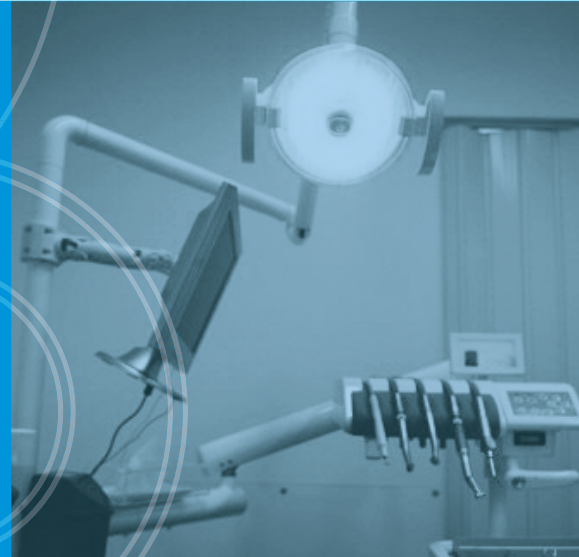


Health Regulation Department

Guidelines on Dental Infection Prevention and Safety



2012



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The Dental Center is grateful to the following individuals
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PREFACE

A number of diseases can be transmitted via routine dental care. Fortunately, infection control and safety procedures when adhered to, greatly reduce the risk to patients and dental workers.

Infection Control involves policies and procedures used to prevent or reduce the potential for disease transmission

The GOAL of good infection control in dentistry is to treat every patient as though he or she is infected with an incurable disease.

The method to implement this goal is to develop an infection control protocol for use in the Dental Operatory that is simple and effective for use with all patients.

If appropriate measures are taken, infection control will then occur as a routine component of Dental Practice

Infection Control attempts to break one or more links in the CHAIN OF INFECTION

The principles/ELEMENTS of Infection Control Which makes up the basis in breaking the chain of infection will guide you by keeping yourself and the patient safe.

- I. Take action to stay healthy
- II. Avoid Contacting blood and body fluids
- III. Limit the spread of contamination
- IV. Make objects safe for use.



Control that is linked together to form a chain is far more effective at preventing further infection.





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Chapter I

ELEMENTS OF A DENTAL PERSONNEL HEALTH PROGRAM

General recommendations

- Health program for dental center personnel includes policies procedures and guidelines for education and training; immunizations; exposure prevention and post exposure management; medical conditions, work-related illness and associated work restrictions; contact dermatitis and latex hypersensitivity and maintenance of records, data management and confidentiality.
- Establish referral arrangement with qualified healthcare professionals to ensure prompt and appropriate provision of preventive services, occupationally related medical services and post exposure management with medical follow-up. please refer to Policy and procedure on incident reporting, sentinel even and occupational exposure management

Education and training

- Provide dental healthcare personnel.(please refer to orientation checklist)
 - a. On initial employment.
 - b. When new task or procedures affect the employee's occupational exposure
 - c. Education and training regarding occupational exposure to potentially infectious agents and infection control procedures.
- Provide educational information appropriate in content and vocabulary to the educational level, literacy and language of dental healthcare personnel.

Immunization programs

- Provide comprehensive immunization policies of dental healthcare personnel, which include a list of all required and recommended immunizations.
- Refer dental healthcare personnel to a prearranged qualified healthcare professional or to their own healthcare professional to receive all appropriate immunizations based on latest recommendations as well as their medical history and risk for occupational exposure.

Exposure Prevention and Post exposure management

Comprehensive post exposure management and medical follow-up program.





- Includes policies and procedures for prompt reporting, evaluation counseling, treatment and medical follow-up of occupational exposures.
- Establish mechanisms for referral to a qualified healthcare professional for medical evaluation and follow-up.
- Conduct a baseline two step test (TST) for all dental healthcare personnel who might have contact with persons with suspected or confirmed infectious TB, regardless of the risk classification.

Medical Conditions, Work-Related Illness, and Work Restrictions

- Provide dental healthcare personnel comprehensive policies regarding work restriction and exclusion that includes a statement of authority defining who can implement the policy.
- Provide policy for work restriction and exclusion that encourage dental healthcare personnel to seek appropriate preventive and curative care and report their illnesses, medical conditions or treatments that can render them more susceptible to opportunistic infection or exposures.
- Provide procedures for evaluation, diagnosis, and management of dental healthcare personnel with suspected or known occupational contact dermatitis.
- Seek definitive diagnosis by a qualified healthcare professional for any dental healthcare personnel with suspected latex allergy to carefully determine its specific etiology and appropriate treatment as well as work restrictions and accommodations.

Records Maintenance Data Management and Confidentiality

- Establish and maintain confidential medical records (e.g., immunization records and documentation of tests received as a result of occupational exposure) for all dental healthcare personnel.
- Ensure that the practice complies with all applicable local laws regarding medical record keeping and confidentiality.





Chapter 2

PREVENTING TRANSMISSION OF BLOODBORNE PATHOGENS

Blood Borne pathogens are disease agents that exist in blood and certain body fluids of infected individuals. The most effective ways to prevent transmission of blood borne pathogens include

- **Vaccination**
- **Standard Precautions**
- **Strategies to prevent injuries with sharp instrument**

HBV Vaccination

- Offer HBV vaccination series to all dental healthcare personnel with potential occupational exposure to blood or other potentially infectious material.
- Always follow Public Health Service/CDC recommendations for hepatitis B vaccination, serologic testing, follow-up and booster dosing.
- Test dental healthcare personnel for anti-HBs 1-2 months after completion of the 3-dose vaccination series.
- Dental healthcare personnel should complete a second 3-dose vaccine series vaccine or to be evaluated to determine if they are HBsAg- positive; if no antibody response occurs to primary vaccine series.
- Retest for anti-HBs at the completion of the second vaccine series. If no response to the second 3-dose vaccine occurs, non-responders should be tested for HBsAg.
- Counsel non-responders to vaccination who are HBsAg-negative regarding their susceptibility to HBV infection and precautions to take.
- Provide employees appropriate education regarding the risks of HBV transmission and the availability of the vaccine. Employees who decline the vaccination should sign a declination form to be kept on file with the employer.
- The following table summarizes the vaccination series for occupational exposures.





| Vaccine | Dose Schedule | Indications | Major Precautions/Contraindications | Special Consideration |
|---------------------------------|---|--|---|--|
| HEPATITIS B recombinant vaccine | 3-dose schedule, IM in the deltoid 2 nd dose given 1 month after 1 st dose 3 rd dose given 4months | Workers at risk of exposure to blood and body fluids | History of anaphylactic reaction to common baker's yeast. Pregnancy is not a contraindication | No therapeutic or adverse effect on HBV-infected persons. Healthcare workers who have an ongoing contact with patients or blood should be tested 1-2 months after completing the vaccination series to determine serologic response if vaccination does not induce adequate antibodies a second vaccine series should be given |
| INFLUENZA vaccine (inactivated) | Annual single-dose vaccination, IM, with current vaccine | Workers who have contact with patients at high risk or working in chronic-care facilities; workers age 50 or over or who have high risk medical conditions | History of anaphylactic hypersensitivity to eggs or to other vaccine components | Recommended for women in the 2 nd or 3 rd trimester of pregnancy during influenza season and women in any stage of pregnancy who have chronic medical conditions that are associated with an increased risk of influenza |
| MEASLES live-virus vaccine | 1 dose SC; 2 nd dose at least 4weeks later. | Workers born during or after 1957 without documentation of (1)receipt of two doses of live vaccine on or after their first birthday, (2)physician-diagnosed measles or (3) laboratory evidence of immunity. Vaccine should also be considered for all workers, including those born before | Pregnancy; immunocompromised state (including HIV-infected persons with severe immunosuppression); history of anaphylactic reaction after receipt of neomycin. Or recent receipt of antibody-containing blood products. | MMR (measles, mumps, rubella) is the recommended vaccine if recipients are also likely to be susceptible to rubella or mumps; persons vaccinated between 1963 and 1967 with (1) a measles killed virus alone, (2) killed-virus vaccine followed by live virus, or (3) a vaccine of unknown type should be revaccinated with 2 |



| | | | | |
|-------------------------------------|---|--|---|---|
| | | 1957, who have no proof of immunity. | | doses of live-virus measles vaccine. |
| MUMPS live-virus vaccine | 1 dose SC; no booster | Workers believed to be susceptible can be vaccinated; adults born before 1957 can be considered immune. | Pregnancy; immunocompromised state; history of anaphylactic reaction after gelatin ingestion or receipt of neomycin. | MMR is the recommended vaccine |
| RUBELLA live-virus vaccine | 1dose SC; no booster | Male female workers who lack documentation of receipt of live vaccine on or after their first birthday or who lack laboratory evidence of immunity. Adults born before 1957 can be considered immune, except women of child bearing age. | Pregnancy; immunocompromised state; history of anaphylactic reaction after receipt of neomycin. | Women pregnant when vaccinated or who become pregnant within 4 weeks, of vaccination should be counseled on the theoretic risks to the fetus, however, the risk of rubella vaccine-associated malformations among these women is negligible. MMR is the recommended vaccine |
| VARICELLA-ZOSTER live-virus vaccine | Two 0.5mL doses SC; 4-8 wks if age 13 or older. | Workers without reliable history of varicella or laboratory evidence of varicella immunity. | Pregnancy; immunocompromised state; history of anaphylactic reaction after receipt of neomycin or gelatin; recent receipt of antibody-containing blood products; salicylate use should be avoided for 6weeks after vaccination. | Serologic testing before vaccination may be cost effective. |





Preventing Exposure to Blood and Other Infectious materials

General recommendations

- Use standard precautions [Occupational Safety and Health Administration (OSHA's blood borne pathogen standard retains the term universal precautions)] for all patient encounters.
- Consider sharp items (e.g., needles, scalers, burs, lab knives, and wires) that are contaminated with patient blood and saliva as potentially infective and establish engineering controls and work practices to prevent injuries.

Engineering and work practice controls

- Identify, evaluate and select devices with engineered safety features as they become available on the market (e.g., safer anesthetic syringes, blunt suture needle, retractable scalpel or needleless I.V systems).
- Place used disposable syringes and needles (without attempting to separate the two), scalpel blades and other sharp items in appropriate puncture- resistant containers located as close as feasible to the area in which the items are used.
- Do not recap used needle by using either hands or any other technique that involves directing the point of a needle toward any part of the body. Do not bend, break or remove needle before disposal.
- Use either a one handed scoop technique or a mechanical device designed for holding the needle cap when recapping needles (e.g., between multiple injections and before removing from a non disposable aspirating syringe).

Personal Protective Equipment (PPE)

Always wear adequate personal protective equipment whenever exposure to patient body fluids is expected (Standard Precautions)

Post exposure management and prophylaxis

- An exposure is a medical emergency. In the event of an exposure, Perform First Aid- Report injury to employer (Incidence Report)- Report to designated Healthcare professional for medical evaluation and follow-up care as indicated
- Follow CDC recommendations after percutaneous, mucous membrane, or nonintact skin exposure to blood or other potentially infectious material (OPIM).





Chapter 3

HAND HYGIENE

Hand hygiene is considered the single most important way to reduce the risk of disease transmission. To ensure you always use the proper technique, consider the type and length of procedures you will be performing, the degree of contamination you are likely to encounter, and the persistence of anti-microbial activity you will need.

(Refer to Policy and procedure on hand hygiene- PHCSS)

- Perform hand hygiene with both a non-antimicrobial or antimicrobial soap and water when hands are visibly dirty or contaminated with blood or other potentially infectious material. If hands are not visibly soiled, an alcohol-based hand rub can also be used. Follow the manufactures instructions.
- Indications for hand hygiene include: (Refer to Hand hygiene audit tool on opportunity based procedure and the "five moments for hand hygiene- WHO)
 - a. when hands are visibly soiled.
 - b. after barehanded touching of inanimate objects likely to be contaminated by blood, saliva or respiratory secretions.
 - c. before and after treating each patient.
 - d. immediately after removing gloves.

The WHO five moments for hand hygiene are as follows:

1. Before touching the patient
 2. before Clean/aseptic procedure
 3. After body fluid exposure risk
 4. After touching a patient
 5. After touching patient surroundings
- For oral surgical procedures, perform surgical hand antisepsis before donning sterile gloves. Follow the manufacturer's instructions either by using an anti microbial soap and water, followed by drying hands and application of an alcohol-based surgical hand scrub product with persistent activity.
 - Store liquid hand-care products in either disposable closed containers or closed containers that can be washed and dried before refilling. Do not add soap or lotion to (i.e. top off) a partially empty dispenser.
 - Avoid using multiple use, hanging towels in health-care settings. Disposable paper towels are more hygienic
 - The Hand-Hygiene Process should include the six critical steps which will ensure that all the areas of the hands are covered. Posters that demonstrate and remind the health care personnel and even the public for proper Hand hygiene





could be posted within and around the areas of an organization.

Hand hygiene is an essential infection control practice to protect patients, healthcare personnel, and visitors, and is required for both Standard and Expanded Precautions. Hand hygiene should be performed immediately after removing PPE, during PPE changes (with removal if necessary), and between patient contacts. Wash your hands thoroughly with soap and warm water or, if hands are not visibly soiled, use an alcohol-based hand rub.

Alcohol based hand rubs: these agents provide persistent antimicrobial activity on the skin and are particularly useful for a quick asepsis and it can be done on the go. Critically placed hand-rub dispensers will enable an easy access when a hand-wash is not feasible. But these agents are NOT effective cleaners and should NOT be used when hands are visibly soiled

Special Consideration for Hand Hygiene and Glove Use

- Use hand lotions to prevent skin dryness associated with hand washing
- Consider the compatibility of lotion and antiseptic products and the effect of petroleum or other oil emollients on the integrity of gloves during product selection and gloves use.
- Keep fingernails short with smooth, filed edges to allow thorough cleaning and prevent glove tears.
- Do not wear artificial finger nail or extenders when having direct contact with patients (especially those in high risk)
- Nail varnishes and paints are also not recommended
- Do not wear hand or nail jewelry if it makes donning gloves more difficult or compromise the fit or integrity of the gloves.





AWARNESS POSTERS on HAND HYGIENE

Rub "n" Go With clean hands!

- Decontaminate your hands with an alcohol hand rub
- Do it as you walk or talk
- No sink or paper towels
- Allow to Dry naturally



Two squirts of Hand rub Liquid onto Palm



Rub Hands together Palm to Palm



Rub fingertips of each hand in opposite palm



Rub in between and around fingers and cover palm over palm



HAND RUB

Perform the Conventional Hand Wash whenever hands are visibly Soiled!

Avoid unsafe spillage on the floor during Dispensing!

Dental Center-DHA
Infection Control Team- 09



THINK, ACT, LIVE!

Where did you miss through your hand-wash?



Remove jewellery and wet hands and wrists with warm water



1 or 2 Squirts of liquid or Foam Soap



STEP 1 Lather Soap and scrub hands, Palm to Palm



STEP 2 Scrub in Between & around fingers



STEP 3 Scrub Back of each hand with opposite palm



STEP 4 Scrub Finger tips of each hand



STEP 5 Rotational rubbing with clasped fingers



STEP 6 Scrub each thumb clasped in opposite hand



Rinse Thoroughly under running water



Pat hands dry with paper towel



Turn off water faucet using same towel

Hand Washing

Six Steps to Clean Hands, a better life!



Dental Center-
Infection Control Team -09
dentalic@dohms.gov.ae
Spreading Awareness!



Chapter 4

PPE (Personal Protective Equipment)

As a part of standard precautions, PPE should be worn by Dental Workers which is effective in preventing exposure to Blood and other body fluids by providing a physical barrier.





Personal Protective Equipment

All of the PPE prevent contact with the infectious agent, or body fluid that may contain infectious agents, by creating a barrier between the worker and the infectious material. **Gloves** protect the hands, **gowns or aprons** protect the skin and/or clothing, **masks and respirators** protect the mouth and nose, **goggles** protect the eyes, and **face shields** protect the entire face. The respirator has been designed to also protect the respiratory tract from airborne transmission of infectious agents.

When you are selecting PPE, consider three key points:



1. Anticipated exposure
2. Durability and appropriateness of PPE
3. Fit

First, anticipated exposure can include personal touch, splashes or sprays, or large volumes of blood or body fluids that could penetrate the clothing. Selection of personal protection, or a combination of PPE, also depends upon the patient's category of isolation precautions.

Second, and very much linked to the first, is the durability and appropriateness of the PPE for the task.

Third, you must be concerned with proper fit. PPE must fit the individual user.

Masks, Protective Eyewear and Face Shields

- Wear a surgical mask and eye protection with solid side shields or a face shield to protect mucous membranes of the eyes, nose and mouth during procedures likely to generate splashing or splattering of blood or other body fluids.
- Ensure that the mask when worn, fit well over the nose and mouth
- Change masks between patients or during treatment if the mask becomes wet and after every patient
- Clean the re-usable eye wears with soap and water, or if visibly soiled, clean and disinfect with an intermediate- level disinfectant. (e.g., clinician and patient protective eyewear or face shields) between patients.



Face mask with added eye shield





Protective Clothing

- Wear protective clothing (e.g., reusable or disposable gown, laboratory coat, or uniform) that covers personal clothing and skin (e.g., forearms) likely to be soiled with blood, saliva or other potentially infectious materials (OPIM)
- Change protective clothing if visibly soiled: change immediately or as soon as feasible or if penetrated with blood or other potentially infectious fluid.
- Remove barrier protection, including gloves, mask, eyewear, gown before departing the work area.

Gloves

Gloves are the most common type of PPE used in healthcare settings. There are several things to consider when selecting the right glove:

- Purpose: patient care, environmental services, other
- Glove material: vinyl, latex, nitrile, other
- Sterile or nonsterile
- One or two pairs
- Single-use or reusable

Most patient-care activities require the use of a single pair of nonsterile gloves made of latex, nitrile, or vinyl. Because of allergy concerns, some facilities have eliminated or limited latex products, including gloves, and now use gloves made of nitrile or other material. Vinyl gloves are frequently available and work well if there is limited patient contact.

Some gloves do not fit the hand snugly, especially around the wrist, and should not be used if extensive contact is likely. Gloves should fit comfortably, neither too loose nor too tight. They should not tear or damage easily. Gloves are sometimes worn for several hours, and they need to stand up to the task.

Sterile surgical gloves are worn by surgeons and other healthcare personnel who perform invasive patient procedures. Environmental services personnel often wear reusable heavy-duty gloves made of latex or nitrile to work with caustic disinfectants when cleaning environmental surfaces.

Recommendations

- Wear medical gloves when a potential exists for contacting blood saliva or potentially infectious material or mucous membrane.





- Wear a new pair of medical gloves for each patient, remove them promptly after use, and wash hands immediately to avoid transfer of microorganisms to other patients or environments.
- Remove gloves that are torn, cut or punctured as soon as feasible and wash hand before regloving.
- Never Wash, Disinfect or sterilize surgical gloves before use. Doing so may compromise the integrity of the glove material.
- Ensure that appropriate gloves in the correct size are readily accessible.
- Use puncture and chemical-resistant utility gloves when cleaning instrument and housekeeping tasks involving contact with blood or other potentially infectious material.
- Use two pairs of gloves is not recommended as it does not provide for any added benefit and the risk remains the same

Sterile Surgeons Gloves and Double Gloving During Oral Surgical Procedures

- Wear sterile surgical gloves when performing oral surgical procedures.
- Double gloving technique: no recommendation is offered regarding the effectiveness of wearing two pair of gloves to prevent disease transmission during oral surgical procedures. The majority of studies among healthcare personnel have demonstrated a lower frequency of inner glove perforation and visible blood on the dental healthcare workers hands when double gloves are worn. However, the effectiveness of wearing two pairs of gloves in preventing disease transmission has **not** been demonstrated.

WORK FROM CLEAN TO DIRTY

This is a basic principle of infection control. In this instance it refers to touching clean body sites or surfaces before you touch dirty or heavily contaminated areas. Limit opportunities for "touch contamination" protect yourself, others, and environmental surfaces.

"Dirty to Dirty-Clean to Clean",

That is, contaminated surfaces only touch other contaminated surfaces: your bare hand, which is clean, touches only clean areas e.g. inside the other glove.





Change Gloves as needed

If gloves become torn or heavily soiled and additional patient care tasks must be performed, change gloves before starting the next task. Always change gloves after each patient, discarding them in the nearest appropriate receptacle. Patient-care gloves should never be washed and used again.

Donning Techniques-Sterile Gloves

There are two techniques for donning sterile gloves, "Closed Donning" and "Open Donning". Regardless of which one you use, it is vital that all surface powder be removed from powdered gloves after donning. This can be done with either sterile water from a pour rinse, or a sterile wipe. Latest surgical gloves available in the market do not require pre-washing or removal of powder of any kind

Closed Donning

1. Peel open the outer pack from the corners. The inner pack is sterile. Gripping it through your gown, open it to display the gloves. (Image below)



2. With your gown covering your fingers, use your right hand to remove the left glove. Hold your left hand palm up, fingers straight. Lay the glove on your left wrist, and grip the cuff with your left thumb.





3. Place your right thumb inside the top cuff edge. Make a fist with your right hand and stretch the glove over your left fingertips.



4. Keeping your left fingers straight, pull down the glove.

5. Repeat the above procedure to don the other glove, that is: use your gloved left hand to lay the right glove on your right wrist. Slide your left thumb inside the top of the cuff, make a fist, and stretch the cuff over your right fingertips. Pull down the sleeve and glove together.





Open Donning

1. Pick up the cuff of the first glove with your left hand. Slide your right hand into the glove until you have a snug fit over the thumb joint and knuckles. Your bare left hand should only touch the folded cuff - the rest of the glove remains sterile.



2. Slide your right fingertips into the folded cuff of the left glove. Pull out the glove and fit your right hand into it.





3. Unfold the cuffs down over your gown sleeves. Make sure your gloved fingertips do not touch your bare forearms or wrists.



Glove Removal

The key to removing both sterile and non-sterile gloves is

1. Take hold of the first glove at the wrist.





2. Fold it over and peel it back, turning it inside out as it goes. Once the glove is off, hold it with your gloved hand.



3. To remove the other glove, place your bare fingers inside the cuff without touching the glove exterior. Peel the glove off from the inside, turning it inside out as it goes. Use it to envelope the other glove.





Gowns

Isolation gowns are generally the preferred PPE to protect clothing, but aprons occasionally are used where limited contamination is anticipated. Gowns should fully cover the torso, fit comfortably over the body, and have long sleeves that fit snugly at the wrist.

1. Isolation gowns are made either of cotton or a spun-synthetic material, which dictates whether they can be laundered and reused or must be discarded.
2. Clean gowns are generally used for isolation. Sterile gowns are only necessary for performing invasive procedures, such as inserting a central line. In this case, a sterile gown would serve for both patient and healthcare worker protection.

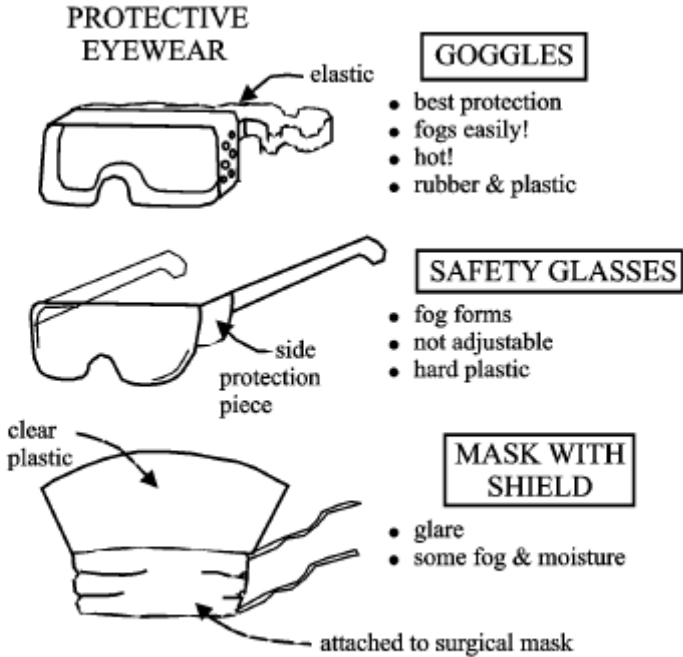
Face Protection

Several PPE types are available to protect all or parts of the face from contact with potentially infectious material.

Masks should fully cover the nose and mouth and prevent fluid penetration. Masks should fit snugly over the nose and mouth.

Goggles provide barrier protection for the eyes; personal prescription lenses do not provide optimal eye protection and should not be used as a substitute for goggles. Goggles should fit snugly over and around the eyes or prescription lenses

Face shield is used when skin protection is needed or desired in addition to mouth, nose, and eye protection, the face shield should cover the forehead, extend below the chin, and wrap around the side of the face.





Sequential Donning of PPE for a procedure

1. To don a gown, first select the appropriate type for the task and the right size for you. The gown should open in the back; secure the gown at the neck and waist. If the gown is too small to fully cover your torso, use two gowns. Put on the first gown with the opening in front and the second gown over the first with the opening in the back.
2. Some masks are fastened with ties, others with elastic. If the mask has ties, place the mask over your mouth, nose, and chin. Fit the flexible nosepiece to the bridge of your nose; tie the upper set at the back of your head and the lower set at the base of your neck (Figure 2).



Mask worn well

If a mask has elastic head bands, separate the two bands and hold the mask in one hand and the bands in the other. Place and hold the mask over your nose, mouth, and chin, then stretch the bands





over your head and secure them comfortably as shown; one band on the upper back of your head, the other below the ears at the base of the neck. Adjust the mask to fit. Remember, you don't want to be touching it during use, so take the few seconds needed to make sure it is secure on your head and fits snugly around your face so there are no gaps.

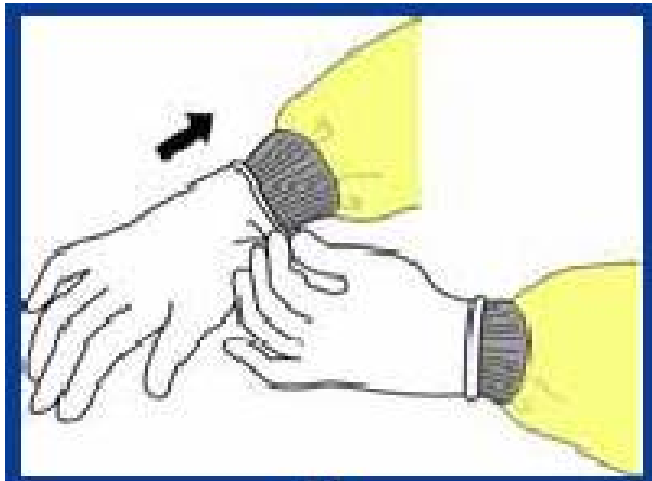
If eye protection is needed, either goggles or a face shield should be worn. Position either device over the face and/or eyes and secure to head using the attached earpieces or headband. Adjust to fit comfortably. Goggles should feel snug but not tight.



Position goggles over eyes and secure to the head using the earpieces or headband.

Position face shield over face and secure on brow with headband; adjust to fit comfortably.

The last item of PPE to be donned is a pair of gloves. Be sure to select the type of glove needed for the task in the size that best fits you. Insert each hand into the appropriate glove and adjust as needed for comfort and dexterity. If you are wearing an isolation gown, tuck the gown cuffs securely under each glove. This provides a continuous barrier protection for your skin.





Donning of Gloves

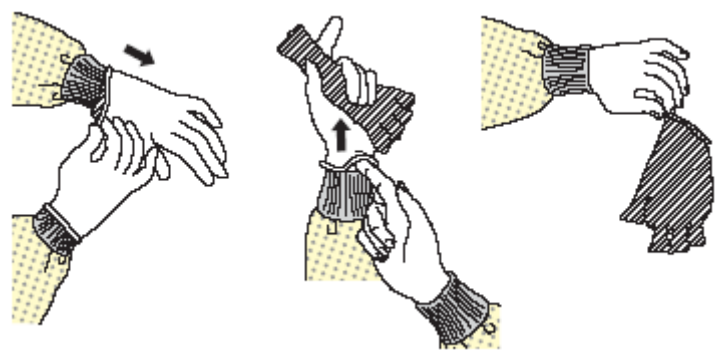
Adjusting gown cuffs securely under the gloves. In addition to wearing PPE, you should also use safe work practices. Avoid contaminating yourself by keeping your hands away from your face and not touching or adjusting PPE. Remove your gloves if they become torn and perform hand hygiene before putting on a new pair of gloves. Avoid spreading contamination by limiting surfaces and items touched with contaminated gloves.

Removing PPE

To remove PPE safely, you must first be able to identify what sites are considered "clean" and what are "contaminated." In general, the outside front and sleeves of the isolation gown and outside front of the goggles mask, face shield are considered "contaminated," regardless of whether there is visible soil. The outside of the gloves are contaminated. The areas that are considered "clean" are the parts that will be touched when removing PPE. These include the insides of the gloves; the gown ties and the inside and back of the gown; and the ties, elastics, or earpieces of the mask, goggles, and face shield. The sequence for removing PPE is intended to limit opportunities for self-contamination.

The gloves are considered the most contaminated pieces of PPE and are therefore removed first. The face shield or goggles are removed next

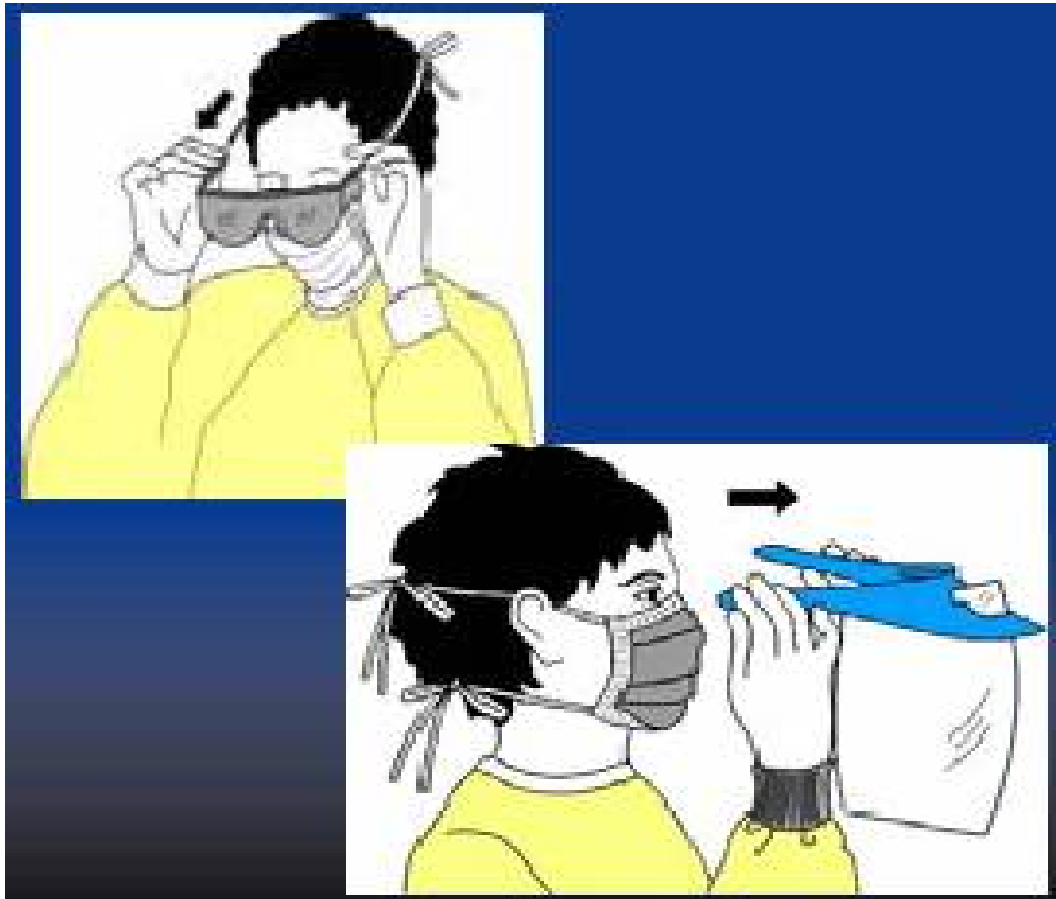
To remove gloves, using one gloved hand, grasp the outside of the opposite glove near the wrist. Pull and peel the glove away from the hand. The glove should now be turned inside-out, with the contaminated side now on the inside. Hold the removed glove in the opposite gloved hand. Slide one or two fingers of the ungloved hand under the wrist of the remaining glove. Peel glove off from the inside, creating a bag for both gloves. Discard in waste container.





Removing Gloves

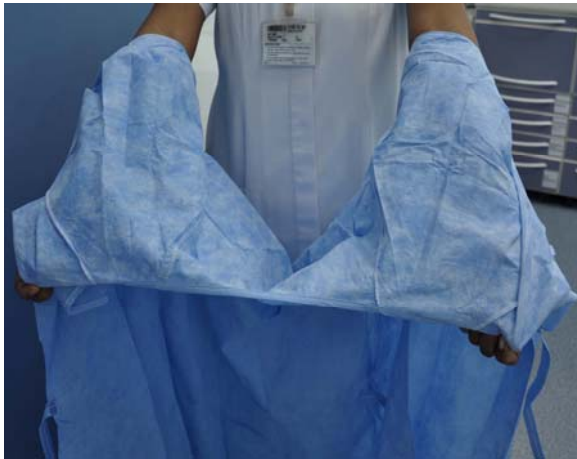
To remove goggles, using ungloved hands, grasp the “clean” ear- or headpieces and lift away from face. If goggle or face shield are reusable, place them in a designated receptacle for reprocessing. Otherwise, discard them in the waste receptacle.



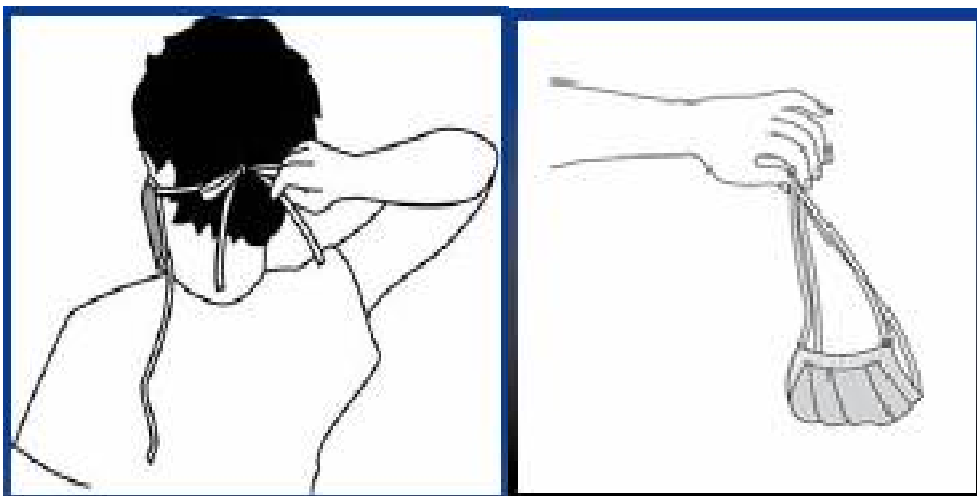
Removing Eye/face wear

To remove your gown, unfasten the gown ties with the ungloved hands. Slip your hands underneath the gown at the neck and shoulder, and peel it away from the shoulders. Slip the fingers of one hand under the cuff of the opposite arm. Pull the hand into the sleeve, grasping the gown from inside. Reach across your body and push the sleeve off the opposite arm. Fold the gown toward the inside and roll into a bundle. (Only the “clean” part of the gown should be visible.) Discard into a waste or linen container, as appropriate.





The front of the mask is considered contaminated and should not be touched. Remove your mask by handling only the ties or elastic bands, starting with the bottom following with the top tie or band. Lift the mask or respirator away from the face and discard it into the designated waste receptacle.



Removing the Mask





Healthcare personnel are required to wear PPE beyond that recommended for Standard Precautions. The three **Expanded Precautions** categories (formerly called transmission-based precautions) where this applies are:

- Contact Precautions
- Droplet Precautions
- Airborne Infection Isolation

Contact Precautions requires gloves and gown for contact with the patient and/or the environment of care; in some instances, use of this PPE is recommended when entering the patient's environment. **Droplet Precautions** requires the use of a surgical mask within three feet of the patient. **Airborne Infection Isolation** requires that a particulate respirator be worn and use of a negative-pressure isolation room.





Chapter 5

CONTACT DERMATITIS LATEX HYPERSENSITIVITY

While the benefits of gloving and hand washing cannot be understated, some adverse skin conditions can develop as a result of frequent and repeated hand-washing, exposure to chemicals and glove use.

- **Irritant Contact dermatitis (Physical irritation and non allergic)**
- **Allergic Contact dermatitis (Allergic reactions type IV delayed hypersensitivity to chemicals and rubber manufacturing chemicals)**
- **Latex hypersensitivity (Allergic reaction to the proteins in natural rubber latex)**
- Educate dental healthcare personnel regarding the signs, symptoms and diagnoses of skin reaction associated with frequent hand hygiene and glove use.
- Screen all patients for latex allergy (e.g., take medical history).
- Management of patient allergy to latex: provide for a latex safe environment



Dermatitis





Chapter 6

Sterilization and Disinfection of Patient Care Items



Patient- Care- Items that is, Dental Instruments, Devices and Equipments- are categorized based on their risk of transmitting disease:

- **Critical Items – Penetrate Soft tissue or bone- Highest Risk of Transmitting Infection**
- **Semi Critical Items- Touch only mucous membrane- Lower Risk of Transmission than Critical items**
- **Non-Critical Items- Only contact Intact Skin- lowest risk of transmission**

This is also known as the SPAULDING Classification.

Instrument Processing require a number of steps to assure that contaminated patient –care-items are rendered safe for reuse. Maximum use of single-use disposable patient care items is always recommended.

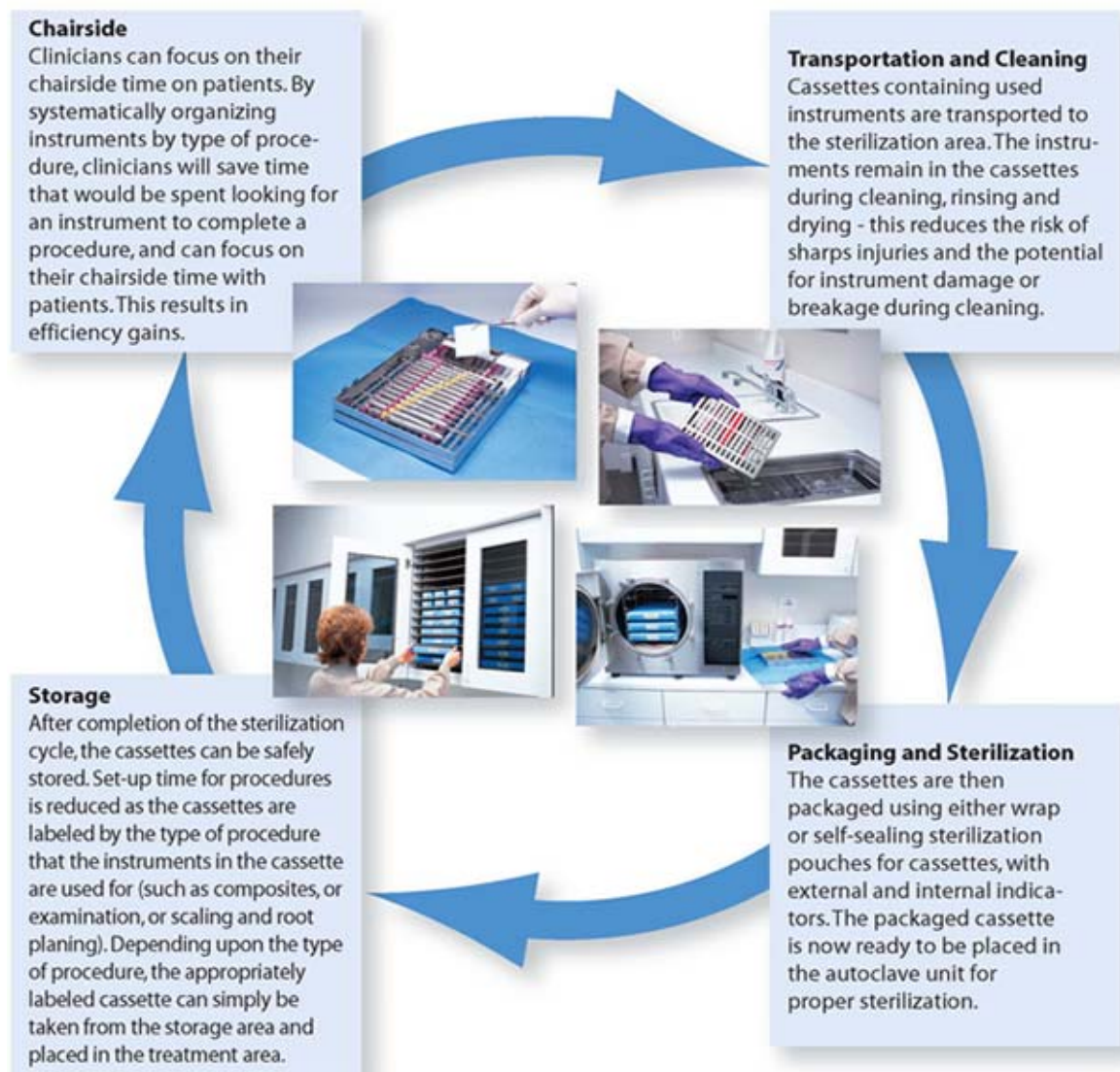
Recommendations

- Allow packages to dry in the sterilizer before they are handled to avoid contamination. Each load or instrument pack must be processed through the “full-cycle” which will also include the drying process. Do not attempt to remove instruments prior to completion
- Reprocess heat-sensitive critical and semi critical instruments by using high level disinfectant and follow manufactures instruction for correct use.
- Single use disposable instruments are acceptable and highly recommended alternative if they are used only once and disposed of correctly.





- Do not use high level disinfectants for environmental surface disinfection or as holding solution.
- Ensure that noncritical patient- care items are barrier protected or clean, or if visibly soiled, cleaned and disinfected after each use with an EPA {Environmental Protection Agency} registered disinfectant. If visibly contaminated with blood use an EPA registered hospital disinfectant with a tuberculocidal claim (i.e., intermediate level).
- Inform dental health care personnel of all OSHA guidelines for exposure to chemical agents used for disinfection and sterilization, using this report identifies areas and tasks that have potential for exposure.
- Do not disinfect when you can sterilize



Instrument Processing Area

- Instrument processing shouldn't take place in the operatory. A Designated central processing area in the office should be





used to control and ensure safety. Divide the instrument processing area physically or, at a minimum, spatially, into distinct area for:

- a. receiving, cleaning and decontamination.
- b. preparation and packaging.
- c. sterilization.
- d. storage.

Do not store instruments in an area where contaminated instruments are held or cleaned.

- Train dental healthcare personal to employ work practices that prevent contamination of clean area and maintain a uni-directional flow of "dirty-to-clean"

Handling and transporting contaminated patient care items:

- Use appropriate covered puncture resistant container to transport instruments from clinical area to processing area.
- Use heavy duty utility gloves in addition to other appropriate PPE whilst handling contaminated patient care items
- If instruments cannot be cleaned soon after use, place them in a holding solution of detergent or an enzymatic cleaning solution in order to prevent drying of the debris



Transport trolley with instrument boxes Puncture resistant instrument container

Receiving, Cleaning and Decontamination-Work Area

- Clean all visible blood and other contamination from dental instruments and devices before sterilization or disinfection procedures.
- Use automated cleaning equipment (e.g., ultrasonic cleaner or washer-disinfector) to remove debris to improve cleaning





effectiveness and decrease exposure to potentially infectious material.

- Use work-practice controls that minimize contact with sharp instruments if manual cleaning is necessary (e.g., long-handled brush and performing the cleaning in a deep sink)
- Wear puncture- and chemical-resistant/heavy duty utility gloves for instrument cleaning and decontamination procedures.
- Wear appropriate PPE (e.g., mask, protective eyewear, and gown).
- Prior to preparation for packaging instruments for sterilization, the instruments should be inspected for remaining debris and damages and then dried thoroughly before transfer.



Washer disinfectors



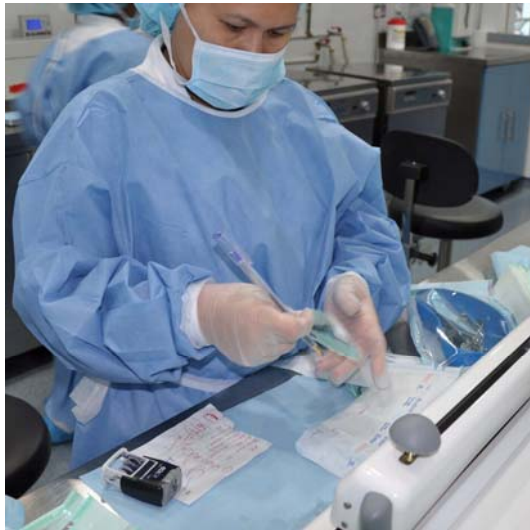
Ultra Sonic Instrument Cleaner





Preparation and Packaging

- Before sterilization of critical and semi critical instruments inspect for cleanliness, then wrap or place them in containers designed to maintain sterility during storage (e.g., cassettes and organizing trays).
- Hinged instruments such as hemostats, extraction forceps and scissors should be processed open and unlocked to permit the sterilizing agent to contact all surfaces.
- Use an internal chemical indicator in each package. If the internal indicator cannot be seen from outside the package also use an external indicator.
- Use a container system or wrapping material compatible with the type of sterilization process used.
- Label each instrument pack with the date and the name of the personnel responsible for cleaning, and packing of the instruments.



Label the pack with the date, cycle load and initial of the sterilizer attendant.

Sterilizers

There are three types of sterilization methods:

- In dental Settings, heat Tolerant instruments are sterilized by steam under pressure (autoclaves), dry heat, or unsaturated chemical vapor.
- Always follow manufacturer's instructions for proper use.
- Use only medical devices for the purpose of sterilization of contaminated patient care items.





Heat Sterilization Methods

| Method | Temperature/ Pressure | Exposure Time (a) | Advantages | Precautions |
|---------------------------------------|--|---|--|--|
| Steam Autoclave (b) | 121C (250F) 115 kPa 134C (273F) 216 kPa | 13-30 min 3.5-12 min | - Good penetration - Non-toxic - Time efficient | - Non stainless steel items corrode - May damage rubber & plastics - Do not use closed containers - Unwrapped items quickly contaminated after cycle |
| Dry heat (c) (oven-type) | 160C (320F) | 60-120 min | - No corrosion - Non-toxic - Items are dry after cycle - Can use closed container (d) | - Long cycle time - May damage rubber & plastics - Door can be opened during cycle - Unwrapped items quickly contaminated after cycle |
| Dry heat (c) (rapid heat transfer) | 191C (375F) | - 12 min: wrapped - 6 min: unwrapped | - No corrosion - Non-toxic - Time efficient - Items dry quickly | - May damage rubber & plastics - Door can be opened during cycle - Unwrapped items quickly contaminated after cycle |
| Unsaturated chemical vapor (b) | 134C (273F) 216 kPa | 20 min | - No corrosion - Time efficient - Items dry quickly | - May damage rubber & plastics - Do not use closed containers - Must use special solution - Uses hazardous chemical - Unwrapped items quickly contaminated after cycle |

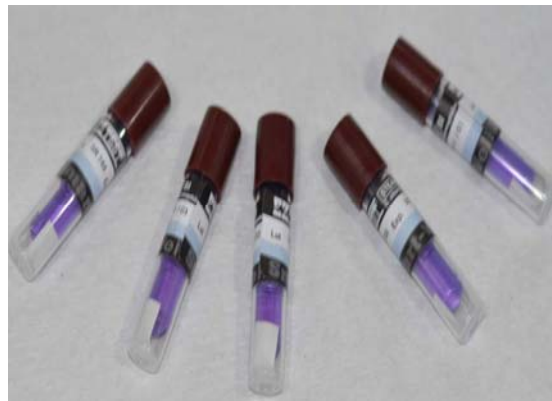




Sterilization Monitoring

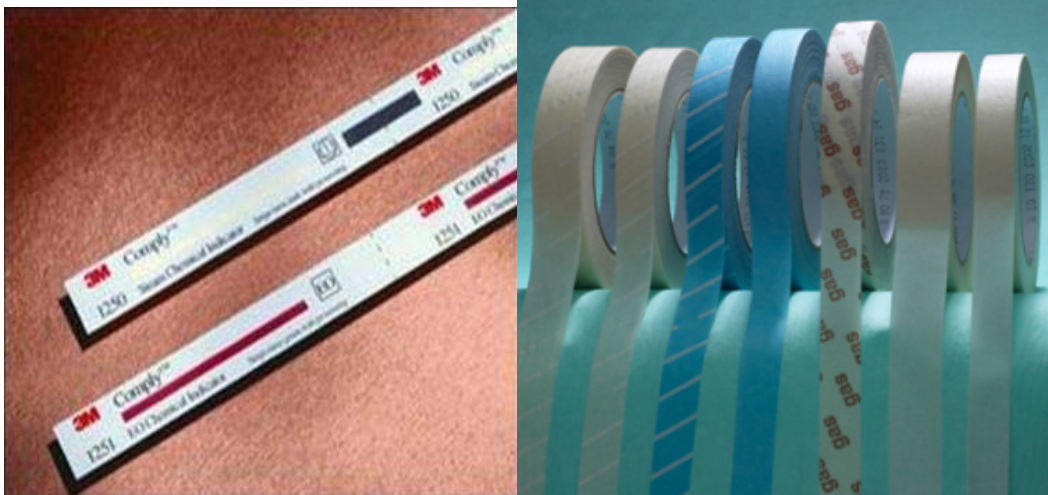
- Use mechanical, chemical, and biological monitors according to the manufacturer's instructions to ensure the effectiveness of the sterilization process.
- Monitor each load with mechanical (e.g., time, temperature and pressure) and chemical indicators.
- Place a multi-parameter chemical indicator on the inside of each package. If the internal indicator is not visible from the outside, also place an external chemical indicator ON the package
- Place items and packages correctly and loosely into the sterilizer so as not to impede penetration of the sterilant.
- Do not use instrument packs if mechanical and chemical indicators indicate inadequate processing.
- Monitor sterilizers at least weekly using a biological indicator.
- Use a biological indicator for every sterilizer load that contains an implantable device or instruments used for an invasive procedure.
- Maintain Sterilization records (chemical, mechanical and biological) in compliance with local regulations

(Refer to the OSAP and departmental policies for the latest guidelines and protocol for a sterilization failure)



Biological indicators and incubator





Chemical Indicators

Storage Area for Sterilized Item and Clean Dental Supplies

- Packaged items should always be dried and cooled before storage to maintain integrity of the pack and prevent condensation.
- Store sterile items and dental supplies in covered or closed cabinets if possible. (Not under areas such as sinks)
- Maintain stock rotation according to the principle "first-in first out" so that older items are used first.
- The shelf life of sterilized instruments is the period during which an item is considered safe for use. It depends on the quality of the packaging material, storage conditions, and conditions during transport and the amount of handling an item has received.
- Implement practices on the basis of date or event related shelf life for storage, wrapped sterilized instruments and devices.
- Even for event related packaging, at a minimum, place the date of sterilization and if multiple sterilizers are used in the facility, the sterilizer used, on the outside of the packaging material to facilitate the retrieval of processed items in event of sterilization failure.
- Sterile supplies should be transported in a covered or enclosed cart as and when required to the clinical areas. The cart should be clean, and dried prior to use and frequently
- Examine wrapped packages of sterilized instruments before opening them to ensure the barrier wrap has not been compromised during storage.
- Re-clean, repack, and sterilize an instrument package that has been compromised.





Sterilization of Unwrapped Instruments (flash sterilization)
The flash cycle on a steam sterilizer processes items to be used immediately.

- Flash sterilization is not intended for routine instrument processing
- Clean and dry instruments before the unwrapped sterilization cycle.
- Use mechanical and chemical indicators for each unwrapped sterilization cycle (i.e., place an internal chemical indicator among the instruments or items to be sterilized).
- Allow unwrapped instruments to dry and cool in the sterilizer before they are handled to avoid contamination and thermal injury.
- Semi-critical instruments that will be use immediately or within a short time can be sterilized unwrapped on a tray or in a container system, provided that the instruments are handled aseptically during removal from the sterilizer and transport to the point of use.
- Critical instruments intended for immediate reuse can be sterilized unwrapped if the instruments are maintained sterile during removal from the sterilizer to the point of use.
- Do not sterilize implantable devices unwrapped.
- Do not store instruments un-wrapped.
- Unwrapped instruments have no shelf-life





Chapter 7

Environmental Infection Control

Environmental Surfaces are surfaces or equipments that does not contact patient directly which can be become contaminated during patient care. Certain surfaces especially once touched frequently for example: light handles, drawer knobs, unit switches can act a s a reservoir for microbial contamination.

General Recommendations

- Follow the manufacturers' instructions or correct use of cleaning and EPA-registered hospital disinfecting products.
- Do not use high level disinfectants for disinfection of environmental surfaces.
- Use PPE as appropriate when cleaning and disinfecting environmental surfaces.

Clinical Contact Surfaces

- Use surface barriers to protect clinical contact surfaces particularly those that are difficult to clean and change surface barriers between patients.
- Clean and disinfect clinical contact surfaces that are not barrier-protected, by using EPA-registered hospital disinfectant with a low to intermediate level activity after each patient. Use an intermediate level disinfectant if visibly contaminated with blood.

Housekeeping Surfaces

- Clean housekeeping surfaces with a detergent and water or an EPA-registered hospital disinfectant /detergent on a routine basis depending on the nature of the surface and type and degree of contamination and as appropriate, based on the location in the facility, and when visibly soiled.
- Clean mops and cloths after use and allow drying before reuse or using single use disposable mop heads or cloths.
- Prepare fresh cleaning or EPA-registered disinfectant solutions daily and as instructed by the manufacturer.
- Clean walls blinds and window curtains in patients care areas when they are visibly dusty or soiled.

Spills of Blood and Body Substances

Refer: Policy and Procedure on Spills

- Don gloves and other appropriate PPE. Visible organic material should be removed with absorbent material (Disposable paper towels) and discarded in a leak proof appropriately labeled container (bio-hazard)





- Non-porous surfaces should be cleaned and then dis-infected with either an EPA registered hospital disinfectant.

Carpet and Cloth Furnishings

Avoid using carpeting and cloth upholstered furnishings in dental operatories, laboratories and instrument processing areas.





Chapter 8

Medical Waste Management

Medical waste can be defined as any solid waste generated in a health care facility. Regulations regarding waste management will vary from region to region and adherence to local directives is a must

- Ensure that dental healthcare personnel who handle and dispose of regulated medical waste are trained in appropriate handling and disposal methods and informed of possible health and safety hazards.
- Management of regulated medical waste in dental health care facilities.

Installation of Sharp Disposal Container

- a. use a color coded or labeled container that prevents leakage to contain non sharp regulated medical waste.
- b. place sharp items in an appropriate sharp container. Close container immediately to prevent spillage or protrusion of contents during handling storage, transport, and shipping.
- c. Sharp Containers must have a temporary closure and permanent lock.
- d. must have a visible fill line
- e. placed at a height that is slightly below eye level (0 – 15 degrees) for users (typically 52-56 inches of the floor when wall mounted and 38-42 inches for a seated work station)
- f. Installation heights vary depending on whether the installation is designed to be a standing workstation or a seated workstation. Maximum and minimum heights for both design situations can be calculated by establishing the eye-level for each design, the maximum thumb tip reach (MTTR) – of the target adult female population and the drop in inches based on an angle of 15 degrees. Basic formula: fixture height= (eye level height) – (tangent 15 degrees) (MTTR)



SHARPS DISPOSAL CONTAINER



Special Considerations

- Extracted teeth not containing amalgam must be considered as bio-hazard waste and disposed off appropriately. Recommendations are that the teeth be cleaned free of visible blood and gross debris. Place the teeth in a well-constructed container with a secure lid. Label the container as bio-hazard. Before being used for educational purposes must be heat-sterilized.
- Extracted teeth containing amalgam should NOT be placed in a medical waste container intended for incineration for final disposal. (Mercury is released into the environment on extremely high temperatures). Recommendations state that they be stored in 10% formalin for 14 days.
- Extracted teeth for EDUCATIONAL PURPOSES should be heat sterilized to allow for safe handling. Store the tooth hydrated with water or saline
- For disposal of chemical solutions such as expired fixer solutions and other disinfectants, check with your local municipal regulations.
- Lead foil from dental film packets are to be deposited in containers labeled "Recyclable Lead Foil Only" which are located at each film processing station. No other waste is to be placed in these containers. (Local Municipal regulations apply)



Lead X-ray foils are stored and disposed separately





Chapter 9

Dental Unit Waterlines, Bio-film and Water Quality

In most Dental practice settings water used for dental treatment comes from the municipal water supply directly into the dental UNIT thin plastic, tubing carries water from the dental unit to the high-speed hand-piece, air water syringe, ultrasonic scaler, and subsequently to the operating field in the patient mouth. The inside surface of this dental water lines can become colonized with variety of microorganisms, including bacteria fungi and protozoa that live inside a slim layer that protects and feeds them. This phenomenon, called a bio-film allows micro-organisms to survive in the dental water lines, and raises concerns about possible health effect of exposure to dental unit water.

Recommendations

- Use water that meets standards for drinking water.
- Consult with the dental unit manufacturer for appropriate methods and equipment to maintain the recommended quality of dental water.
- Discharge water and air for a minimum of 20-30 seconds after each patient from any device connected to the dental water system that enters the patient's mouth (e.g., hand pieces, ultrasonic scalers, air/water syringes).

Maintaining and monitoring water quality

- Consult the Dental Manufacturing unit or other agencies for appropriate methods and equipment to maintain the recommended quality of Dental Water (< 200 Colony Forming Units)
- Do not use Sodium hypochlorite to clean dental water lines.
- Monitor dental water quality using commercial self contained-test kits or commercial water testing laboratories.
- If bacterial counts exceed 200 CFU/ml, re-evaluate the technique, re-treat the dental unit water, and retest the dental unit immediately before the next scheduled treatment interval. Continue to monitor until acceptable water quality is achieved.

Sterile Surgical irrigations

- To help guard against post-surgical infections use only sterile water or sterile saline as a coolant/irrigate for surgical procedures that present an increased opportunity for microorganisms to gain entry into the bloodstream, bone or tissue under the skin.





Dental Water-lines



Figure 1



Figure 2



Figure 3

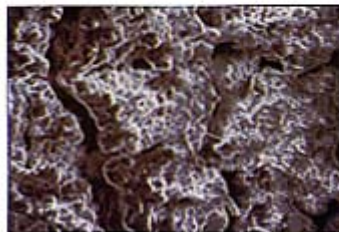


Figure 4

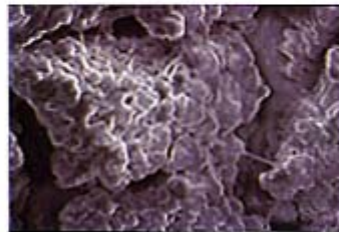


Figure 5



Figure 6

Formation of bio-film in a unit water line





Chapter 10

Dental Hand pieces and other Devices Attached to Air and Waterlines

Because they retract and retain patients materials, dental hand pieces and other devices used in the mouth and connected to the dental units air lines and water lines must be heat sterilize between patients. Components of these devices are prone to contamination from contact with gloves and droplet spatter should be protected with a new surface barrier for each patient and cleaned and disinfected when visibly contaminated.

- Clean and heat-sterilize hand pieces and other intraoral instruments that can be removed from the air and waterlines of dental units between patients.
- Follow the manufacturer's instructions for cleaning, lubrication and sterilization of hand pieces and other intraoral instruments that can be removed from the air and waterlines of dental units.
- Do not advise patients to close their lips tightly around the tip of the saliva ejector to evacuate oral fluids.
- Before removing the hand piece from the hose after treatment, with the bur still in the chuck, briefly run the water/air system to flush water lines and airlines.
- Remove the bur from the hand piece, wipe visible debris from the outer surfaces of the hand piece, and disconnect the hand piece from the hose.
- If the hand piece requires lubrication before heat-processing, use a hand piece cleaner recommended by the manufacturer that will both remove the initial debris and lubricate the hand piece.
 - If the hand piece does not require lubrication before processing, use a cleaner that does not contain a lubricant.
 - Follow the manufacturer's instructions for each type of hand piece used.
 - Do not over lubricate hand pieces.
- Reattach the hand piece o a hose and operate the drive air system to blow excess lubricant from the rotating parts. Failure to perform this step before heat sterilization can lead to excess lubricant accumulation in the working assembly and gumming in the rotating assemblies during the heat cycle.





Chapter 11

Dental Radiology

BEFORE TAKING XRAYS

- Use heat-tolerant or disposable intraoral devices whenever possible (e.g., film-holding, positioning devices). Clean and heat-sterilize heat tolerant devices between patient.
- High level disinfection of semi critical heat- sensitive devices, according to manufacturer's instructions.
- Protect radiographic equipment (such as x-ray tubehead and control panel) with clean surface barriers.
- Prepare all necessary supplies, equipment and instruments prior to patient seating. Unit-dose all necessary supplies such as gloves paper towels, paper cups, film mount or paper envelop as per requirement before seating the patient.
- Have the patient to rinse with a pre-procedural mouth rinse.
- Provide the patient with a lead apron with thyroid collar to protect against any scatter radiation.
- Wash hands, dry thoroughly and put on exam gloves.

WHILE TAKING XRAYS

- Wear gloves when taking radiographs and handling contaminated film packets. Use other PPE (e.g., protective eyewear, mask, and gown) as appropriate if splattering of blood or other body fluids is likely.
- Touch as few surfaces as possible.
- Stay behind the protective lead partition until after the exposure.
- Following exposure of the radiograph, with gloves still in place dry the film with disposable gauze or a paper towel to remove blood or excess saliva.
- Drop the film packet into a container (such as paper or plastic cup), be careful not to contaminate the outside of the container.

AFTER TAKING THE XRAY

- Place reusable film holding devices in the designated area.
- If film barrier pouches have been used, carefully peel back the barrier and allow each film packet to fall from its pouch into a clean disposable container. Transport and handle radiographs in an aseptic manner to prevent contamination of developing equipment.
- Discard all contaminated disposable items.





- Carefully remove contaminated barriers from covered surfaces.
- Remove gloves and wash hands.
- Remove lead apron and dismiss the patient.
- Disinfect all uncovered surfaces that were contaminated. If barriers are not used, x-ray equipment that has come into contact with gloved hands or contaminated film packets must be cleaned and then disinfected after each patient. Use a low- to intermediate-level disinfectant to disinfect the surfaces.

FOR DEVELOPING FILM

- With clean ungloved hands, transport the disposable container of exposed film to the processing area.
- Take care to avoid contaminating the developing equipment.

Digital x-rays

- Clean and disinfect the digital x-ray sensors and place clean barriers prior to patient exposure



use of barriers is essential





Chapter 12

Other Recommendations

Pre-procedural Mouth Rinses

No recommendation is offered regarding use of preprocedural antimicrobial mouth rinses to prevent clinical infections among dental healthcare personnel or patients. Although studies have demonstrated that a preprocedural antimicrobial rinse (e.g. chlorhexidine gluconate, essential oils, or povidone-iodine) can reduce the level of microorganisms in aerosols and splatter generated during routine dental procedures.

Oral Surgical Procedures

- Perform surgical hand antisepsis by using an antimicrobial product (e.g. antimicrobial soap and water, or soap and water followed by antimicrobial hand scrub) before donning sterile surgeon's gloves.
- Use sterile surgeon's gloves.
- Use sterile saline or sterile water as a coolant/irrigant when performing oral surgical procedures. Use devices specifically designed for sterile irrigating fluids.

Handling Biopsy Specimens

- During transport place biopsy specimens in a sturdy leak proof container labeled with a biohazard symbol.
- If a biopsy specimen container is visibly contaminated clean and disinfect the outside of a container or place it in an impervious bag labeled with a biohazard symbol.

Handling of Extracted Teeth

- Dispose of extracted teeth as regulated medical waste unless returned to the patient.
- Do not dispose of extracted teeth containing amalgam in regulated medical waste intended for incineration.
- Clean and place extracted teeth in a leak proof container, labeled with biohazard symbol, and maintain hydration for transport to educational institution or dental laboratory.
- Heat-sterilize teeth that do not contain amalgam before they are used for educational purposes.





Tuberculosis (TB) and the Dental Practice

TB is a contagious disease caused by the *Mycobacterium tuberculosis* bacterium. This bacterium is carried in microscopic airborne particles called droplet nuclei. Through a productive cough, these droplet nuclei can be aerosolized from persons with TB and can stay suspended in the air for several hours, where others breathe them into their lungs.

Although the risk of TB transmission in dentistry is low, your practice setting should routinely perform risk assessments to determine TB infection control policies. Such policies cover how dental workers in your facility detect and defer patients who may have active TB, management of Dental emergencies in patients with active TB, dental worker TB education, training, counseling and screening.

Patient Management

- Routinely ask all patients whether they have a history of TB disease or suggestive symptoms.
- Promptly refer for medical evaluation a patient with a medical history or suggestive symptoms of undiagnosed, untreated active TB
 - While in the Dental Health-Care facility, any patients suspects should be isolated as well as possible
 - Ask the patient to wear a surgical mask when not being evaluated
 - Instruct the patient to cover his or her mouth and nose when coughing or sneezing
- Defer elective dental treatment until the physician confirms that the patient does not have infectious TB
- If urgent dental care is needed, provide treatment in a facility that has TB isolation room and specific air-ventilation systems
 - standard surgical face masks do not provide TB transmission
 - Only fit-tested, disposable N-95 respirators guards against airborne disease agents
 - Standard Precautions must always be adhered to.





Dental Workers

- Get a base-lines two step tuberculin test at the beginning of employment
- For a dental worker who has a persistent cough for at least 3 weeks:
 - get evaluated immediately by a medical professional
 - Do not return to the work-place until the diagnosis of TB has been ruled out or medications initiated.





Chapter 13

Dental Laboratory

TO CONTAIN CONTAMINATION IN THE DENTAL SETTING

Clinical Disinfection of impressions:

Thoroughly clean and disinfect prostheses, impressions, orthodontic appliances, and other prosthodontic materials (such as occlusal rims, temporary prosthesis, bite registrations, and extracted teeth) to remove blood and bioburden before sending them to the laboratory.

- Impressions and dental prosthesis should be rinsed under running tap water then immersed in a tuberculocidal hospital disinfectant according to the manufacturers recommended contact time.
- The impression should be gently scrubbed with a camel hair brush and a liquid detergent to remove bioburden then soaked with a hospital level disinfectant.
- The disinfected impression should be thoroughly rinsed under tap water to remove any residual anti microbial chemicals.
- Reversible/irreversible hydrocolloid material, silicone or rubber based impressions and polyether impression material, should be handled carefully to prevent distortion.
- Alginate impression should be cleaned and soaked with a hospital level disinfectant according to manufacturer's instructions.
- Place a wet gauze or paper towel on the surface of the impression to prevent distortion.
- The impressions should be transported to the dental lab in sealed, disposable containers.
- Inform the lab in writing about the details of the patient and disinfection procedure.



Wash and disinfect impressions before transport to the Lab





Sterilization of Other Materials or Instruments:

1. Heat-sterilize heat tolerant items used in the mouth such as face bow forks, wax knives and carvers before using them for other patients.
2. Heat-sterilize metal trays before using them on another patient.

TO CONTAIN CONTAMINATION IN THE DENTAL LAB

- Establish a dedicated receiving and disinfecting area to reduce contamination in the production area. The receiving area technician should use all appropriate personal protective equipment such as gown, face-shield, and facemask. All items must be handled in an aseptic manner before transferring the production area.
- Clean and disinfect the case before handling, unless written directions states that it has already been done.
- If a previously undetected area of blood or bioburden becomes apparent on the material or appliance, repeat cleaning and disinfection procedures.
- Between cases, heat sterilize or high-level disinfect laboratory items such as burs, polishing points, rag wheels, laboratory knives that are used on contaminated or potentially contaminated appliances, prostheses, or other material. Disposable laboratory items are encouraged to be used.
- Between cases clean and disinfect pressure pots and water baths.
- Barrier-protect the counters surfaces of the receiving area with impervious paper and clean and disinfect on a regular basis.
- Prosthesis, intertreatment prosthodontic materials (e.g., occlusal rims, interim prostheses, occlusal registrations, etc.), and non-sterilizable equipment such as some facebow components must be cleaned with soap and water and disinfected with a hospital-level disinfectant if they become contaminated.
- Discard waste such as disposable containers/trays, impression material in medial waste bags meant for incineration.
- Articulators and other equipment that make no patient contact should be cleaned and disinfected with a hospital level disinfectant, rinsing drying and lubricating (for items with moving parts).
- The polishing lathe should be cleaned and disinfected daily.





- On the polishing lathe the pumice should be made by suspending the pumice in tincture of green soap or other surfactant to prevent colonization of airborne organisms and the pumice should be changed daily at a minimum. Unit doses of pumice are recommended to be used. Use physical barriers at the area of use to minimize splatter of dust that arises from the pumice.
- Disinfection of the cast is not required as the impression has been disinfected.
- Dispose of sharp items such as burs, disposable blades, and orthodontic wires in puncture-resistant containers (Sharps Box)
- Clean and disinfect countertops and lab benches when visibly soiled and at the end of daily work activities.



Standard Precautions should be observed in the dental laboratory at all times as; all patients are treated as though they are capable of transmitting a blood borne disease. Employee safety precautions are a must including the use of adequate eye and ear protection





Chapter 14

Program Evaluation

A successful infection control and employee protection program will have valid means to measure its effectiveness. The following methods can be used for this purpose

- Sterilization monitoring
- Scheduled and unscheduled inspections
- Waterline monitoring
- Health-care-associated infection monitoring

Evaluation of the infection control programs, including evaluation of performance indicators will be conducted on a routine basis.





QUICK REFERENCES

QUICK REFERENCE CHART: MANAGING PATIENT-CARE ITEMS AND ENVIRONMENTAL SURFACES

| PROCESS | DEFINITION | METHOD | | EXAMPLES | USED FOR |
|-------------------------|--|-------------------|------------------|---|---|
| Sterilization | Destroys all microorganisms including bacterial spores | Heat Automated | High temperature | Steam (autoclave), dry heat, unsaturated | Heat tolerant critical and |
| | | | Low temperature | Chemical vapor ethylene oxide gas, plasma sterilization | semicritical Heat-sensitive critical and semicritical |
| | | Liquid immersions | | Chemical sterilant (e.g. glutaraldehyde, glutaraldehyde with phenols, hydrogen peroxide, hydrogen peroxide with peracetic acid) | Heat sensitive critical and semicritical |
| High-level disinfection | Destroys all microorganisms but not necessarily high numbers of bacterial spores | Heat automated | | Washer-disinfector | Heat-sensitive semicritical |
| | | Liquid immersions | | Chemical sterilant/high-level disinfectant (e.g. glutaraldehyde, orthophthaldehyde, hydrogen peroxide, etc.) | |



| | | | | | |
|---------------------------------|---|--------------------------------------|---|-----------------------------------|---|
| Intermediate-level disinfection | Destroys vegetative bacteria, most fungi, and most viruses; tuberculocidal; not necessarily capable of killing bacterial spores | Liquid contact or barrier protection | Hospital disinfection with label claim of tuberculocidal activity (e.g. chlorine-containing products, quaternary ammonium compounds with alcohol, phenolics, iodophors, | Noncritical with visible blood | Clinical contact surfaces |
| | | | | | Blood spills on housekeeping surfaces |
| Low-level disinfection | Destroys most vegetative bacteria | Liquid contact or barrier protection | Hospital disinfection with HBV and HIV claims but no tuberculocidal activity (quaternary ammonium compounds, some phenolics, some iodophors) | Noncritical without visible blood | Clinical contact surfaces that are thoroughly cleaned |
| | | | | | Housekeeping surfaces |



SUGGESTED PPE FOR TASKS WITHIN THE DENTAL CENTER

| <i>Patient Care</i> | Gloves | Face Protection | Eye Protection | Garmen t | Utility Gloves | Other | Comme st | None |
|--|----------|-----------------|----------------|-------------|----------------|-----------|-----------|----------|
| Greeting the patient in the reception area | | | | | | | | x |
| Taking a medical history | | | | 1* | | | | x |
| Performing an oral exam | x | 3* | 3* | 1* | | | | |
| Polishing Teeth | x | x | x | x | | | | x |
| Scaling (manual) | x | x | x | x | | | | |
| Scaling (ultrasonic) | x | x | x | x | | | | |
| Suctioning during a cavity preparation | x | x | x | x | | | | |
| In-operative charting | | | | 1* | | 2* | | x |
| Taking an impression | x | 3* | 3* | 1*3* | x | | | |
| Answering the telephone during treatment | | | | | | | 2* | x |
| <i>Instrument processing</i> | | | | | | | | |
| Placing instruments in a holding solution (to keep them moist until they can be cleaned) | | x | x | x | x | | | |
| Loading the ultrasonic cleaner/instrument washer | | x | x | x | x | | | |
| Hand scrubbing instruments | | x | x | x | x | | | |
| Wrapping instruments for sterilization | | | | 1* | x | | | |
| Loading the sterilizer | | | | 1* | x | | | |
| Removing instrument packs from the sterilizer | | | | | | 4* | | |
| Distributing/storing wrapped, sterile instrument packets | | | | | | | | x |
| <i>Operatory clean-up</i> | | | | | | | | |
| Transporting instruments from operatory to the reprocessing area | x | | | 1* | | | | |
| Environmental surface disinfection (use spray-wipe-spray technique) | | x | x | x | x | | | |
| Placing a clean surface barrier on an uncontaminated surface | | | | 1* | | | | x |
| <i>Maintenance/ quality control</i> | | | | | | | | |
| Cleaning the ultrasonic chamber. discarding and replacing solution | | x | x | x | x | | | |
| Recording result of sterilizer monitoring | | | | | | | | x |



*Other/ Comments:

(1) Although might not be required it is acceptable to leave on protective clothing that has been worn through out patient treatment as long as it is not visibly soiled. Never wear PPE in coffee rooms, break rooms or in reception areas.

(2) Alternative to removing gloves, vinyl overgloves (foodhandlers' gloves) can be donned to limit the spread of contamination to clinical contact surfaces during treatment interruptions.

(3) Optional; may provide additional protection against non-bloodborne disease transmission.

(4) Heat-resistant gloves protect against burns from hot instrument packs.





SUGGESTED WORK RESTRICTIONS FOR HEALTHCARE PERSONNEL
 INFECTED WITH OR EXPOSED TO MAJOR INFECTIOUS DISEASES IN
 THE DENTAL CENTER
(Regional/ local medical regulations apply)

| Disease/Problem | Work Restriction | Duration |
|--|---|---|
| Conjunctivitis | Restrict from patient contact and contact with patients environment | Until discharge ceases |
| Cytomegalovirus infection | No restriction | |
| Diarrheal disease Acute stage(diarrhea with other symptoms) | Restrict from patient contact, contact with patients environment, and food handling | Until symptoms resolve |
| Convalescent stage, Salmonella sepsis | Restrict from patient care at high risk | |
| Enteroviral infection | Restrict from care of infants, neonates and immunocompromised patients and their environments. | Until symptoms resolve |
| Hepatitis A | Restrict from patient contact, contact with patient's environment and food handling | Until 7 days after onset of jaundice |
| Hepatitis B Personnel with acute or chronic hepatitis B surface antigenemia who do not perform exposure prone procedures Personnel with acute or chronic hepatitis B surface antigenemia who perform exposure prone procedures | No restrictions, standard precautions to be followed Do not perform invasive procedures until council from a review panel has been sought; panel should review and recommend procedures that personnel can perform, taking into account specific procedures as well as skill and technique. Standard precautions should also be observed | Until hepatitis B e antigen is negative |
| Hepatitis C | No restrictions on professional activity. HCV-positive healthcare personnel should follow aseptic technique and standard precautions | |



| | | |
|--|---|---|
| <p>Herpes simplex Genital</p> <p>Hands (herpetic Whitlow)</p> <p>Orofacial</p> | <p>No restrictions</p> <p>Restrict from patient contact and contact with patients environment.</p> <p>Evaluate need to restrict from care of patients at high risk</p> | <p>Until lesions heal</p> |
| <p>Human immunodeficiency virus; personnel who perform exposure prone procedures.</p> | <p>Do not perform invasive procedures until council from a review panel has been sought; panel should review and recommend procedures that personnel can perform, taking into account specific procedures as well as skill and technique. Standard precautions should also be observed.</p> | |
| <p>Measles Active</p> <p>Post exposure (susceptible personnel)</p> | <p>Exclude from duty</p> <p>Exclude from duty</p> | <p>Until 7 days after the rash appears.</p> <p>From 5 days after first exposure through 21days after last exposure or 4 days after rash appears</p> |
| <p>Meningococcal infection</p> | <p>Exclude from duty</p> | <p>Until 24hrs after start of effective therapy.</p> |
| <p>Mumps Active</p> <p>Post exposure (susceptible personnel)</p> | <p>Exclude from duty</p> <p>Exclude from duty</p> | <p>Until 9 days after onset of parotitis</p> <p>From 12 day after first exposure through 26th day after last exposure or until 9 days after onset of parotitis</p> |
| <p>Pediculosis</p> | <p>Restrict from patient contact</p> | <p>Until treated and observed to free of adult and immature lice</p> |
| <p>Pertussis Active</p> <p>Post exposure (asymptomatic personnel)</p> <p>Post exposure (symptomatic personnel)</p> | <p>Exclude from duty</p> <p>No restriction, prophylaxis recommended</p> <p>Exclude from duty</p> | <p>From beginning of catarrhal stage through third week after onset of paroxysms, or until 5 days after start of effective antibiotic therapy</p> <p>Until 5 days after start of effective antibiotic therapy</p> |





| | | |
|---|---|---|
| Rubella Active | Exclude from duty | Until 5 days after rash appears. |
| Post exposure (susceptible personnel) | Exclude from duty | From 7 days after first exposure through 21 day after last exposure |
| Staphylococcus aureus infection Active, draining skin lesion | Restrict from contact with patients and patients environment or food handling. | Until lesions after resolved |
| Carrier state | No restriction unless personnel are epidemiologically linked to transmission of the organism. | |
| Streptococcal infection, group A | Restrict from patient care, contact with patients environment and foodhandling | Until 24 hours after adequate treatment started. |
| Tuberculosis Active disease | Exclude from duty | Until proved non-infectious |
| PPD converter | No restriction | |
| Varicella (chicken pox) Active | Exclude from duty | Until all lesions dry and crust. |
| Postexposure (susceptible personnel) | Exclude from duty | From 10 th day after post exposure through 21 st day (28th day if varicella zoster immunoglobulin{VZIG} administered) after last exposure |
| Zoster (Shingles) Localized, in health person | Cover lesions, restrict from care of patients at high risk. | Until all lesions dry and crust. |
| Generalized or localized in immunosuppressed person. post exposure (susceptible personnel) | Restrict from patient contact. Restrict from patient contact. | Until all lesions dry and crust. From 10 th day after post exposure through 21 st day (28th day if varicella zoster immunoglobulin{VZIG} administered) after last exposure |
| Viral respiratory infection, acute febrile | Consider excluding from the care of patients at high risk or contact with such patients environments during community outbreak of respiratory syncytial virus and influenza | Until acute symptoms resolve. |



Glossary of Terms:

-A-

Aerosols – Particles of a size that can be inhaled (less than 10 microns) generated by both humans and environmental sources that can survive and remain airborne for extended periods in the indoor environment. Sources of aerosols in the dental setting include the use of handpieces, ultrasonic scalers and air-water syringes.

AIDS – Acquired Immune Deficiency Syndrome, which caused by infection with the human immunodeficiency virus (HIV) and is characterized by weakening of the immune system.

Airborne Transmission- A means of spreading infection in which microscopic airborne particles (droplet nuclei) are inhaled by the susceptible host.

Alcohol –based hand rub- An alcohol containing waterless antiseptic preparation that is rubbed onto the hands without wetting or rinsing to reduce the number of microorganisms on the skin.

Allergic Contact Dermatitis – A skin reaction resulting from a contact with a chemical allergen (for example certain components of patient-care gloves, some dental materials), generally confined to the contact area and appearing slowly over 12-48 hours. Also referred to as “type IV” or “delayed” hypersensitivity.

Anaphylaxis – A sudden, severe, potentially fatal systemic allergic reaction with symptoms that can include hives, watery eyes and difficulty in breathing. Also referred to as “type I” or “immediate” hypersensitivity.

Antibody – A protein produced by the immune system in response to the presence of a specific antigen (that is a foreign body / agent such as a virus); it helps the body fight against infection.

Antimicrobial agent – A product that has the ability to kill or otherwise irreversibly destroy microorganisms.

Antiseptic – A germicide used on skin or living tissue to inhibit or kill microorganisms; examples include alcohols, chlorhexidine, chlorine, hexachlorophene, iodine, chloroxylenol (PCMX), quarternary ammonium compounds and triclosan.





Antiseptic Handwash – Washing hands with water and a soap / detergent that contains antiseptic agent.

Antiseptic Handrub – Applying an alcohol-based hand rub products to all surfaces of the hands to reduce the number of microorganisms present.

Appliance – A fixed or removable corrected dental device that replaces, holds or moves teeth, for example partial dental, orthodontic retainer.

Asepsis – The absence of contamination.

Aseptic Technique – A manner of safe handling and use that prevents or reduces the spread of microorganism from one site to another.

-B-

Bacterial endocarditis – An infection of the heart's inner lining (endocardium) or the heart valves; occurs when bacteria in the bloodstream lodge on abnormal heart valves or other damaged heart tissue.

Barrier – An item that blocks the penetration of microorganisms, particulates and fluids, thereby reducing the potential contamination of the underlying surface. Also referred to as "surface barrier".

Bioburden (1) Organic material on a surface or object prior to cleaning or sterilization; (2) the number of viable organisms in or on the object or surface. Also known as "bioload" or "microbial load".


Biological Indicator – Device that monitor the sterilization process by using a standardized population of resistant bacterial spores; verifies that all parameters necessary for sterilization were present. Also called "spore test" or "BI".

Biofilm – A complex colony of microorganisms, most notably bacteria, that forms on the surfaces that are bathed with water.

Biohazard – A biological agent (such as infectious microorganisms) or a condition that poses a threat to humans.





Biohazard symbol – Universal indicator of an infectious hazard, indicated by the symbol 

Bloodborne Diseases – An illness that is transmitted by exposure to pathogens in the blood.

Bloodborne Pathogen – A disease producing microorganism spread by contact with blood or other body fluids contaminated with blood from an infected person; examples include hepatitis B virus, hepatitis C virus and HIV.

-C-

Carrier – A person, immune or recovered from a disease, who still harbors and can transmit the infectious agent to others.

CFU/ml – (Colony Forming Units per milliliter) The minimum number, (that is tens of millions) of separable cells that give rise to visible growth; may consists of pairs, chains and clusters as well as single cells.

Chain of Infection – The set of five conditions --- all of which must be present ---that allows disease transmission to occur; includes (1) a pathogen in sufficient numbers to cause infection, (2) a place for the pathogen to reside and multiply, (3) a mode of transmission to transfer the pathogen to new host; (4) a portal of entry into a new host (that is, an appropriate route for the pathogen to enter the body); and (5) a host this is not immune to the pathogen. Infection control efforts remove one or more “links” in the chain of infection, thereby preventing disease transmission.

Chemical Indicator – Device that monitor the sterilization process by changing color or form with the exposure to one or more sterilizing conditions (for example temperature, steam); intended to detect potential sterilization failures due to incorrect packaging, incorrect sterilizer loading or equipment malfunction.

Cleaning- Removal of visible contamination from a device or surface, using either the physical action of scrubbing with a surfactant / detergent and water or an energy-based process (such as that used by an ultrasonic cleaner) with the appropriate chemical agents.





Clinical Contact Surface – Surfaces that are touched by contaminated hands, instruments, devices, or other items while providing dental or medical care or while performing activities that support dental or medical care.

Contact time – The exposure time for the disinfectant to accomplish the desired antimicrobial effect, as defined by the disinfectant manufacturer.

Contamination – The presence of microorganisms (usually those capable of producing diseases or infection) on living or nonliving surfaces.

Critical – The category of medical devices or instruments that cut or otherwise penetrate bone or soft tissue, providing them with access to the bloodstream or normally exposed tissues; so named because of the substantial risk of acquiring infection if such an item is contaminated.

Cross-contamination – Spreading of microorganisms between persons and/or surfaces.

-D-

Decontamination – Process that makes a medical device, instrument of environmental surface safe (that is, no longer capable of transmitting a disease) to handle, use or discard.

Detergent – Compound with cleaning action but no antimicrobial activity; also referred to as “soap”.

Direct Contact – Physical transfer of microorganisms between an infected or colonized person and a susceptible host.

Disinfectant –Chemical agent used on inanimate (nonliving) objects to destroy virtually all recognized pathogens, but not necessarily bacterial endospores.

Disinfection – Destruction of pathogenic and other kinds of microorganisms by physical or chemical means; less lethal than sterilization, it destroys most recognized pathogens but does not necessarily kill bacterial endospores.

Droplet Nuclei – Potentially infectious microscopic particles (5microns or less in diameter) that can remain suspended in the air





for long periods of time; formed by the dehydration of airborne droplets containing microorganisms. *Also see airborne transmission.*

Droplets / Spatter – Small particles of moisture expelled into the air, as when a person coughs or sneezes or when water is converted to a fine mist by an aerator or shower head. Larger than droplet nuclei, these particles may contain infectious microorganism but quickly settle on surfaces, usually limiting the risk of disease transmission to persons near the source of the droplets.

-E-

Engineering Controls – Controls that isolate or remove the bloodborne pathogens hazard from a workplace; examples may include sharps disposal containers and safer medical devices (such as self sheathing needles and needleless system).

Environmental Protection Agency (EPA) – Bureau of the United States government charged with regulating the disinfectants used on environmental surfaces (intermediate and low-level disinfectants) and waste generated in healthcare facilities.

Environmental Surface – Surface within a dental or medical treatment area that is not directly involved in patient care that may or may not be contaminated during the course of treatment; examples include countertops, drawer handles, floors, walls, and instrument control panels.

Event-related Packaging – A storage practice that recognizes that a package and its contents should remain sterile until some event causes the items to be contaminated.

Exposure Incident – A specific eye, mouth, or other mucous membrane, non-intact skin or parenteral contact with blood or other potentially infectious materials that result from the performance of a worker's duties.

Exposure Management – Series of steps carried out in the event of an accidental exposure; includes first aid; immediate reporting and referral to a qualified healthcare professional for evaluation and follow-up.

-F-

Flushing – The act of running water through waterlines and / or the devices attached to them.





Food and Drug Administration (*FDA*) – Bureau of the United States government that regulates medical devices such as sterilizers, instrument cleaners, gloves, syringes, surgical masks and dental alloys.

-G-

Germicide – An agent that destroys microorganisms, especially pathogenic microorganisms. Other terms with the suffix “__cide” (for example virucide, fungicide, bactericide, tuberculocide, sporicide) use the prefix to indicate the type of microorganisms that are inactivated (for example a virucide inactivates virus). Antiseptics are germicides for living tissues; disinfectants are germicides used on non-living items and surfaces.

-H-

Healthcare-Associated Infections – Any infection associated with a medical or surgical intervention.

Heat Sterilization – A process that destroys all microbial life, including bacterial endospores. Autoclaves, chemical vapor sterilizers and dry-heat sterilizers are used in dentistry for heat sterilization of patient-care items.

Hepatitis B Immune Globulin (*HBIG*) – A product prepared from plasma containing high titers of hepatitis B antibodies that provides short-term protection (3-6 mos.) against hepatitis B infection; may be used in post exposure prophylaxis.

Hepatitis B Surface Antigen (*HBsAg*) – Serologic marker on the surface of the HBV detected in high levels during acute or chronic hepatitis.

Hepatitis B e antigen (*HBeAg*) – Secreted product of the nucleocapsid gene of HBV found in serum during acute and chronic HBV infection. Its presence indicates that the virus is replicating and serves as a marker for increased infectivity.

Hepatitis B surface Antibody (*anti-HBs*) – Protective antibody against HBsAg. Presence in the blood can indicate past infection with and immunity to HBV or immune response from hepatitis vaccine.





Hepatitis B Virus (*HBV*) – A highly transmittable bloodborne disease agent that can cause a form of liver damage; a serious occupational risk to unvaccinated dental workers.

Hepatitis C Virus (*HCV*) – A bloodborne disease agent that can result in very serious liver disease.

High-level Disinfectant – U.S. Food and Drug Administration term describing a liquid chemical sterilant used for a shorter contact time; inactivates vegetative bacteria, mycobacteria, fungi, and viruses but not necessarily high number of bacterial spores.

Hospital Disinfectant – A germicide registered by the U.S. EPA that is effective against the test microorganisms *Salmonella Choleraesuis*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa* for use on nonliving objects in dental or medical facilities.

Host – Person or animal or plant on which or in which a foreign microorganism lives.

Housekeeping surfaces – Environmental surface that is not involved in the direct delivery of dental care (for example floors, walls).

-I-

Immunity – Protection against a disease, indicated by the presence of antibodies in the blood, which usually can be identified with a laboratory test.

Immunocompromised – Having an immune system that cannot adequately respond to challenges.

Implantable Device – A device that is placed into a surgically or naturally formed cavity of the human body where it is meant to remain for at least 30 days.

Indirect Contact – Contact between a susceptible host and a contaminated object that is not the original source of the contamination (for example instruments, equipments or environmental surface).

Intermediate Level Disinfectant – A chemical liquid germicide registered with the U.S. EPA as a hospital disinfectant with a tuberculocidal activity.

-L-





Low-level disinfection – Process that inactivates most vegetative bacteria, some fungi and some viruses but cannot be relied on to inactivate resistant microorganisms.

-M-

Mechanical Indicator – Device (such as gauge, meter, display, or printout) that displays an element of the sterilization process (for example time, temperature and pressure).

Medical Waste – Waste generated through the provision of dental or medical care; may be regulated or non – regulated.

Microorganism – An organism or microscopic or ultramicroscopic size, includes bacteria, fungi and endospores, mycobacteria.

Mouthrinse – Also known as *Preprocedural mouthrinse*. A preparation for cleansing the mouth and teeth, may contain fluoride, antiseptic or odor inhibitors.

-N-

Noncritical – Instruments or surfaces that contact only intact skin.

Nosocomial Infection – An infection acquired in a hospital as a result of medical care.

-O-

Occupational Exposure – *see Exposure incident*.

Occupational Illness – An infection or disease resulting from an occupational exposure; for example, an on – the-job exposure to hepatitis B virus (occupational exposure) can cause chronic hepatitis B disease (an occupational illness) in unvaccinated dental worker.

Other Potentially Infectious Materials (*OPIM*) – an Occupational Safety and Health Administration term that refers to body fluids or tissues that may contain bloodborne pathogens or to body fluids that are visibly contaminated with blood.

-P-

Parenteral – Means of piercing the mucous membranes or the skin barrier through events such as a needlestick, human bite, cut or abrasion.





Pathogen – Any microorganism that can cause disease in a host.

Percutaneous Injury – An injury that penetrates the skin, such as needle stick or a cut with a sharp object.

Personal Protective Equipment (PPE) – Specialized clothing or devices worn by workers for protection against a hazard; in dentistry, includes gloves, mask, gown, and protective eyewear but not general work clothes (such as uniforms, pants, shirts or blouses) that are not intended to protect against a hazard.

Postexposure Management – The series of protocols recommended to minimize the chance of disease transmission after an occupational exposure; includes immediate reporting of an injury, preparing an exposure incident report and referring the exposed individual to a qualified healthcare professional for evaluation, treatment, counseling and follow-up.

-Q-

Qualified Healthcare professional – A physician or other healthcare professional who has the necessary and current training, expertise and licensure to provide hepatitis B vaccination and postexposure evaluation and follow – up, including postexposure prophylaxis and counseling on risks and possible consequences of occupational exposures.

-R-

Regulated Medical Waste – Waste generated through the delivery of medical or dental services that requires special handling and disposal because it can cause infection or physical harm (for example blood-or-saliva-soaked cotton rolls, extracted teeth, sharp items, surgically removed hard and soft tissue).

Retraction – The drawing in of oral fluids or other debris from the mouth into dental waterlines or handpiece mechanisms, resulting in contamination that may be introduced to subsequent patients if equipment is not properly maintained or processed, also referred to as “suckback”.

-S-

Semicritical – Category of instruments or devices that contact but do not cut or penetrate mucous membranes.





Seroconversion – The change of a serological test from negative to positive, indicating the development of antibodies in response to infection or immunizations.

Shelf life – Period of time a product or a solution may be stored before use or activation without losing its effectiveness.

Standard Precaution – Practices and procedures that integrate and expand the elements of universal precautions into a standard of care designed to protect healthcare workers and patients from pathogens that can be spread by blood or any body fluid, excretion or secretion; applies to contact with blood; all body fluids, secretions and excretions (except sweat), regardless of whether they contain blood, nonintact skin; and mucous membrane.

Sterile – State of being free from all forms of living microorganisms.

Sterilization – The use of a physical (such as heat) or chemical procedure to destroy all microorganisms; including large number of resistant bacterial spores.

Surgical scrub – The technique used to aseptically scrub hands before performing a surgical procedure.

Systemic – Affecting the whole body.

-T-

Transmission-based Precaution – Additional measures (that is, outside of standard precaution) necessary to prevent the spread of diseases that are transmitted through airborne, droplet or contact transmission (for example wearing of N-95 respirator mask to protect against tuberculosis transmission).

Tuberculosis – Diseases caused by *Mycobacterium tuberculosis*, a bacterium that can infect various parts of the body but usually involves the lungs.

-U-

Ultrasonic cleaner - Device that removes debris by a process called cavitations, in which waves of acoustic energy are generated in a solution to loosen and remove debris from objects.





Universal Precaution - a set of practices and procedures based on the concept that all blood and all body fluids that might be contaminated with blood should be treated as infectious.

-V-

Vaccine - A product administered through needle injections, by mouth or by aerosols with the intent of producing immunity to protect the body against a disease.

Visibly soiled – Showing evidence of blood, dirt, residual dental materials or other debris.

-W-

Washer disinfectant – An automatic device that uses a high temperature cycle to clean and thermally disinfect instruments.

Waterline – The thin tubing that connects and carries treatment water from the water source (either the municipal water supply or a self-contained water system) to instruments used to treat patients.

Wicking – Absorption of liquid along a thread or through a material (for example, penetration of liquids through undetected holes in the glove)

Disclaimer:

The contents of Guidelines for Infection Control were gathered from CDC, OSAP, ADA and OSHA. Care has been taken to confirm the accuracy of the information present.

Our Resources and recommended reads

- www.cdc.gov
- www.osap.org
- www.ada.org
- www.osha.gov
- cottone's – practical Infection Control in Dentistry
- United States Air Force Medical Services





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