# Dental Assisting Guide on Infection control

# Table of Contents

# Introduction

After becoming a dental assistant, dental assistants from time to time need to go over material about their everyday task just to refresh their memory. Dental assistants sometimes forget how to properly carry out certain task or do not know how to complete a task and end up performing the task incorrectly. In addition, different tasks are always either being revised or added to the overall task of a dental assistant.

The purpose of this Manual is to provide a basic instruction guidebook on infection control steps and guidelines for dental assistants who have been working as a dental assistant for more than a year. As a result dental assistants can continue to perform infection control steps in the correct manner, limiting the amount of contamination to a minimum.

This manual provides information on infection control techniques and awareness, how to properly clean up the operatory and lastly how to properly sterilize instruments in the dental clinic.

Chapter 1 Infection Control

# Chapter 1: Infection Control

## Hazard Symbols:

**Ionizing Radiation** – any radiation, as a stream of alpha particles or x-rays, that produces ionization as it passes through a medium.


**Biohazard symbol** - indicates potentially infectious materials or sharp instruments that have been exposed to blood, saliva, or OPIM


**Electric Shock Hazard symbol-** indicates the potential for electric shock.

**Carcinogen hazard symbol –** indicates a cancer causing agent.


**Poison symbol –** indicates a chemical that is poisonous.


**Laser symbol-** indicates a laser that may be in use.

## The Goal of Infection Control

The goal of infection control is to eliminate exposure to blood borne pathogens and other potentially infectious materials (OPIMS) though to following steps:

1. **Prevention of contamination:** This is done by using all techniques that limit cross contamination. This includes using barrier techniques, disposables, or single-use materials.
2. **Sterilization:** by using the sterilization techniques all microbes are killed. Instruments that are used intraorally are sterilized using the preferred heat method.
3. **Maintain sterility:** Sterility is maintained after sterilization by protecting them from contamination. This is done by wrapping instruments prior to sterilization and keeping them that way until they are ready to be used.
4. **Disinfection:** Disinfection is used to reduce the microbial population in situations where sterilization is not possible.

## Barrier Techniques

These barrier techniques are used to protect you from coming into contact with pathogens. Barrier Techniques include:

- Appropriate clinical attire
- Gloves
- Masks
- Protective eyewear
- Rubber dam
- Other disposable barriers to prevent contamination

## Uniforms and Clinical Attire

Operatory attire can be spattered and contaminated with pathogenic microbes. Precautions must be made so that garments won't transmit diseases outside of the office.

- Protective clothing such as gowns, clinic jackets or lab coats must be worn with all patient contact.
- Protective clothing must have a high neck and long sleeves.
- Protective clothing must not be worn to or from work.
- Protective clothing must be changed when visibly soiled or torn and at the end of the day.

### Hair style

Hair should always be worn in a style that does not require touching during treatments. Hair styles should be off the face and controlled so that it won't fall down into the operating field.

### Other Attentions

Cosmetics are prohibited in the laboratory, operatory, and sterilization areas. This includes contact solutions and all types of makeup.

## Hand washing

1. Remove all jewelry. Jewelry can harbor microbes and may tear gloves.
2. Use a liquid soap that is dispensed with a foot activated dispenser.
3. Wash hands with a vigorous scrubbing motion using a liquid antimicrobial soap and cool water.
    a. Thoroughly rinse hands with cool water and thoroughly dry to prevent irritation. Dry hands with a single use towel.
4. For additional protection, us an antiseptic soap before putting on gloves.
5. Nails should be cut short and clean. Make sure to get soap solution underneath the nails as well.
6. Do not touch the faucet with your hands. After using a paper towel to dry hands and then arms, use the towel to turn off the faucets.
7. Put on gloves carefully.
    a. If using sterile surgical gloves, make sure not to touch the outside of glove

## Gloves

Gloves are important to wear so that they form a barrier between you the blood and OPIMS that you come in contact with.

### Latex Gloves

Also known as exam gloves, latex gloves are not sterile. They are used only for barrier protection. They must be worm with every patient during treatment. (Figure 1)

### Sterile Latex Gloves

Sterile Latex Gloves are worn for invasive procedures, such as a surgical procedure. (Figure 2)

### Vinyl Gloves

Vinyl gloves are worn for those patients who are allergic to latex materials. (Figure 3)

### Utility Gloves

Also known as heavy duty puncture resistant gloves, utility gloves are worn when cleaning up the operatory and when dealing with soiled instruments. (Figure 4)

### Plastic Gloves (food handlers gloves)

Plastic gloves are made up of a light weight plastic making them not acceptable for most dental procedures. However they can be used to be placed over contaminated gloves when inanimate objects must be touched, such as the dental chart. (Figure 5)


Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

## Guidelines for using gloves

1. Your hands must be washed thoroughly with an antimicrobial soap before putting on gloves and after removing them.
2. Every time you leave the dental chair remove your gloves and wash your hands. Or you can just use the overglove process.
3. Each pair of gloves is used for only one patient and then discarded before handling a new patient.
4. When gloves start to become damaged or even torn, remove them immediately, wash your hands thoroughly and reglove before going back to complete the dental procedure.
5. A pair of gloves can be used for a maximum of 60 minutes (1 hour). If the procedure is longer than an hour than reglove.
6. After completing a dental procedure, take off gloves carefully, and wash hands thoroughly with an antiseptic soap.

## Masks

Masks are always worn in order to protect the person wearing it from any infection caused by aerosols, droplets, or spatter.

Masks should be changed every hour due to the decrease efficiency when moisture is trapped.

### Rules for wearing mask

1. Wear a mask during every dental procedure.
2. Wear one mask for only one patient and discarded at the end of the patient visit.
3. The mask must be able to fit the contours of the face and cover up the nose.
4. The outside of the mask is contaminated during the procedure; therefore it should not be touched during treatment.
    a. Discard the mask immediately after removal.

## Protective Eyewear

Protective eyewear should always be worn during patient laboratory and sterilization procedures. This way eyes are protected from aerosols, droplets, spatter, and splash.

### Rules for Protective eyewear

1. Wear protective eyewear whenever there is a risk of eye contamination during treatment, in the laboratory or during sterilization procedures.
2. Glasses must be cleaned between uses.

### Face Shields

Face shields should be a chin-length plastic shield that protects the entire facial area from splash and spatter. When a face shield is worn, a face mask must also be worn.

### Protective eyewear for patients

Patients must also wear protective eyewear during procedures to also protect them from eye contamination. Tinted glasses are acceptable to protect eyes form the operating light.

## Rubber Dam

A rubber dam is a thin sheet of latex that is used to isolate a pacific tooth being treated during a procedure. Rubber dams help to maintain a clear operating field and reduce the amount of contamination generated.

Chapter 2 Operatory Cleanup

# Chapter 2: Operatory cleanup

## Steps in operatory cleanup

### While wearing Heavy-Duty Gloves, Mask, and Eye Protection

1. Discard all used disposables and place in a plastic lined container.
2. Place solid instruments into a holding solution and remove the container to the sterilization area.
3. Remove and discard protective barriers in operatory.
4. Complete procedure for operatory cleaning and disinfections.
5. Clean instruments and prepare them for sterilization.
6. After removing gloves, wash hands thoroughly.

### After Removing gloves

1. Place clean barriers in the operatory
2. Place the sterile instrument pack or tray for the next patient without opening.
3. Seat and prepare the next patient. Drape patient and ready patient's records for review.
4. Wash hands before globing to assist in patient care.

## Operatory surface disinfection

All surfaces touched during dental procedures in the operatory must be disinfected. There surfaces include: light handles, chair switches, air/water syringe, hand piece tubing, x-ray head, operatory surfaces, and drawer handles.

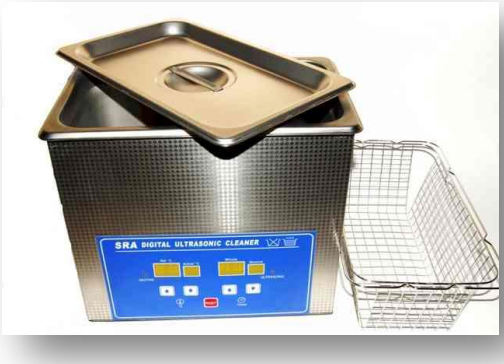
The operatory should be cleaned and disinfected using the Spray-Wipe-Spray technique.

1. **Spray**: to clean, apply the solution with a spray bottle, a wet sponge, or paper towel. Thoroughly scrub the surfaces to remove debris. Discard the sponge and paper towel so that contamination is not possible.
2. **Wipe**: wipe and clean the disinfected surfaces with a clean paper towel.
3. **Spray**: to disinfect, spray or sponge the surface again, leaving it moist.

## Using the Ultrasonic Cleaner

After cleaning up the dental operatory, used dental instruments should be placed into the ultrasonic cleaner to be mechanically scrubbed.

- While wearing heavy-duty globes, remove the basket of solid instruments from the holding solution within the cleaner.
- Rinse the instruments thoroughly with hot water
- Place the soiled instruments in the ultrasonic cleaner basket and lower in the cleaning solution.
- Cover the pan and set the timer for the time recommended by the manufacturer.



## Rinsing and drying instruments

- When the cleaning cycle is done in the ultrasonic cleaner, remove the basket with heavy-duty gloves.
- Rinse within the basket under cool water
- Empty the instruments onto a clean dry paper towel.
- Use another paper towel to pat the instruments dry.(discard both paper towels when done)
- Lastly wrap instruments for sterilization.

Chapter 3 Sterilization

# Chapter 3: Sterilization

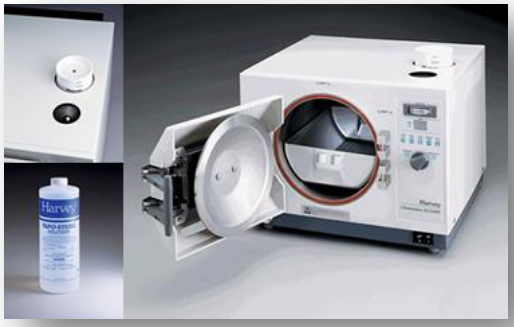
The most commonly used forms of sterilization used in the dental office includes: chemical vapor sterilization, autoclaving, and dry heat.

## Chemical Vapor Sterilization

This type of sterilization uses a chemical steam instead of water. Chemical Vapor Sterilization does not rust, dull or cored metal instruments, however it is not recommended for large loads of wrapped instruments due to inadequate ventilation.

## Autoclaving

Autoclaving sterilizes by use of steam under pressure. This is the most commonly used type of sterilization in the dental office. Autoclaving results are consistent and instruments can be wrapped prior to sterilization. A disadvantage is that the steam will rust, dull and corrode certain metals.



## Dry Heat Sterilization

Dry head sterilization is mainly for instruments that will rust in an autoclave. Advantages of dry heat sterilization are that instruments will not rust, however this process is very time consuming.

Verifying sterilization

## Process indicators

Heat sensitive tapes can be used to seal instrument packages, or process indicators can be placed within the package. These tapes change color when they are exposed to heat. The tape guaranty heat change but does not assure proper sterilization conditions

## Spore Test

Spore test also known as sporicidal test, are a biological verification of sterilization. Spore test should be conducted monthly in a small private practice, and weekly in a busy practice.

Commonly used spore test consists of three special strips of paper.

- Two are placed inside the instrument package in a test load. The third is kept as a control.
- An outside laboratory then analyses the strips and the sends by the results
- A negative report indicates that sterilization did occur.
- A positive report indicates that corrective procedures must immediately be taken

## Autoclave wrap

For the autoclave sterilization process, instruments can be either bagged or wrapped. For both methods, the material used must be porous so that steam will penetrate to the instruments.

Cloth, paper, or a special nylon film can be used for the autoclave procedure.

### Autoclave tape

A color indicator autoclave tape is used to that it changes color when exposed to steam. However it does that guaranty sterilization was successful.

You may write on the tape to label the contents of the package. Precautions must be taken to not puncture the wrapping with a pen or pencil.

## Steps for Bagging Instruments for sterilization

1. Clean, dry, and group instruments.
2. Label bag. A paper autoclave bag, nylon tubing, or a combination of both can be used.
3. Slip the instruments into the bag, being careful not to puncture the bag.
4. Close the bag with druggist's wrap. And seal with autoclave tape or heat seal.

## Loading the Autoclave

Trapped air in the autoclave can prevent proper sterilization. Therefore items should be arranged to facilitate the top to bottom flow of the steam.

It is important to never overload the autoclave. Packages should always be separated from each other with adequate space and contain proper wrapping materials to permit a free flow of steam around all packaged items.

## Operating the Autoclave

1. Read the manufacturer's directions and follow them exactly for the autoclave.
2. Check the water level, and make sure all valves are adjusted properly every time you run the autoclave.
3. Sufficient time should be allowed for the autoclave to warm up.
4. At about 15 pounds of pressure, 15 to 30 minutes of autoclaving is good enough to sterilize most items.
5. After the sterilization period is complete and the pressure returns back to zero once again, the autoclave door can be opened slightly.
    a. This allows for the steam to slowly evaporate.
6. After three to four minutes, the instruments will be ready to remove from the autoclave.
    a. Caution: the instruments may still me hot.

# Index