Discard in a waste container
5. **WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE.**

\*\*Rewash hands again during the doffing of PPE steps if hands become

contaminated.

### **POST-APPOINTMENT (after patient escorted to waiting area)**

1. Put on heavy-duty clean-up gloves.
2. Don a mask, followed by safety goggles.
2. Carry instrument cassette into sterilization on a plastic tray, ensuring the instruments are secure inside the cassette and the cassette is properly fastened shut. Place instrument cassette into the Miele instrument washer.
3. Gather all disposable items from the operatory area:

#### **a. REGULAR TRASH:**

- All items that **ARE NOT** heavily soiled with blood:
  - Cups
  - Patient Napkin
  - Barriers
  - Tray covers

Remove the plastic chair cover and turn inside out; place all items not heavily soiled inside, including all barriers. Carry to sterilization and dispose of in a big trash container.

#### **b. BIOHAZARD TRASH: (Pull out cabinet on right of entry door into sterilization)**

- Place any items that **ARE** heavily soiled with blood in biohazard trash such as:
  - Blood soaked gauze

#### **c. SHARPS ITEMS: (Located in each hygiene operatory or on top of counter above Biohazard Trash cabinet in sterilization)**

- **Place items into the nearesy sharps container such ast**
  - Anesthetic carpules
  - Needles, irrigation and anesthetic

4. Clean all previously described areas in “preparing the operatory” with a surface disinfectant, ***and follow manufacturer’s directions for contact time. For example, after wiping surfaces with SaniCloth AF3 Germicidal wipes, they surface should remain wet for at least 3 minutes. LEAVE SURFACES WET.***

5. Clean goggles with soap and water then clean with disinfectant wipe. Clean loupes with a the lens cleaner packets.
6. Flush all water lines as described earlier in the manual and attach low and high volume evacuation lines to the automated vacuum line cleaning system. The system will run approximately 2 minutes and then shut off automatically.
7. Wash and wipe or spray utility gloves with disinfectant and place on the drying rack in sterilization.

**WASH HANDS THOROUGHLY BEFORE LEAVING CLINIC.**

# INFECTION CONTROL FOR AUXILIARY FUNCTIONS

## **Impressions**

1. After taking impressions, rinse impression with running water in sink.
2. Spray with disinfectant found in cabinet under the operatory sinks.
3. Place wet paper towel over impression and place in zip lock bag. Allow to stand at **least** 10 minutes before pouring.
4. **Rinse**, dry and pour.
5. Bowl and spatula used for impression should be wiped with disinfectant wipe. **NEVER PLACE THESE ITEMS IN THE SINK.**
6. Impression trays that were not used can be placed in the high level chemical disinfectant/sterilant solution in materials lab. After proper contact time the trays can be rinsed well, scrubbed if needed and sterilized.
7. Used impression trays can be placed in the high level chemical disinfectant/sterilant solution in materials lab. After proper contact time the trays can be rinsed well, scrubbed if needed and sterilized. If trays appear distorted in any way, please discard.
8. All metal impression trays will be cleaned and sterilized.

## **Sealants**

1. Remove all the items that needed from the sealant drawer in clinic behind Pod 2 desk; place items on a plastic try with a paper tray liner.
2. Retrieve curing light tip from instructor.
3. Place appropriate barrier on the curing light tip.
4. When finished, remove the barrier from the tip and then wipe down the tip and the ultraviolet shield with a disinfectant wipe.

## **Cleaning Removable Prosthetic Appliances**

1. Place patient's name on outside of zip lock bag.
2. At chairside, the student will obtain a denture brush and instruct the patient on the proper cleaning technique of the denture and/or partial.
3. Following education, the *Clinical Assistant* (wearing proper PPE to include masks, goggles and gloves) will place the appliance inside a Ziploc bag that contains enough tartar/stain remover cleaning solution to cover the appliance.
4. Seal bag and place bag inside another Ziploc bag for extra protection. Place bagged appliance into small ultrasonic cleaner filled with tap water for approximately 10 minutes.
5. Wearing proper PPE as described in Step 3, open bag, empty solution, and rinse well with water.
6. Using a small denture brush (located above sink), brush appliance under running water. Place appliance into interior Ziploc bag, with patient's denture brush, and reseal the bag.
7. Place bagged appliance on a tray and return to the student clinician treating the patient.

**NOTE:** *Denture cleaning tablets may be given to patients presenting to the clinic with appliances.*

### **Utilizing The Ultrasonic Scaler And Air Polishing Device**

1. Student **MUST** utilize the following barriers:

- a. Glasses/Loupes
- b. Face shield
- c. Hair covering
- d. Facemasks (**MUST** be changed if they become moist)

**NOTE:** *A moist face mask transmits microbes through the mask to the respiratory system of the operator. When utilizing the ultrasonic scaler and air polishing device, a water spray is transmitted and therefore the mask becomes moist in a shorter period of time.*

### **Handling of Sharps**

1. Needles utilized for injections and subgingival irrigation **MUST** be handled carefully to prevent injuries.
2. When recapping needles, lay the cap on the bracket tray and guide the needle into the cap. Once the needle is inside the cap, use fingers to place the cap on firmly. Or, a recapping device can be utilized.
3. When finished, keeping the cap on, remove the needle from the syringe and place the needle and the anesthetic cartridges in the **RED SHARPS DISPOSAL CONTAINER** located on the middle shelf of the rear delivery cabinet.
4. When **Sharps** containers are full, notify a clinical instructor. These items will be placed in the biohazard area of the Phlebotomy lab for medical waste pick-up.

**DO NOT BEND OR CUT NEEDLES!!**



## STERILIZATION PROCEDURES

Instruments introduced into the oral cavity which comes in contact with blood and saliva must be autoclaved. The autoclave which is steam vapor under pressure at 250 degrees F for 15-30 minutes provides an excellent method of sterilization. Moist heat kills bacteria by causing the denaturation and coagulation of the proteins within the microbial cell. The high temperature of the steam, not the pressure, kills the microorganisms.

Instruments will be cleaned utilizing the Miele instrument washer or the large ultrasonic cleaner. The large ultrasonic cleaner produces high-energy sound waves that creates billions of microscopic bubbles which implode (collapse) on the surface of items, creating the cleaning action. This results in a “scrubbing/cavitation” action that is safer and more efficient than the manual scrubbing method. Solutions **MUST** be changed daily. The ultrasonic cleaner **MUST** be covered with the lid during use to prevent the spread of aerosols. At the end of the day, the ultrasonic is drained, the inside of the cleaner is sprayed with a disinfectant, and the lid is left ajar to allow drying of the inside of the unit.

The Miele instrument washer is similar to a home dishwasher and utilizes special cleaning agents and hot water to break down blood and debris on the instruments. The washer goes through rinse, wash and dry cycles to thoroughly prepare instruments for the autoclave.

### **Instrument Preparation with the Large Ultrasonic Cleaner**

1. Instruments will remain in their cassettes to eliminate handling of sharp instruments.
2. As soon as the patient is dismissed, place the cassette in the ultrasonic.
3. When the ultrasonic is full (DO NOT OVERLOAD OR HAVE TRAYS TOUCHING BOTTOM), run for 10 minutes.
4. With utility gloves on, remove cassettes (REMEMBER THE SOLUTION IS CONTAMINATED), rinse under water and allow to dry.
5. Place into large sterilization pouch.
6. Write student number (“B12”) if not a clinic item, date and autoclave number on bagged cassettes and any bagged instruments.
7. Items that should NOT be placed in the ultrasonic cleaner:

- Handpieces of any type
- Ultrasonic scaler tips
- X-ray receptor rods and rings (rinse off and bag)

### **Instrument Preparation with the Miele Instrument Washer**

1. The following items SHOULD NOT be placed in the Miele:
  - Ultrasonic scaler tips
  - X-ray receptor rods and rings
  - Handpieces of any type
  - Instruments made from aluminum, chrome, chrome plated, nickel, carbon or carbide steel
  - Plastic instruments that cannot withstand high temperatures
  - Fiber-optics
  - Burs
  - Drill-bits
  - Grinders
  - Suction/syringe tips
2. Wipe off all instruments with gross debris, cements, composites, etc. directly after treatment.
3. Do not pre-soak, rinse or hand scrub instruments.
4. Place cassettes and/or loose instruments into the Miele.
5. The Miele serves as the “dirty storage area” and will clean and disinfect instruments that have been sitting for up to 6 hours. Do not allow dirty instruments to sit overnight.
6. The recommended cycle is **Disinfection Vario**.
7. Select the optional 10 minute drying cycle.
8. Press START.
9. Open door immediately after the cycle ends to release hot air and steam, and allow instruments to cool.
10. Proceed with bagging instruments for autoclave sterilization.

### **Operating the M-11 Autoclave**

1. Check the level of distilled H<sub>2</sub>O and fill if necessary. (DO NOT OVERFILL)
2. Open door and remove the empty instrument trays.
3. Place cassettes on large trays and bagged instruments on the small trays. Make sure to indicate the autoclave number on the bags.
4. Return to autoclave, do not overload.
5. Shut door. Select “**Pouches**” mode and push “Start”.
6. When light says “Dry Ready” or “Ready”, door may be opened.

### **Storing Sterile Items**

1. Remove instrument/materials from autoclave.
2. Place instrument cassettes in designated bins located inside the tall cabinets.
3. Place miscellaneous items such as XCP's or other items belonging to clinic on the clean side of sterilization inside white counter bins; to be stored later by the Clinical Assistant or faculty.

### **Shelf Life of Sterile Items**

1. Outdated packs or packs suspected of being contaminated must be re-wrapped and resterilized. Rotate packs so that older ones are used first.

### **Non-Autoclavable Instruments**

1. Instruments that cannot be autoclaved (pit and fissure sealant applicator handles, lip/cheek retractors, plastics, etc.) **MUST** undergo high-level disinfection.
2. An essential property of a high level disinfectant is effectiveness against vegetative bacteria, tubercle bacilli, bacterial spores and viruses. The effectiveness of a disinfectant is controlled by many factors. These factors include:
  - a. Number of organisms
  - b. Concentration and type of chemical

- c. Length of exposure to the disinfectant
  - d. Temperature
  - e. Type of material being disinfected
3. If the contact time and concentration are optimal, this type of solution may be used as a chemical sterilant. It must be emphasized that chemical agents may in one concentration kill bacteria and in another dilution, or under a different set of conditions, merely inhibit or perhaps even stimulate bacterial growth.
  4. Place items in basket and place in large ultrasonic cleaner for 10-12 minutes.
  5. Remove from ultrasonic and rinse thoroughly with water. DRY THOROUGHLY.
  6. Place in high level disinfectant solution/sterilant+ for specified time period.
  7. Remove items from disinfectant/sterilant, rinse with water, and dry thoroughly on a towel. These items must be stored in containers, drawers or cabinets to prevent contact with aerosols or dust.

### **Indications for Sterilization or Disinfection of Dental Instruments**

1. As with other medical and surgical instruments, dental instruments are classified into three categories – critical, semicritical, or noncritical – depending on their risk of transmitting infection and the need to sterilize them between uses. Each dental practice should classify all instruments as follows:
  - **Critical:** Surgical and other instruments used to *penetrate soft tissue or bone* are classified as critical and should be sterilized after each use. These devices include forceps, scalpels, bone chisels, scalers and burs.
  
  - **Semi-critical:** Instruments such as mirrors, amalgam condensers and x-ray rods and rings that *do not penetrate soft tissues or bone but contact oral tissues* are classified as semicritical. These devices should be sterilized after

each use. If, however, sterilization is not feasible because the instrument will be damaged by heat, the instrument should receive, at a minimum, high-level disinfection/sterilant for the designated period of time.

- **Noncritical:** Instruments or medical devices such as external components of x-ray heads that *come into contact only with intact skin* are classified as noncritical. Because these noncritical surfaces have a relatively low risk of transmitting infection, they may be reprocessed between patients with intermediate-level or low-level disinfection or be washed with detergent and water, depending on the nature of the surface, and the degree and nature of the contamination.

# Biological Monitoring for the M-11 Autoclaves

The goal of biological monitoring is to determine whether the sterilization process is achieving the desired result of killing all microorganisms and providing instruments safe for use on patients. The only way to test an autoclave to make sure that it is killing all forms of living microorganisms is to perform biological monitoring or spore testing. To do this, we must use a biological indicator that contains the spores *Geobacillus stearothermophilus* formerly known as *Bacillus stearothermophilus*. When these are run through the autoclave and subsequently incubated for the appropriate time, we can determine through color changes if the autoclave is functioning properly.

Please remember that the use of the indicator strips in each cassette only tests whether the autoclave has reached the appropriate temperature, not if the microorganisms have been killed.

The following steps should be performed on a weekly basis for all three (3) autoclaves:

1. The tests are run on Tuesdays and checked on Thursdays of EACH clinical week during the semester.
2. Obtain 5 Biological Indicator vials from the drawer.
3. On each vial, put the date and the autoclave number: 1, 2, 3, 4 and 5.
4. Put each vial in a separate small autoclave bag. Label the outside of the bag just like each vial, with numbers 1, 2, 3, 4 and 5.
5. Place each bag in the center of a full load and run the autoclave on a normal **“Pouches”** cycle.
6. Once the cycle has run, remove the bags with the vials. WAIT 5 MINUTES FOR THE VIALS TO COOL.
7. Open the bags and place the vials in the Biological Indicator *incubator*, located at the end of the “clean” counter in sterilization. The vials must be placed at an angle to crush the contents of the vial, and then placed upright in the holder. Remove an additional Biological Indicator from the drawer and label “C” for control. Crush the “C” vial as well and place upright in the incubator holder with the other 5 vials.
8. Record in the log book the date and your initials in the “In-Box”.
9. The vials **MUST** be incubated for at least 10 hours. At the beginning of the next clinic day on Thursday, check the vials for a color change. If the color remains purple, this means “no change” or no growth of any

microorganisms. If the color turns to yellow, this means a change has occurred and there has been growth of microorganisms, indicating sterilization FAILURE.

**\*\*Please note:** The 5 vials from the sterilizers should remain purple; the control vial should turn yellow to demonstrate that microorganisms grew because it was never processed through a sterilization cycle.

10. Record in the log book in the “Out Box” the date, your initials and place a (-) for no change and a (+) for a color change for each autoclave number.
11. Immediately notify a clinical instructor of any **positive findings**, which indicates sterilization failure.

### **Procedure for Positive Findings:**

1. The autoclave with the positive finding should immediately be taken out of service. It has been deemed unsafe since microorganisms ARE NOT being killed. Post a large note on the autoclave stating “**DO NOT USE**”.
2. Locate all instrument cassettes and bags with the positive autoclave number and re-run them through one of the other fully functioning autoclaves.
3. Another test cycle should be run following the above process to determine if the positive finding may have occurred due to overloading the autoclave or some other reason.
4. Incubate the vial for another 48 hours. If the test is negative, the autoclave is safe to use. If the test is positive, the autoclave will be removed from service and repaired.

# INFECTION CONTROL CHECK LIST

## **PRIOR TO SEATING PATIENT**

1. Put on heavy-duty clean-up gloves
2. Flush water lines for two minutes or longer
3. Wipe all surfaces with disinfectant wipe with the exception of upholstery on chairs
4. Remove gloves and wash hands. Place clean gloves on.
5. Begin unit set-up.
5. Place all appropriate barriers, including the saliva ejector and air/water syringe
6. Wash hands well
7. Carry a tray from sterilization containing instrument cassette. Do not bring a handpiece or ultrasonic insert if you are uncertain you will use that clinic session. Try to gather all items you anticipate needing for the appointment and place on the tray. This prevents getting up multiple times or having to un-glove to get into a cabinet.
9. Follow the “Don PPE” guidelines above.

## **ONCE PATIENT IS SEATED (after records review)**

1. Place patient napkin
2. Give patient protective eyewear
3. Follow the “Don PPE” guidelines above
  - o Gown
  - o Glasses/Faceshield/Hair Covering
  - o Mask
  - o Gloves
4. Position patient
5. Position light
6. Unwrap instruments and place syringe tip on holder
7. Instrumentation = Begin appointment procedures.

## **AFTER DISMISSAL OF PATIENT AND UNIT CLEAN-UP/ DISINFECTION**

1. Put on heavy-duty clean-up gloves, goggles and face mask
2. Place instrument cassette in instrument washer.
3. Remove and discard disposables. Place biohazard waste in biohazard pull out cabinet.
4. Wipe surfaces with disinfectant wipes and leave wet.
5. Wipe down handpiece and motor, lubricate, and bag for autoclaving.
6. Flush air/water and handpiece lines for two minutes.
7. Flush suction lines using the automated evacuation system.
8. Remove gloves, wash hands thoroughly and use hand sanitizer before leaving the clinic.