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Clinical Practice Guideline for an Infection Control/Exposure Control Program in the Oral Healthcare Setting

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Continuing Education Units: 3 hours

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Disclaimer: *Participants must always be aware of the hazards of using limited knowledge in integrating new techniques or procedures into their practice. Only sound evidence-based dentistry should be used in patient therapy.*

Note to Iowa dental professionals: *This course complies with the Iowa Dental Board for recertification in the area of infection control standards, as established by the Centers for Disease Control and Prevention (CDC).*

This course presents the essential elements of a hierarchical infection control/exposure control program for and its implementation in oral healthcare settings.

Conflict of Interest Disclosure Statement

- Dr. Terézhalmy has done consulting work for Procter & Gamble and is a member of the dentalcare.com Advisory Board.

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Overview

This course presents a prototypical, evidence-based, hierarchical infection control/exposure control protocol predicated on Standard Precautions (expanded with new evidence-based elements) and Transmission-based Precautions to prevent or minimize healthcare-associated infections in oral healthcare settings.

Learning Objectives

Upon completion of this course, the dental professional should be able to:

- Understand the rationale for and develop policies and practices (i.e., an office infection control/exposure control protocol) intended to prevent or minimize healthcare-associated infections in the oral healthcare setting.
- Understand the role of and implement vaccination strategies intended to reduce the risk of vaccine preventable diseases in the oral healthcare setting.
- Understand the role of and implement the use of personal protective equipment to prevent or reduce the risk of occupational exposure in the oral healthcare setting.
- Understand the role and implement appropriate hand hygiene
- Understand the role of and incorporate engineering and work practice controls to eliminate or isolate the hazard in the workplace.
- Understand the role of and implement environmental infection control to provide a safer work environment.
- Understand the importance of post-exposure follow-up and associated policies and practices to reduce the risk of post-exposure infection.
- Understand the principles of and implement transmission-based precautions to prevent the potential spread of specific diseases (e.g., TB disease).
- Understand the principles of and implement respiratory hygiene/cough etiquette, i.e., basic source control measures with patients, visitors, and oral health care personnel with signs and symptoms of respiratory tract infection.
- Understand the principles of administrative controls and establish exclusion policies from work and patient contact.

Course Contents

Introduction

The primary obligation and ultimate responsibility of oral healthcare personnel (OHCP) is the timely delivery of quality care in the privacy of a comfortable and ***safe environment***. While the transmission of pathogenic microorganisms in oral healthcare settings is rare, healthcare-associated infections (HAIs) do present a potential hazard to OHCP and patients alike. ***To prevent or minimize***

HAIs among OHCP and patients, oral healthcare facilities, like all healthcare facilities, are mandated to develop a written infection control/exposure control protocol predicated on a hierarchy of preventive strategies.

Historically, strategies to eliminate or reduce the risk of HAIs were based on Universal Precautions, i.e., the concept that patients with bloodborne pathogens can be asymptomatic (unaware that they are infectious) and, therefore, all blood and body fluids contaminated with blood were treated as infectious. Today, Standard Precautions (periodically expanded with new evidence-based elements) and Transmission-based Precautions provide the fabric for a hierarchy of preventive strategies to protect both OHCP and patients and apply to contact with blood and all other potentially infectious material (OPIM).

Infection control/exposure control strategies should be appropriate for the oral healthcare setting. As these strategies deviate from optimal design and implementation, the quality (value, outcome) of infection control/exposure control program decreases at an accelerated rate. It is recommended that an Office Infection-Control Coordinator (OICC) be appointed with responsibility for the development and management of the office infection control/exposure control program to ensure that the criteria are relevant, the procedures are efficient, and the practices are successful. However, the creation and maintenance of a safe work environment mandates the commitment and accountability of all OHCP.

Education and Training

OHCP shall participate in an education and training program at the time of initial assignment to tasks in which exposure to blood and OPIM may occur and at least annually thereafter.

I. **Background**
Compliance with the exposure control/infection control protocol is significantly improved if OHCP understand the rationale for the written policies and practices intended to prevent HAIs. The objectives of the education and training program are to enlighten OHCP regarding (1) the risk of HAIs, (2) preventive strategies, (3) post-exposure evaluation and follow-up and (4) administrative controls.

A. Infection, an invasion and multiplication of microorganisms in body tissues, results from local cellular injury as a consequence of:
   1. Competitive metabolism
   2. Toxin production
   3. Immune-mediated reaction

B. "Chain of infection," the transmission of infectious agents in healthcare settings, requires three elements:
   1. Source or reservoir of infectious agents
      a. Pathogens associated with HAIs are derived primarily from humans, but contaminated objects and environmental sources are also implicated.
   2. Susceptible host with a portal of entry receptive of the agent
      a. Establishment of infection and its severity relate to the state of host defense mechanisms; however, the numbers, pathogenicity, virulence, and antigenicity of organisms are important determinants.
   3. Mode of transmission for the agent
      a. Pathogens may be transferred from the source to a host by contact transmission, i.e., direct or indirect contact transmission; or respiratory transmission, i.e., inhalation of droplets or droplet nuclei (airborne transmission).

C. Pathogenic organisms of concern in the oral healthcare setting
   1. HBV, HCV, and HIV
   2. Measles, mumps, and rubella
   3. Herpes simplex, varicella (chicken pox), and varicella zoster (shingles)
   4. Influenza, syncytial viruses, group *A streptococci*
   5. *Mycobacterium tuberculosis*
   6. Emerging pathogens (methicillin-resistant *staphylococcus aureus* (MRSA), Ebola virus, others)

D. Preventive strategies
   1. Education and training
   2. Immunizations
   3. Personal protective equipment
   4. Hand hygiene

5. Engineering and work-practice controls
6. Environmental infection control
7. Transmission-based precautions
8. Respiratory hygiene and cough etiquette
9. Post-exposure evaluation and follow-up
10. Administrative controls and work restrictions

II. **Execution/Compliance**

A. An education and training program is completed by all OHCP prior to initial assignment to tasks and procedures in which exposure to blood and OPIM may occur and at least annually thereafter.
   1. The program is scheduled at an acceptable time for and at no cost to OHCP.
   2. The presentation is appropriate in content and vocabulary for the educational level of participants.
   3. The program is conducted by person(s) knowledgeable about the subject.
   4. The speaker provides an opportunity for interactive questions and answers.

B. Training record
   1. An individual Training Record is maintained on all OHCP for the most recent 3-year period.

Vaccinations

OHCP shall be vaccinated against vaccine preventable infections in accordance with current state and federal regulations, as well as recommendations made by relevant professional organizations.

I. **Background**

Immunization programs have markedly reduced the incidence of vaccine-preventable diseases. Today, a substantial percentage of morbidity and mortality from several vaccine preventable diseases occurs in adults who escaped natural infection or immunization and who now are at increased risk of these diseases because of lifestyle, advancing age, the presence of certain chronic diseases, or occupation (e.g., healthcare workers).

II. **Execution/Compliance**

A. Mandated hepatitis B vaccination series
   1. Hepatitis B vaccine is made available at no cost to OHCP, without a history of prior immunization, at the time of initial assignment to tasks in which exposure may occur.
   2. If the hepatitis B vaccination series is declined, the person must sign a copy of the Mandatory Hepatitis B Vaccination Declination Form (Box 1).
   3. If subsequently the person decides to submit to vaccination, while still covered under the standard, the hepatitis B vaccination series is made available at that time.
   4. Post-vaccination seroconversion - 1st vaccination series
      a. Testing for HBsAb is strongly recommended 1-2 months after the 3rd dose of the 1st vaccination series
      b. A HBsAb titer of >10 mIU/mL is considered adequate
      c. A person who do not develop an adequate antibody response to the 1st vaccination series will be offered a second 3-dose series
   5. Post-vaccination seroconversion - 2nd vaccination series
      a. Testing for HBsAb is strongly recommended 1-2 months after the 3rd dose of the 2nd vaccination series
      b. If no antibody response occurs, testing for HBsAg is strongly recommended
         i. HBsAg-negative OHCP will be counseled about precautions to prevent HBV infection and the need to obtain HBIG prophylaxis for any known or probable parenteral exposure to HBsAg-positive blood.
         ii. HBsAg-positive OHCP will be referred for post-exposure evaluation and follow-up and counseled about the need for work restrictions to prevent the

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

_____ _____

Employee Signature Date

Box 1. Mandatory Hepatitis B Vaccination Declination Form.[5]

transmission of HBV to others.

B. Booster doses of the HB vaccine
   1. At this time, routine booster doses of the hepatitis B vaccine are not indicated; if at a future date booster doses are recommended, they will be made available at no cost to OHCP.
C. Other vaccines highly recommended for all OHCP include influenza, measles, mumps, rubella, varicella, and pertussis.
D. In certain circumstances, OHCP should also be vaccinated against meningococcal disease, typhoid fever, and poliomyelitis.
E. Vaccines recommended for adults in general include the pneumococcal polysaccharide vaccine, tetanus and diphtheria toxoids, human papillomavirus vaccine, zoster vaccine, and hepatitis A vaccine.
F. OHCP unable or unwilling to be vaccinated as recommended will be educated regarding their exposure risk and the management of work-related illness and work restrictions (if applicable).
G. Documentation of vaccination status
   1. The vaccination status of OHCP is documented in their individual Medical Record and includes the following information:
      a. The dates of vaccination (where applicable or available)
      b. Evidence of immunity (where applicable or available)
      c. A signed copy of the mandatory hepatitis B vaccination declination form (where applicable)

Personal Protective Equipment

To prevent or reduce the risk of disease transmission, personal protective equipment shall be worn by all OHCP when performing procedures that are likely to result in exposure to blood and OPIM.

I. **Background**

Pathogenic organisms in blood and OPIM may come in contact with skin; conjunctival and oral mucosal tissues; and respiratory epithelium by inhalation of airborne microorganisms, i.e., droplets or droplet nuclei suspended in air. Personal protective equipment (PPE) is designed to protect the skin and mucous membranes (eyes, nose and mouth) and respiratory epithelium of OHCP from exposure to a source or reservoir of pathogenic organisms by contact transmission, i.e., direct or indirect contact transmission; and respiratory transmission, i.e., inhalation of droplets or droplet nuclei (airborne transmission).

II. **Execution/Compliance**

A. Personal protective equipment, which does not permit blood or OPIM to pass through to or reach street clothes, undergarments, skin, or mucous membranes under normal conditions of use and for the duration of time that the protective equipment is used, is provided for and is routinely worn by all OHCP.
   1. Protective clothing
      a. Gowns or lab coats with long sleeves are worn to protect the forearms when splash, spatter, or spray of blood or OPIM to the forearms is anticipated.
      b. Protective clothing is changed daily, whenever it becomes visibly soiled, and as soon as possible if penetrated by blood or OPIM.
      c. Protective clothing is removed before leaving the work area.
      d. Dirty protective clothing is placed in designated areas for disposal or washing.
   2. Task-specific gloves
      a. Non-surgical, surgical, or heavy-duty utility gloves are worn by all OHCP to prevent or reduce the risk of contaminating the hands with blood or OPIM and to prevent or reduce the risk of cross-infecting in the clinical process.
         i. To reduce the risk of latex-related allergies, only powder-free, low-allergen latex gloves; and non-latex, nitrile or vinyl gloves are available.
         ii. Non-surgical and surgical gloves are single-use items, which are used for only one patient and are then discarded.
         iii. When torn or punctured, gloves are changed as soon as possible.
         iv. Gloves may not be washed because it can lead to wicking (penetration of liquids through undetectable holes in the gloves) and subsequent hand

contamination.
v. Double gloving is acceptable for extensive oral surgical procedures.
vi. Heavy-duty utility gloves are worn for all instrument, equipment, and environmental surface cleaning and disinfection.
vii. Wearing gloves does not eliminate the need for hand hygiene.

3. Surgical masks
   a. Surgical masks that cover both the nose and the mouth are worn by all OHCP during clinical activities likely to generate splash, splatter, and aerosols.
   b. Surgical masks provided for routine use have filtration efficiency of 95% for microorganisms greater than 3 microns.
   c. When a mask becomes wet from exhaled air or contaminated with infectious droplets, spray, or from touching the mask with contaminated fingers it is changed as soon as possible (between patients or even during patient treatment).
4. Particulate filter respirators
   a. When airborne infection isolation precautions are necessary (e.g., transmission-based precautions for patients with TB), a National Institute for Occupational Safety and Health (NIOSH)-certified particulate-filter respirator (N95, N99, or N100) is used, which have the ability to filter . 3 µm particles with a filtering efficiency of 95, 99, and 99.7% respectively.
5. Protective eyewear
   a. Protective eyewear with solid side shields or a face shield is worn by OHCP during the clinical process likely to generate splash, splatter, and aerosols.
   b. Protective eyewear with solid side shields is also provided for the patients to protect their eyes from spatter and debris generated during the clinical process.
   c. Protective eyewear is cleaned with soap and water between patients.
6. Ventilation devices
   a. Mouthpieces, pocket masks, and resuscitation bags are used when CPR is administered.

Hand Hygiene

Hand hygiene procedures shall be implemented at the beginning of each work cycle, before gloving, after degloving, and before regloving, and anytime the hands are visibly contaminated with blood or OPIM.

I. **Background**

The transmission of healthcare-associated pathogens most often occurs via the contaminated hands of OHCP. It is axiomatic that wearing gloves during patient care is an essential element of standard precautions, yet gloves do not provide complete protection against hand contamination and the hands are also frequently contaminate after the gloves are removed. It is axiomatic that hand hygiene is one of the most important infection control measures for preventing HAIs.

The acquisition of various healthcare-associated pathogens is reduced when hand hygiene is performed more frequently and the prevalence of HAIs is decreased as adherence to recommended hand hygiene practices is improved. Oral healthcare facilities are accountable for establishing a system in which OHCP have the knowledge, competence, time, and tools to practice hand hygiene; and OHCP have the duty to perform hand hygiene - perfectly and every time.

The term hand hygiene is a general term that applies to (1) handwashing (2) hand antisepsis, and (3) surgical hand antisepsis. Products used for hand hygiene in healthcare settings are detergents (surfactants, the term “soaps” is often used). Detergents are compounds that possess cleaning action and are composed of both hydrophilic and lipophilic parts. An antimicrobial soap is a soap that contains an antiseptic agent, a substance that when applied to skin reduces the microbial flora.

II. **Execution/compliance**

A. General considerations

1. Natural or artificial fingernails are kept

short to facilitate thorough cleaning underneath them and to prevent glove tears.
2. All jewelry and ornaments are removed from the hands and wrists if they interfere with glove use.
3. Sinks with electronic, foot, or knee action faucet controls are provided for asepsis and ease of function.
4. The preferred method for hand hygiene depends on the type of procedure to be performed, the degree of contamination, and the desired persistence of antimicrobial action on the skin.

B. Routine handwash
1. Removes soil and transient microorganisms
2. Acceptable method prior to performing physical examinations and nonsurgical procedures
3. Technique and products
   a. Hands are wetted under warm running water
   b. Nonantimicrobial (i.e., plain) soap is applied
   c. Hands are rubbed together vigorously for 15 seconds to work-up lather
   d. Fingernails are cleaned using the fingernails on the opposite hand
   e. Soap is rinsed off with the hands held under warm running water
   f. Hands are dried with disposable paper towels

C. Antiseptic handwash
1. Removes or destroys transient microorganisms and reduces resident flora
2. Acceptable method prior to performing physical examinations and nonsurgical procedures
3. Technique and products
   a. Hands are wetted under warm running water
   b. Antimicrobial soap (e.g., chlorhexidine, povidone iodine - 5 to 10% formulations) is applied
   c. Hands are rubbed together vigorously for 15 seconds to work-up lather
   d. Fingernails are cleaned using the fingernails on the opposite hand
   e. Soap is rinsed off with the hands held under warm running water
   f. Hands are dried with disposable paper towels

D. Antiseptic hand rub (to be used only when there is no visible soil on hands)
1. Removes or destroys transient microorganisms and reduces resident flora
2. Acceptable method prior to performing physical examinations and nonsurgical procedures
3. Technique and products
   a. Hands are rubbed together vigorously with an alcohol-based hand-rub product until dry
      i. Containing 60 to 95 % ethanol or isopropanol alcohol
      ii. Alcohol-based preparations containing 0.5% to 1% chlorhexidine gluconate have persistent activity

E. Surgical antisepsis
1. Removes or destroys transient microorganisms and reduces resident flora (persistent effect)
2. Acceptable method prior to performing surgical procedures
3. Option #1
   a. Technique and products
      i. Hands are wetted under warm running water
      ii. Antimicrobial soap (e.g., chlorhexidine, povidone iodine - 5 to 10% formulations povidone iodine - 5 to 10%, formulations) is applied
      iii. Hands are rubbed together vigorously for 2 to 6 minutes to work-up lather
      iv. Fingernails are cleaned using the fingernails on the opposite hand
      v. Soap is rinsed off with the hands held under warm running water
      vi. Hands are dried with disposable paper towels
4. Option #2
   a. Technique and products
      i. Hands are wetted under warm running water
      ii. Nonantimicrobial (i.e., plain) soap is applied
      iii. Hands are rubbed together vigorously for 15 seconds to work-up lather
      iv. Fingernails are cleaned using the fingernails on the opposite hand
      v. Soap is rinsed off with the hands held under warm running water.

vi. Hands are dried with disposable paper towels.
vii. Hands and forearms are rubbed with an alcohol-based hand-rub product (containing 60 to 95 % ethanol or isopropanol alcohol; alcohol-based preparations containing 0.5% to 1% chlorhexidine gluconate have persistent activity) until the hands and forearms are dry.

F. Hand hygiene products are stored and dispensed according to manufacturers' directions.

Engineering and Work-practice Controls

Engineering and work-practice controls shall be implemented to prevent or reduce the risk of exposure to blood and OPIM and to promote safer behavior in the workplace.

I. **Background**

The unique nature of oral healthcare settings, dental procedures, and instrumentation require specific strategies to prevent the transmission of HAIs. Engineering and work-practice controls are intended to eliminate or isolate hazards and promote safer behavior in the workplace. Engineering controls take advantage of available technology to eliminate or isolate biohazards (blood or OPIM). When engineering controls are not available or are not practical, work-practice controls are implemented.

The direct patient care setting, i.e., the dental treatment room (DTR), is central to the delivery of oral healthcare, but there are other environments within oral healthcare settings that support the delivery of clinical services, i.e., dental radiography and dental laboratory facilities. While the following recommendations primarily relate to non-surgical dental specialty areas, they are sufficiently flexible to serve as a template for developing and implementing practice-specific infection control strategies.

II. **Execution/Compliance**

A. General considerations

1. Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where blood or OPIM may be present.
2. Food and drink are not kept in refrigerators, freezers, or cabinets or on shelves, countertops, or benchtops in work areas where blood or OPIM may be present.
3. All items used in patient care should be stored in closed cabinets or drawers. Mobile carts used for patient care should not be cluttered with excess materials.
4. Bulk items should be covered to prevent contamination and caution should be exercised when retrieving such items to ensure that the remaining items are not contaminated.
5. Begin each day with a routine handwash from fingertips to the wrist.
6. Use water that meets Environmental Protection Agency (EPA) regulatory standards, i.e., water containing <500 colony forming units (CFUs/mL of heterotrophic bacteria, for handwashing and as a coolant/irrigant for nonsurgical procedures.
   a. If using water bottles, fill dental unit water bottle according to manufacturer's recommendations. Add continuous-use dental unit waterline (DUWL) cleaning product if indicated. Note: Follow dental unit and water bottle manufacturer's instructions for products and protocols for maintenance and monitoring DUWL quality.

B. DTR infection control

1. Preparation
   a. Barrier protection: place protective plastic covers on clinical contact surfaces such as headrests, dental unit control switches, air and water line hoses, light handles, chairside light curing unit, and other hard-to-clean areas and equipment.
   b. Have appropriate instrument packs and supplies ready to begin treatment. This includes all necessary PPE (gloves, masks, eye protection, etc.) for the provider, assistant and the patient.
   c. Check all sterilized instrument packs and packages to ensure they are intact and the external chemical indicator has changed to the appropriate color.

i. Do not open packs in advance of the patient's arrival.

2. Treatment
   a. Seat the patient.
   b. Provide the patient with safety glasses.
   c. Open sterile instrument trays, pack(s) or cassettes with clean, ungloved hands and without directly touching the contents.
      i. Observe internal indicator strip(s) for color change.
      ii. Leave wrapping material underneath as a barrier for the work surface.
   d. Perform hand hygiene, don gloves and other PPE.
      i. Sterile gloves are used for invasive surgical procedures.
   e. Connect hand pieces, air and water syringes, saliva ejector, and high-volume evacuation tips.
   f. Use pre-sterilized burs and files, or manufacturer's pre-packaged single-use burs.
   g. Use expandable items, such as cotton and gauze products that have been sterilized (within instrument packs or individual packages, such as paper or plastic peel pouches).
   h. Preprocedural and intraprocedural precautions for patient treatment
      i. All procedures are performed in such a manner as to minimize splashing, spraying, spattering, and the generation of droplets (aerosols).
      ii. Prior to such dental procedures, patients may rinse with chlorhexidine gluconate-, essential oil-, or povidone iodine-containing mouthwash.
      iii. Use rubber dental dam, high volume evacuator (HVE) and other protective barriers, engineering and work practice controls wherever possible.
   i. Use one handed "scoop" technique or a recapping safety device to recap anesthetic needles.
   j. Use the unit dose concept for dispensing restorative and other dental materials.
      i. If additional material is needed during treatment use aseptic technique to retrieve needed items (e.g., sterile cotton forceps or pliers, an over-glove barrier, or remove gloves and perform hand hygiene).
   k. Complete charting and computer entries after removing gloves and performing hand hygiene.
   l. Remove PPE and perform hand hygiene before leaving the treatment area.
   m. Wear appropriate attire outside the DTR, e.g., a clean lab coat when exiting DTR to conduct business elsewhere in the clinic or administrative spaces.
3. DTR turn-around procedures between patients
   a. Wear heavy-duty utility gloves and other PPE while handling contaminated instruments and cleaning contaminated surfaces.
   b. Place all disposable sharps in designated sharps container in the DTR.
   c. Dispose of all non-sharp, regulated medical waste following local policy.
   d. Place instruments in cassette tray (or properly labeled and approved container) for transport to the central sterilization room (CSR).
   e. Flush water and air lines for 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 and water syringes).
   f. Remove dental hand piece(s), including slow speed hand piece motors, and other intraoral instruments that can be removed from air and waterline couplings of dental units.
   g. Follow manufacturer's instructions for cleaning, lubrication, and sterilization of hand pieces and other intraoral instruments and devices removed from dental units.
   h. Remove and dispose of all disposable barriers.
   i. Clean and disinfect clinical contact surfaces that were not barrier protected with an EPA-registered hospital disinfectant with a

tuberculocidal claim (i.e., intermediate-level disinfectant).
   j. Remove gloves and perform hand hygiene.
   k. Don a fresh pair of gloves and transport instrument trays, packs, and cassettes to the receiving side of CSR or another designated holding space.
   l. Return to the DTR without touching any surfaces while enroute to remove PPE and perform hand hygiene.
   m. Prepare the DTR for the next patient.
4. Securing the DTR at the end of the day
   a. Wear appropriate gloves, face protection, and eye protection while cleaning contaminated surfaces.
   b. Clean and disinfect all contact surfaces, dental unit surfaces, and countertops with an EPA-registered disinfectant.
      i. To facilitate cleaning, treatment rooms should be free of all unnecessary equipment and supplies.
   c. Empty and clean amalgam trap container per dental unit manufacturer's recommendations.
   d. Flush and clean the HVE system per manufacturer's recommendations.
   e. Flush and clean each water line and suction hoses, follow manufacturer's instructions if waterline treatment products are used. Follow manufacturer's instructions for cleaning and maintenance of dental unit water bottles.
   f. Dispose of regulated waste per local policy.
   g. Clean and disinfect sink area.
   h. Ensure only DTR cleaning materials and no patient care items are stored under the sink.
   i. Inventory consumable unit dose packs, replenish as necessary per local policy. Note: Routinely check for expiration dates on solutions, materials and dispensable items per command policy.
   j. Remove PPE (clean and disinfect reusable PPE) and perform hand hygiene.

C. Disposition of single use patient-care items
1. Unregulated waste
   a. Generally, blood and/or saliva-tinted items (e.g., clinic gowns, gloves, and patient bibs) are not considered regulated waste and are placed in the regular trash receptacle.
2. Regulated waste
   a. Regulated waste is disposed of according to the requirements established by local and state environmental agencies.
   b. Disposable sharps (e.g., needles, local anesthetic cartridges, orthodontic wires, scalpel blades, suture needles, endodontic file, and broken instruments) are removed from cassettes, tray sets, or packs; and are placed in a rigid, puncture-resistant, leak-proof container with a secure lid for storage and transportation.
   c. Other regulated waste (e.g., items that drip when held vertically, release fluid when compressed, have dried on fluid that could flake off in transit) is placed in small biohazard bag and are disposed of into a centralized Regulated Waste Receptacle after each appointment.
   d. Biohazard labels (fluorescent orange or orange red, with lettering or symbols in a contrasting color) are affixed as close as feasible to containers of regulated waste by string, wire, adhesive, or other method to prevent their loss or unintentional removal.
   e. Regulated waste that has been decontaminated is not labeled or color-coded and is placed in the regular trash receptacle.

D. Disposition of reusable patient-care items
1. Immediately, or as soon as possible after use, all cassettes, tray sets, or packs containing contaminated instruments and reusable sharps are transported to the central instrument processing area in a manner that minimizes the risk of exposure to persons and the environment.
2. Receiving, cleaning, and decontamination
   a. Items are first cleaned with a hands-free process using an ultrasonic

system with a strainer-type basket.
   b. Wearing heavy-duty gloves, protective eyewear, and protective clothing the instruments are visually inspected for residual debris and damage.
   c. Wearing heavy-duty gloves, protective eyewear, and protective clothing the instruments are visually inspected for residual debris and damage.
   d. Residual blood, OPIM, cement and other visible debris are removed using a long-handled brush.
   e. Damaged instruments are replaced.
3. Non-critical items, i.e., items that contact only intact skin during their intended use.
   a. Disinfected with an EPA-registered intermediate-level hospital disinfectant with tuberculocidal claim (e.g., products containing chlorine, quaternary ammonium compounds with alcohol, phenolics, or iodophors).
4. Semi-critical items, i.e., items that touch, but do not penetrate, nonintact skin or mucous membranes; and critical items, i.e., items that penetrate soft tissues and bone during their intended use.
   a. Heat-sensitive items are sterilized with ethylene oxide or an FDA-registered sterilant (e.g., products containing glutaraldehyde, glutaraldehyde with phenol, hydrogen peroxide, or hydrogen peroxide with peracetic acid).
      i. After sterilization, all items are rinsed with sterile water to remove toxic or irritating residues.
      ii. Handled using sterile gloves and dried with sterile towels.
      iii. Delivered to the point of use in an aseptic manner.
   b. Heat-tolerant items are heat sterilized in an FDA cleared device.
      i. Preparation and packaging
         a. The cleaned and inspected instruments are assembled into cassettes, tray sets, or packs with hinged instruments open and unlocked.
         b. An internal chemical indicator is placed in each cassette, tray set, or pack.
         c. If the internal indicator is not visible from the outside of the wrapped and sealed package, an external chemical indicator is placed on each cassette, trays set, or pack to monitor sterilization process.
      c. Sterilization
         i. The sterilizer is loaded according to manufacturer's recommendation, in single layers or in racks to increase circulation around the instruments.
         ii. The cycle time, temperature, and pressure are set according to the manufacturer's recommendation.
         iii. Upon completion of the sterilization cycle, the packages are allowed to dry and cool before removing them from the sterilizer.
      d. Storage
         i. Sterilized items are stored in a clean, enclosed, and dry environment.
         ii. Sterilized packages remain sterile indefinitely, unless an event causes it to become contaminated (e.g., torn or wet packages).
      e. Monitoring of the sterilization process
         i. Mechanical - Confirm cycle time, temperature, and pressure by observing the gauges or displays on the sterilizer for each load.
         ii. Chemical - Note color changes of time and temperature sensitive internal and external chemical indicators, which reflect physical conditions during the sterilization process.
         iii. Biological - Monitor weekly the sterilization process by an appropriate spore test (according to manufacturer's time, pressure, and temperature recommendation).
            a. Spore strip or vial is placed inside the cassette, tray set, or pack.
            b. Cassette, tray set, or pack containing the biological indicator is placed in the center of the load (hardest area to penetrate).
            c. A control strip (which is not heat processed) is used as a control with each spore test.

d. A record is maintained of the weekly spore testing results.

iv. Additional biological monitoring is performed whenever there is a change in the packaging process, following equipment repair, and when training new employees.

v. Quality assurance procedures following a positive mechanical, chemical, or biological monitoring test.

a. Secure sterilizer from further use.
b. Make proper log entries.
c. Review operating procedures.
d. Take corrective action (repair or replacement).
e. Retest sterilizer using biological monitors (CDC recommends to retest 3 times using an empty chamber).
f. Loads dating back to the last negative biological indicator should be recalled, rewrapped, and resterilized.

E. Handpieces

1. All handpieces (i.e., high- and slow-speed motors, nose cones, contra-angles, motor-to-angle adapters and prophylaxis angles), unless disposable, are heat sterilized between patients.

a. Cleaning, sterilization and maintenance procedures described by the handpiece manufacturer are followed to ensure proper sterilization and maximum longevity for the handpiece. For most handpieces, the following generic protocol is appropriate:

i. Before removing handpiece from hose the lines are flushed for 20-30 seconds.

ii. Handpiece (with the bur removed) is scrubbed thoroughly under running water, rinsed thoroughly, and dried.

iii. Handpiece requiring pre-sterilization lubrication is lubricated.

iv. After lubrication, the handpiece is reattached to hose (with bur or blank reinserted) and the rheostat is activated to remove excess lubricant. – CRITICAL

v. Fiberoptics are cleaned with a cotton swab, dampened with isopropyl alcohol to remove excess lubricant.

vi. Handpieces are packaged and sterilized in a steam autoclave.

F. Saliva ejectors

1. Prevent backflow in low-volume suction lines.

a. Do not position the section of the suction tubing holding the tip above the patient's mouth.
b. Instruct patient not to create a seal around the suction tip.
c. Avoid the simultaneous use of other evacuation devices, i.e., high-volume suction.

G. Dental radiography

1. Preparing the operatory.

a. Cover clinical contact areas with a protective barrier before seating the patient.

2. Exposing and processing films.

a. Hand hygiene and PPE before initiating the process.
b. Use disposable or heat-sterilized film-holding and positioning devices.
c. Use FDA-cleared film barrier pouches.

i. After exposure, remove the film packet from pouch and place in a clean container.

a. Transport/handle exposed radiographs in an aseptic manner to prevent contamination of developing equipment.

3. Digital radiography sensors and other high-technology instruments are cleaned and heat-sterilized or high-level-disinfected according to manufacturer's recommendation.

4. Panoramic radiography.

a. Place disposable plastic cover over bite guide before the patient is positioned in the machine.

i. If no barrier is used, use a sterile bite guard.

H. Oral surgical procedures

1. Perform surgical hand asepsis.
2. Use appropriate PPE.

a. When using laser or electrosurgical units, the thermal destruction of tissue

creates laser plumes or surgical smoke, which may contain aerosolized infectious material.
3. Use only sterile saline or sterile water as a coolant/irrigant.
    a. Use specifically designed irrigating devices (e.g., bulb syringe, single-use disposable products, or sterilizable tubing).

I. Biopsy specimens
1. Specimens are placed in leak-proof, puncture-resistant container with a secure lid for storage and transportation.
2. If the outside of the container becomes visibly contaminated, it is cleaned and disinfected or placed in an impervious bag.
3. The container is labeled with the biohazard symbol.

J. Extracted teeth
1. Potentially infectious and are disposed as regulated waste.
2. Teeth sent to the laboratory for shade and size comparisons.
    a. Cleaned and disinfected with an EPA-registered, intermediate-level hospital disinfectant with tuberculocidal claim (e.g., products containing chlorine, quaternary ammonium compounds with alcohol, phenolics, or iodophors).
3. Teeth containing dental amalgam are disposed of according to local and state regulations.
4. Extracted teeth can be disinfected and returned to patients, upon request.
5. Extracted teeth in an educational setting.
    a. The teeth are cleaned of visible blood and gross debris and maintained in a hydrated state (e.g., water or saline) in a well-constructed closed container.
    b. Before clinical exercises or study, the teeth are heat-sterilized (autoclave cycle for 40 minutes).
        i. Teeth with amalgam restorations are disinfected by immersion in 10% formalin solution for 2 weeks.
            a. Review MSDS for occupational safety and health concerns.

K. Laboratory asepsis
1. Environmental surfaces are barrier-protected or cleaned and disinfected.
2. Use PPE when handling items received in the laboratory until they have been decontaminated.
    a. Impressions, prostheses, and other devices.
        i. Rinse under running tap water to remove blood and OPIM.
        ii. Disinfect with an EPA-registered intermediate-level hospital disinfectant with tuberculocidal claim (e.g., products containing chlorine, quaternary ammonium compounds with alcohol, phenolics, or iodophors).
        iii. Thoroughly rinse under running water before handling.
    b. Laboratory case is sent off-site.
        i. Written information is provided regarding the method used to clean and disinfect the material (i.e., type of disinfectant used and exposure time).
    c. Burs, polishing points, rag wheels, or laboratory knives.
        i. Heat-sterilized, disinfected, or discarded between cases following manufacturer's recommendations.
    d. Metal impression trays and face bow forks are:
        i. Heat sterilized between patients.
    e. Articulators, case pans, lathes, pressure pots, and water baths
        i. Cleaned and disinfected between patients according to manufacturer's recommendation.
    f. Unless waste generated in the laboratory falls under the category of regulated waste, it is discarded with general waste.

L. Dental records
1. Charts are notated and radiographs viewed before gloving or after the gloves are removed and the hands are washed, unless cover gloves are worn.

Environmental Infection Control

Appropriate environmental infection control measures shall be implemented to keep the oral health care facility in a clean and sanitary condition.

I. **Background**

Environmental surfaces such as walls, floors, and sinks do not appear to contribute to significant cross-contamination in the oral healthcare setting. Other surfaces that are frequently touched may serve as reservoirs for microbial contamination and are categorized as clinical contact surfaces (e.g., light handles, switches, radiographic equipment, dental chairside computers, reusable containers of dental materials, drawer handles, faucet handles, countertops, pens, telephones, and doorknobs) and housekeeping surfaces (e.g., walls, window drapes, other vertical surfaces, floors, sinks, carpeting, and cloth furnishing).

II. **Execution/Compliance**
   A. Clinical contact surfaces
      1. To prevent contamination, use materials impervious to moisture (e.g., plastic wrap, bags, sheets, tubing, and plastic-backed paper).
         a. Coverings are removed and discarded between patients.
            i. After removing the barrier, the surfaces are examined for visible soil.
            ii. Surfaces with visible soil are cleaned and disinfected with an EPA-registered intermediate-level hospital disinfectant with tuberculocidal claim, e.g., products containing chlorine, quaternary ammonium compounds with alcohol, phenolics, or iodophors.
            iii. After removing gloves and performing hand hygiene, clean barriers are placed before the next patient.
         b. If barriers are not used, wearing appropriate PPE, the surfaces are cleaned and disinfected between patients using an EPA-registered intermediate-level hospital disinfectant with tuberculocidal claim, e.g., products containing chlorine, quaternary ammonium compounds with alcohol, phenolics, or iodophors.
         c. At the end of each day, general cleaning and disinfection of clinical contact surfaces are performed regardless of barrier protection.
            i. To facilitate daily cleaning, treatment areas are kept free of unnecessary equipment and supplies.
   B. Housekeeping surfaces
      1. Unless visibly contaminated, cleaning walls, window drapes, and other vertical surfaces is unnecessary.
         a. Floors and sinks are cleaned regularly with a detergent and water or an EPA-registered hospital disinfectant/detergent designed for general housekeeping purpose.
         b. Carpeting and cloth furnishing cannot be reliably disinfected and are avoided in patient care, laboratory, or instruments processing areas.
   C. Cleaning and disinfection strategies for spills and spatter (blood or OPIM)
      1. Wearing appropriate PPE, visible organic material is removed using disposable paper towels, which are then discarded in a leak-proof and appropriately labeled container.
      2. The contaminated surface is cleaned with a detergent and water and disinfected with an EPA-registered intermediate-level hospital disinfectant with a tuberculocidal claim.

Post-exposure Evaluation and Follow-up

Following an exposure to blood or OPIM, OHCPs shall immediately undergo a confidential medical evaluation and subsequent follow-up by a qualified health-care professional in accordance with current recommendations of the U.S. Public Health Service.

I. **Background**
Exposure to blood or OPIM, including saliva (even when blood is not visible), must be considered potentially infectious. Consequently, post-exposure evaluation and follow-up is a critical element of a comprehensive infection control/exposure control protocol.

II. **Execution/Compliance**
   A. Immediately after an exposure incident
      1. Wash injuries with soap and water and apply an antiseptic agent (if available).
      2. Report the exposure incident immediately to the Office Infection-control Officer or other designated person.
      3. Complete the Uniform Needlestick and

Sharp Object Injury Report Form.

B. Within 2 hours of exposure and with the consent of the OHCP, arrangements are made for a post-exposure evaluation by a physician who will be provided with the following information:
   1. A copy of the completed Uniform Needlestick and Sharp Object Injury Report Form.
   2. A copy of the OHCPs Medical Record (see Figure 1. below).
   3. Any information available about the source individual.
      a. With the source person's consent, the source person's blood is tested as soon as feasible to determine hepatitis B and C virus, and HIV infectivity.
      b. Results of the source person's testing are made available to the OHCP
      c. The OHCP is informed of the applicable laws and regulations concerning the disclosure of the identity and infectious status of the

UNIFORM NEEDLESTICK AND SHARP OBJECT INJURY REPORT

Name: _____
Incident Report #:_____
Job Category:
- o DDS/DMD (attending/staff)
- o DDS/DMD (intern/resident)
- o DS I
- o DS II
- o DS III
- o DS IV
- o RDH (attending/staff)
- o DH I
- o DH II
- o DA
- o Dental technician
- o Sterilization personnel
- o Housekeeping/ laundry worker
- o Other_____

Where did injury occur?
- o Treatment room
- o Outside treatment room (hallway, etc)
- o Emergency clinic
- o Operating room
- o Procedure room (x-ray, sterilization, etc)
- o Dental laboratory
- o Pathology
- o Other_____

Was the source patient identified?
- o Yes
- o No

Was the injured person the original user of the sharp item?
- o Yes
- o No

Was the sharp item:
- o Contaminated (known exposure to patient or contaminated equipment)
- o Uncontaminated (no known exposure to patient or contaminated equipment)
- o Unknown

For what purpose was the sharp item originally used?
- o Unknown
- o Injection (syringe)
- o To connect IV line (intermittent IV/piggyback/IV infusion)
- o To start IV (IV catheter or butterfly-type needle)
- o To draw a venous blood sample
- o To obtain a body fluid or tissue sample
- o Fingerstick
- o Suturing
- o Cutting (surgery)
- o Electrocautery
- o To contain a specimen or pharmaceutical (glass items, local anesthetic cartridge)
- o Other_____

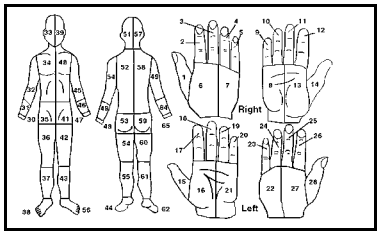
What device or item caused the injury?
_____

When and how did the injury occur?
- o Before use of item (item broke or slipped, assembling device, etc)
- o During use of item (item slipped, patient jarred item, etc)
- o Between steps of a multistep procedure (between incremental injections, passing instrument, etc)
- o Disassembling device or equipment
- o In preparation for reuse or reusable instrument (sorting, disinfection, sterilization, etc)
- o While recapping a used needle
- o Withdrawing a needle from rubber or other resistant material (rubber stopper, IV port, etc)
- o Other after use, before disposal (in transit to disposal, cleaning up, left on table, floor, other inappropriate place)
- o From item left on or near disposal container
- o While putting the item into the disposal container
- o After disposal, stuck be item protruding from opening of disposal container
- o Item pierced side of disposal container
- o After disposal, item protruded from trash bag or inappropriate waste container
- o Other_____

If the item caused the injury was a needle, was it a "safety design" with a shield, recessed, or retractable needle?
- o Yes
- o No

Was the injury:
- o Superficial (little or no bleeding)
- o Moderate (skin punctured, some bleeding)
- o Severe (deep stick/cut, or profuse bleeding)

Mark the location of the injury:



Describe the circumstances leading to this injury:
_____
_____
_____
_____

Figure 1. Uniform Needlestick and Sharp Object Injury Report Form.

source person.

4. Post-exposure management and prophylaxis.
   a. After percutaneous, mucous membrane, or non-intact skin exposure to blood or OPIM, the consulting physician will initiate post-exposure management (prophylaxis) according to the latest CDC recommendations.
   b. The consulting physician's written report is obtained within 15 days of the post-exposure evaluation and is made available to the OHCP.
5. A medical record is maintained on every OHCP, which includes the following information:
   a. Vaccination status
      i. Dates of vaccinations (where appropriate or available).
      ii. Evidence of immunity (where applicable or available).
      iii. Documentation relative to the individual's inability to receive the vaccinations required or highly recommended.
      iv. A signed copy of the mandatory hepatitis B vaccination declaration form (See II. Vaccinations).
   b. A copy of all results of examinations, medical testing, and other post-exposure follow-up procedures.
   c. The medical record is available for examination by the OHCP and a copy is provided upon request.
      i. The content is confidential and is not disclosed to anyone, without the OHCP's expressed written consent, except as require by law.

Transmission-based Precautions

To prevent the transmission of *Mycobacterium tuberculosis* (MBT), transmission-based precautions based on a three-level hierarchy of administrative, environmental, and respiratory-protection controls are to be implemented.

I. **Background**
The primary risk of exposure to ***Mycobacterium tuberculosis*** (MBT) in the oral healthcare setting is contact with patients with undiagnosed or unsuspected infectious tuberculous (TB) disease. A high index of suspicion and rapid implementation of precautions are essential to prevent and interrupt the transmission of MBT.

II. **Execution/Compliance**
   A. Identification of patients with suspected or confirmed TB disease.
      1. When reviewing the medical histories (initial and periodic), including a review of organ systems, all patients are routinely asked about a history of
         a. Exposure to TB
         b. Latent TB infection
         c. TB disease
         d. Medical conditions that increase the risk of TB disease (e.g., HIV infection)
         e. Signs and symptoms of TB disease
            i. Chronic ill health, coughing with hemoptysis, low-grade fever, weight loss, and night sweats.
   B. Isolation of patients with suspected or confirmed TB disease from other patients and OHCPs
      1. Patients are not kept in the office setting any longer than required
         a. While in the office, these patients are promptly isolated from other patients and OHCPs
         b. They are instructed to observe strict respiratory hygiene and cough etiquette procedures
   C. Referral of patients with suspected or confirmed TB disease for medical evaluation and/or required urgent dental care
      1. Routine dental care is postponed until a physician confirms that the patient does not have infectious TB or until it is confirmed that the patient is no longer infectious.
      2. Patients requiring urgent dental care are referred to an oral healthcare facility that meets the requirements for appropriate environmental and respiratory-protection controls.
         a. Environmental control
            i. Airborne infection isolation (AII) room
         b. Respiratory-protection control
            i. Disposable, non-powered, air-purifying, particulate-filter respirators

a. National Institute for Occupational Safety and Health (NIOSH)-certified particulate-filter respirators (N95, N99, or N100) are used, which have the ability to filter <.3 µm particles with a filtering efficiency of 95, 99, and 99.7%, respectively.

Respiratory Hygiene/Cough Etiquette

To prevent the transmission of respiratory tract infections, the implementation of Respiratory Hygiene/Cough Etiquette applies broadly to all persons with signs and symptoms of respiratory tract infection who enter the oral healthcare setting.

I. **Background**
These recommendations evolved from observations during the SARS epidemic that failure to implement basic source control measure with patients, visitors, and healthcare personnel with signs and symptoms of respiratory tract infection may have contributed to SARS coronavirus (SARS-CoV) transmission.

II. **Execution/ Compliance**
- A. Applies to any person with signs of illness when entering the oral healthcare facility, i.e., cough, congestion, rhinorrhea, or increased production of respiratory secretions.
  1. The absence of fever does not always exclude a respiratory infection.
- B. Elements of Respiratory Hygiene/Cough Etiquette
  1. Education of oral healthcare workers (OHCWs), patients, and visitors.
  2. Posted signs, in language(s) appropriate to the population served, with instructions to patients and accompanying family members and friends.
  3. Source control measures
     a. Covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues.
     b. Using a surgical mask on the coughing person when tolerated.
     c. Hand hygiene after contact with respiratory secretions.
     d. Spatial separation, ideally >3 feet, of persons with respiratory infections in common waiting areas.
  4. OHCPs observe Droplet Precautions
     i. Wear a mask and perform appropriate hand hygiene when examining and caring for patients with signs and symptoms of a respiratory infection.

Medical Conditions and Work Restrictions

Oral health care facilities shall have written policies to protect patients and OHCWs with latex allergies, to protect OHCWs who are susceptible to opportunistic infections, and to protect patients from OHCWs with transmissible infections.

I. **Background**
OHCPs and patients may become susceptible to latex-related adverse reactions, OHCPs may also develop acute or chronic conditions, which may predispose them to opportunistic infections, or OHCPs may acquire potentially transmissible infections. Such individuals should discuss the problem with their personal physician or other qualified authority to determine if the condition might affect their ability to safely perform their duties.

II. **Execution/ Compliance**
- A. Minimize latex allergy-related health problems among OHCPs and patients.
  1. Reduce exposure to latex-containing materials by substituting non-latex products when appropriate and using appropriate work practice controls.
  2. Train and educate OHCPs to recognize signs and symptoms of latex-related adverse effects, i.e.,
     a. Allergic contact dermatitis
     b. Urticaria
     c. Angioedema
     d. Allergic rhinitis
     e. Anaphylaxis
  3. Monitor signs and symptoms of latex sensitivity among OHCWs and patients.
  4. Refer OHCP with signs and symptoms suggestive of latex allergy to a physician to confirm diagnosis.

B. Minimize the exposure of OHCPs with acute or chronic diseases to patients who have been diagnosed with a transmissible infectious disease.
   1. Consult with personal physician
      a. Determine if condition(s) might affect ability to safely perform duties.

C. Minimize the exposure of patients to OHCPs who have been exposed to or have been diagnosed with an infectious disease (Tables 1, 2, 3, and 4).
   1. Restriction criteria

Oral healthcare-associated procedures according to the level of risk for bloodborne pathogen transmission.

- Category I: Procedures with minimal risk of bloodborne pathogen transmission
  - History-taking
  - Extraoral physical examination
  - Intraoral examination
    - Including the use of a tongue depressor, mirror, explorer, or a periodontal probe
  - Routine preventive dental procedures - not requiring the administration of local anesthesia
    - Application of sealants or topical fluoride
    - Prophylaxis – not to include subgingival scaling with a hand instrument
    - Orthodontic procedures
    - Prosthetic procedures
      - Fabrication of complete dentures
    - Hands-off supervision of surgical procedures

- Category II: Procedures for which bloodborne pathogen transmission is theoretically possible but unlikely
  - Dental procedures requiring the administration of local anesthesia
    - Operative, endodontic, and prosthetic procedures and periodontal scaling and root planning
      - Use of ultrasonic instruments greatly reduce or eliminate the risk of percutaneous injury to the provider
      - If significant physical force with hand instruments is anticipated to be necessary, scaling and root planning and other Category II procedures could reasonably classified as Category III
    - Minor surgical procedures
      - Simple tooth extraction not requiring excessive force
      - Soft tissue flap procedures
      - Minor soft tissue biopsy
      - Incision and drainage of an abscess
  - Insertion of, maintenance of, and drug administration into arterial and central venous lines

- Category III: Procedures for which there is a definite risk of bloodborne pathogen transmission or that have been classified as "exposure prone"
  - General oral surgery
    - Surgical extractions
      - Removal of an erupted or unerupted tooth requiring elevation of a mucoperiosteal flap, removal of bone, or sectioning of tooth and suturing
    - Apicoectomy and root amputation
    - Periodontal curettage, gingivectomy, and mucogingival and osseous surgery
    - Alveoplasty and alveoectomy
    - Endosseous implant surgery
  - Open extensive head and neck surgery involving bone
  - Trauma surgery, including open head injuries, facial fracture reductions, and extensive soft issue trauma
  - Any open surgical procedure with a duration of more than 3 hours, probably necessitating glove change

Table 1. Work Restrictions: HAV, HBV, HCV, and HIV Infections.

Infectious state		Restrictions
HAV	Acute infection	Restrict from duty for seven days after onset of jaundice.

HBV and HCV	• Circulating viral burden $<10^4$ GE/mL
	  ○ Category I, II, and III procedures – no restrictions as long as the infected healthcare provider:
	  • no evidence of having transmitted infection to patients
	  • obtained advice from an Expert Review Panel about continued practice
	  • follow-up twice a year to demonstrate the maintenance of a viral burden $<10^4$ GE/mL
	  • follow-up by a personal physician who has expertise in the management of HBV infection and who is allowed to communicate with the Expert Review Panel about the infected provider's clinical status
	  • consulted with an expert about optimal infection control procedures and strictly adheres to the recommended procedures
	  • routine use of double gloving and frequent glove changes during procedures (particularly when performing tasks known to compromise glove integrity) for all instances in patient care for which gloving is recommended
	  • agreed to and signs a contract or letter from the Expert Review Panel that characterizes the infected providers responsibilities
	• Circulating viral burden =104 GE/mL
	  ○ Category I and II procedures – no restrictions as long as the infected provider meets the criteria noted above for infected providers with a viral burden of <104 GE/mL
	  • Category III procedures – these procedures are permissible only when the viral burden is <104 GE/mL	

HIV	• Circulating viral burden $<5 \times 10^2$ GE/mL
	  ○ Category I, II, and III procedures – no restrictions as long as the infected healthcare provider:
	  • no evidence of having transmitted infection to patients
	  • obtained advice from an Expert Review Panel about continued practice
	  • follow-up twice a year to demonstrate the maintenance of a viral burden $<5 \times 10^2$ GE/mL
	  • follow-up by a personal physician who has expertise in the management of HIV infection and who is allowed to communicate with the Expert Review Panel about the infected provider's clinical status
	  • consulted with an expert about optimal infection control procedures and strictly adheres to the recommended procedures
	  • routine use of double gloving and frequent glove changes during procedures (particularly when performing tasks known to compromise glove integrity) for all instances in patient care for which gloving is recommended
	  • agreed to and signs a contract or letter from the Expert Review Panel that characterizes the infected providers responsibilities
	• Circulating viral burden $\geq 5 \times 10^2$ GE/mL
	  ○ Category I and II procedures – no restrictions as long as the infected provider meets the criteria noted above for infected providers with a viral burden of $<5 \times 10^2$ GE/mL
	  ○ Category III procedures – these procedures are permissible only when the viral burden is $<5 \times 10^2$ GE/mL	

Table 2. Work Restrictions: Measles, Mumps, and Rubella Infections.

Infectious state		Restrictions
Measles	Post-exposure Susceptible OHCP	Exclude from duty from the 5th day after first exposure through the 21st day after last exposure OR for 4 days after rash appears.
	Acute infection	Exclude from duty for 7 days after rash appears.
Mumps	Post-exposure Susceptible OHCP	Exclude from duty from the 12th day after first exposure through the 26th day after last exposure OR for 9 days after onset of parotitis.
	Acute infection	Exclude from duty for 7 days after onset of parotitis.
Rubella	Post-exposure Susceptible OHCP	Exclude from duty from the 7th day after first exposure through the 21st day after last exposure.
	Acute infection	Exclude from duty for 5 days after rash appears.

Table 3. Work Restrictions: Herpes Simplex and Varicella Infections.

Infectious state		Restrictions
Herpes simplex	Acute orofacial herpes	Evaluate the need to restrict from the care of patients at high-risk until lesions heal.
	Acute herpetic whitlow	Exclude from duty until lesions heal.
	Acute genital herpes	No Restrictions
Varicella (chicken pox)	Post-exposure Susceptible OHCP	Exclude from duty from the 10th day after first exposure through the 21st day after last exposure.
	Acute infection	Exclude from duty until all lesions dry and crust.
Varicella zoster (shingles)	Post-exposure Susceptible OHCP	Exclude from patient care from the 5th day after first exposure through the 21st day after last exposure.
	Acute infection Healthy OHCP	Cover lesions and restrict from the care of patients at high-risk until all lesions dry and crust.
	Acute infection Immunocompromised OHCP	Restrict from patient care until all lesions dry and crust.

Table 4. Work Restrictions: Respiratory Tract Infections.

Infectious state		Restrictions
Influenza and syncytial viruses	Acute infection with fever	Exclude from the care of patients at high-risk until acute symptoms resolve.
Group A *streptococci*	Acute infection	Restrict from duty until 24 hours after treatment is initiated.
Mycobacterium tuberculosis	PPD Positive	No Restrictions
	Acute infection	Exclude from duty until proven non-infectious.

a. Mode of transmission.
b. Period of infectivity.
c. Level of circulating viral burden.
d. Level of risk for the transmission of a pathogen in association with a procedure.

2. Procedure-related risk for bloodborne pathogen transmission.
3. Criteria for recommended clinical privileges:
   a. No evidence of having transmitted infection to patients.
   b. Obtained advice from an Expert Review Panel about continued practice.
   c. Follow-up twice a year to demonstrate the maintenance of an acceptable viral burden.
   d. Follow-up by personal physician with expertise in the management of infections with bloodborne pathogens.
   e. Consulted with an expert about and strictly adhere to optimal infection control procedures.
   f. Agreed to and signed a contract or letter from the Expert Review Panel that characterizes responsibilities.

Summary

Standard Precautions in combination with Transmission-based Precautions and Respiratory Hygiene/Cough Etiquette provide a hierarchy of preventive strategies to eliminate or minimize HAIs. This guideline is designed to provide practical information for an effective infection control program in oral healthcare settings.

Course Test Preview

To receive Continuing Education credit for this course, you must complete the online test. Please go to: *www.dentalcare.com/en-us/professional-education/ce-courses/ce342/start-test*

1. To prevent or minimize HAIs among OHCP and patients, oral healthcare facilities, like all healthcare facilities, are mandated to develop a written infection control/exposure control protocol predicated on a hierarchy of preventive strategies.

a. True
b. False

2. Which of the following statements, in reference to the mandated Infection Control/Exposure Control Protocol, are correct?

a. Standard Precautions (periodically expanded with new evidence-based elements) and Transmission-Based Precautions provide the fabric for an effective Infection Control/Exposure Control Protocol.
b. The office Infection Control/Exposure Control Protocol is predicated on the concept that blood and all other body fluids (secretions and excretions with the exception sweat) are potentially infectious.
c. The office Infection Control/Exposure Control Protocol is a hierarchy of preventive strategies designed to protect OHCPs and patients alike.
d. All of the above.

3. The information from which inferences can be drawn about the quality of infection control/exposure control practices includes _____.

a. Infection control/exposure control strategies should be appropriate for the oral healthcare setting.
b. As these strategies deviate from optimal design and implementation, the quality (value, outcome) of infection control/exposure control program decreases at an accelerated rate.
c. It is recommended that an Office Infection-Control Coordinator (OICC) be appointed with responsibility for the development and management of the office infection control/exposure control program.
d. The creation and maintenance of a safe work environment mandates the commitment and accountability of all OHCP.
e. All of the above.

4. The objectives of the education and training program are to educate OHCPs regarding _____.

a. the risk of healthcare-associated infections
b. preventive strategies
c. exposure management and follow-up
d. administrative controls
e. All of the above.

5. Principal prerequisites for cross-infection include a _____.

a. source or reservoir of infectious agents
b. susceptible host with a portal of entry receptive of the agent
c. mode of transmission for the agent
d. All of the above.

6. Pathogens may be transferred from the source to a host by contact transmission, i.e., direct or indirect contact transmission; or respiratory transmission, i.e., inhalation of droplets or droplet nuclei (airborne transmission).

a. True
b. False

7. **Pathogenic organisms of concern in the oral healthcare setting include _____.**
   a. HBV, HCV, HIV
   b. measles, mumps, and rubella viruses; herpes simplex virus and varicella zoster virus
   c. influenza and respiratory syncytial viruses; group A streptococci and Mycobacterium tuberculosis
   d. emerging pathogens such as MRSA and others
   e. All of the above.

8. **All of the following statements with respect to education and training are correct EXCEPT which one?**
   a. An education and training program is to be completed by all OHCPs prior to initial assignment to tasks and procedures in which exposure to blood and OPIM may occur and at least annually thereafter.
   b. An education and training program is to be scheduled during nonworking hours and the cost is to be borne by the OHCP.
   c. An education and training program is to be conducted by person(s) knowledgeable about the subject and the speaker is to provide an opportunity for interactive questions and answers.
   d. An individual training record is to be maintained on all OHCP for the most recent 3-year period.

9. **All of the following statements are correct in relation to hepatitis B vaccination EXCEPT which one?**
   a. Primary immunization with hepatitis B vaccine consists of a series of three intramuscular injections.
   b. Post-vaccination confirmation of seroconversion is mandated 1-2 months after the third dose.
   c. OHCP who fail to develop an adequate antibody response to the primary vaccination series, a second 3-dose vaccine series is recommended.
   d. If no antibody response occurs to the hepatitis B vaccination series, testing for HBsAg is strongly recommended.

10. **All of the following statements with respect to hepatitis B vaccination are true EXCEPT which one?**
   a. Hepatitis B vaccination is to be made available to all OHCP, without a history of prior immunization, at the time of initial assignment to tasks in which exposure to blood or OPIM may occur.
   b. If the hepatitis B vaccination series is declined, the OHCP must sign a copy of the Mandatory Hepatitis B Vaccination Declination Form.
   c. The U.S. Public Health Service recommends routine booster doses of the hepatitis B vaccine.
   d. Other vaccines highly recommended for all OHCP include influenza, measles, mumps, rubella, varicella, and pertussis.

11. **Personal protective equipment (PPE) is designed to protect the skin and mucous membranes (eyes, nose, and mouth) and respiratory epithelium of OHCP from exposure to a source or reservoir of pathogenic organisms by contact transmission, i.e., direct or indirect contact transmission; and respiratory transmission, i.e., inhalation of droplets or droplet nuclei (airborne transmission).**
   a. True
   b. False

12. **Which of the following statements are true regarding protective clothing?**
   a. Protective clothing is to be changed daily, when it becomes visibly soiled, and as soon as possible if penetrated by blood or OPIM.
   b. Protective clothing is removed before leaving the work area.
   c. Dirty protective clothing is to be placed in designated areas before leaving the work area.
   d. All of the above.

13. All of the following statements are true regarding gloves EXCEPT which one?

a. To reduce the risk of latex-related allergies, only powder-free, low-allergen latex gloves, or non-latex (nitrile, vinyl) gloves should be used.
b. Gloves should not be changed when torn or punctured until treatment of the patient is completed.
c. Gloves may not be washed because it can lead to the formation of glove micro-punctures (wicking) and subsequent hand contamination.
d. Double gloving is acceptable for extensive oral surgical procedures.

14. Which of the following statements are true regarding facemasks?

a. Surgical masks, which cover both the nose and the mouth, must be worn by all OHCPs during the clinical process likely to generate splash, spatter, and aerosols.
b. Masks should be changed whenever visibly soiled.
c. When lengthy procedures are performed and the facemask becomes wet, the facemask should be changed as soon as possible.
d. All of the above.

15. Protective eyewear with solid side shields or a face shield must be worn by OHCP and patients during the clinical process likely to generate splash, splatter, and aerosols.

a. True
b. False

16. The technique of wetting the hands under warm running water, applying an antimicrobial soap (e.g., chlorhexidine, iodine and iodophors, chloroxylenol, or triclosan), rubbing the hands together vigorously for 15 seconds to work-up a lather, using the fingernails to clean the fingernails on the opposing hand, rinsing the soap off with the hands held under warm running water, and drying the hands with a disposable paper towel is _____.

a. routine handwashing
b. antiseptic handwashing
c. antiseptic hand rub
d. surgical asepsis

17. All of the following statements are correct with respect to preparing the DTR for the patient except which one?

a. Place protective plastic covers on clinical contact surfaces such as headrests, dental unit control switches, air and water line hoses, light handles, chairside light curing unit, and other hard-to-clean areas and equipment.
b. Have appropriate instrument packs and supplies ready to begin treatment. This includes all necessary PPE (gloves, masks, eye protection, etc.) for the provider, assistant and the patient.
c. Check all sterilized instrument packs and packages to ensure they are intact and the external chemical indicator has changed to the appropriate color.
d. Open packs in advance of the patient's arrival.

18. All of the following precautions are correct with respect to the treatment phase of patient care except which one?

a. All procedures are performed in such a manner as to minimize splashing, spraying, spattering, and the generation of droplets (aerosols).
b. Prior to dental procedures, patients must rinse with chlorhexidine gluconate-, essential oil-, or povidone iodine-containing mouthwash.
c. Use rubber dental dam, high volume evacuator (HVE) and other protective barriers, engineering and work practice controls wherever possible.
d. Use one handed “scoop” technique or a recapping safety device to recap anesthetic needles.

19. All of the following precautions are correct with respect to the DTR-turn-around between patients except which one?

a. Wear heavy-duty utility gloves and other PPE while handling contaminated instruments and cleaning contaminated surfaces.
b. Place instruments in cassette tray (or properly labeled and approved container) for transport to the central sterilization room (CSR).
c. Clean and disinfect clinical contact surfaces that were not barrier protected with an EPA-registered hospital disinfectant with a tuberculocidal claim (i.e., intermediate-level disinfectant).
d. Remove gloves, perform hand hygiene and then it is safe to transport instrument trays, packs, and cassettes to the receiving side of CSR or another designated holding space.

20. Which of the following procedures are to be performed when securing the DTR at the end of the day?

a. Wear appropriate gloves, face protection, and eye protection while cleaning contaminated surfaces.
b. Clean and disinfect all contact surfaces, dental unit surfaces, and countertops with an EPA-registered disinfectant.
c. Flush and clean each water line and suction hoses, follow manufacturer's instructions if waterline treatment products are used. Follow manufacturer's instructions for cleaning and maintenance of dental unit water bottles.
d. All of the above.

21. Generally, blood and/or saliva-tinted items (e.g., disposable clinic gowns, gloves, and patient bibs) are not considered regulated waste and are placed in the regular trash receptacle.

a. True
b. False

22. All of the following statements are correct relative to regulated waste except which one?

a. Disposable sharps (e.g., needles, local anesthetic cartridges, orthodontic wires, scalpel blades, suture needles, endodontic files, and broken instruments are placed in a rigid, puncture-resistant, leak-proof container with a secure lid for storage and transportation.
b. Other regulated waste (e.g., items that drip when held vertically, release fluid when compressed, have dried on fluid that could flake off in transit) is placed in small biohazard bag and are disposed of into a centralized Regulated Waste Receptacle after each appointment.
c. Regulated waste is disposed of according to the requirements established by national, as opposed to local and state, environmental agencies.
d. Biohazard labels (fluorescent orange or orange red, with lettering or symbols in a contrasting color) are affixed as close as feasible to containers of regulated waste.

23. In the receiving, cleaning, and decontamination section of the central instrument processing area, reusable instruments are first cleaned with a hands-free process using an ultrasonic system with a strainer-type basket.

a. True
b. False

24. Noncritical items, i.e., items that contact only skin during their intended use may be disinfected with an EPA-registered intermediate level disinfectant without a tuberculocidal claim.

a. True
b. False

25. Heat-tolerant semi-critical and critical items must be heat sterilized in an FDA cleared device.

a. True
b. False

26. Which of the following is true regarding monitoring the correct functioning of a sterilizer?

a. A chemical indicator should be placed in a visible area of each package before sterilization processing.
b. A biological indicator spore test should be processed through a sterilizer cycle at least once a week.
c. Mechanical monitoring, i.e., confirming the manufacturer's recommended settings cycle time, temperature, and pressure should be completed with each load.
d. All of the above.

27. All handpieces, unless disposable, are heat sterilized between patients according to manufacturers' recommendations.

a. True
b. False

28. Backflow in low-volume suction lines occur and microorganisms present in the lines may be retracted into the patient's mouth when:

a. A seal is created around the saliva ejector.
b. A section of the suction tubing holding the tip is positioned above the patient's mouth.
c. During simultaneous use of other evacuation devices (high-volume).
d. All of the above.

29. Ideally, FDA-cleared film barrier pouches should be used when exposing dental films; after exposure, the film should be removed from the pouch and placed in a clean container.

a. True
b. False

30. All of the following statements are correct in relation to infection control-related issues in association with oral surgical procedures EXCEPT which one?

a. For oral surgical procedures, clinicians must perform surgical hand asepsis.
b. When using laser or electrosurgical units, the thermal destruction of tissue creates laser plumes or surgical smoke, which does not contain aerosolized infectious material.
c. For oral surgical procedures, clinicians must don surgeon's gloves.
d. When performing oral surgical procedures, only sterile saline or sterile water can be used as a coolant.

31. All of the following statements are correct in relation to extracted teeth EXCEPT which one?

a. Extracted teeth are considered to be potentially infectious.
b. Extracted teeth containing dental amalgams are to be placed in the medical waste container for final disposal by incineration.
c. Extracted teeth can be disinfected and returned to the patient upon request.
d. Extracted teeth must be heat-sterilized or disinfected in 10% formalin before clinical exercises or study.

32. All of the following statements are correct in relation to laboratory asepsis EXCEPT which one?

a. Environmental surfaces must be barrier-protected or cleaned and disinfected in the same manner as clinical contact surfaces in treatment areas.
b. Metal impression trays and face bow forks may be disinfected with an EPA-registered hospital level disinfectant with tuberculocidal claim.
c. Articulators, case pans, lathes, pressure pots, and water baths are to be cleaned and disinfected between patients according to manufacturers' recommendations.
d. Burs, polishing points, rag wheels, and laboratory knives used on contaminated or potentially contaminated prostheses or other material are to be heat-sterilized, disinfected, or discarded between cases according to manufacturers' recommendations.

33. Impressions, prostheses, and other devices must be rinsed under running tap water to remove blood and OPIM, disinfected with an EPA-registered intermediate-level disinfectant with tuberculocidal claim, and thoroughly rinsed under running tap water before handling.

a. True
b. False

34. Charts should be notated and radiographs viewed before gloving or after the gloves are removed and the hands are washed, unless cover gloves are worn.

a. True
b. False

35. All of the following statements are correct in relation to environmental infection control EXCEPT which one?

a. To prevent contamination of clinical contact surfaces cover them with materials impervious to moisture.
b. Before removing gloves and performing hand hygiene, place clean barriers on clinical contact surfaces after each patient.
c. Housekeeping surfaces such as floors and sinks are cleaned regularly with a detergent and water or an EPA-registered hospital disinfectant/detergent designed for general housekeeping purpose.
d. At the end of each day, general cleaning and disinfection of clinical contact surfaces are performed regardless of barrier protection.

36. All of the following statements are correct in relation to post-exposure evaluation and follow-up EXCEPT which one?

a. Immediately after an exposure incident wash injuries with soap and water and apply an antiseptic agent (if available).
b. Following a needlestick or sharp object injury a post-exposure evaluation must be made within 2 hours of exposure.
c. Report the exposure incident to the Office Infection-Control Officer or other designated person immediately following exposure.
d. The source person must be identified within 24 hour of an exposure incident.

37. After percutaneous, mucous membrane, or non-intact skin exposure to blood or OPIM the consulting physician will initiate post-exposure prophylaxis (if applicable) and follow-up according to the latest CDC recommendations.

a. True
b. False

38. In a community-based oral healthcare setting, implementation and enforcement of TB infection-control protocol provides for prompt _____.

a. identification of patients with suspected or confirmed TB disease
b. isolation of patients with suspected or confirmed TB disease from other patients and OHCPs
c. referral of patients suspected or confirmed TB disease for medical evaluation and /or urgent dental care to a facility with appropriate environmental controls and respiratory-protection controls
d. All of the above.

39. To prevent the transmission of respiratory tract infections, the implementation of Respiratory Hygiene/Cough Etiquette applies to which of the following persons with cough, congestion, rhinorrhea, or increased production of respiratory secretions entering an oral healthcare facility?

a. Patients
b. Visitors
c. OHCPs
d. All of the above.

40. To minimize latex allergy-related health problems among OHCPs and patients:

a. Reduce exposure to latex-containing materials by substituting non-latex products when appropriate and using appropriate work practice controls.
b. Train and educate of OHCPs to recognize signs and symptoms of latex-related adverse effects.
c. Refer OHCP with signs and symptoms suggestive of latex allergy to a physician to confirm diagnosis.
d. All of the above.

41. To minimize the exposure of patients to OHCPs who have been exposed to or have been diagnosed with an infectious disease, which of the following factors are considered in imposing restrictions on clinical practice?

a. Mode of transmission
b. Period of infectivity
c. Level of circulating viral burden
d. Level of risk for the transmission of a pathogen in association with a procedure
e. All of the above.

42. Which of the following are considered Category I procedures, i.e., procedures with minimal risk of bloodborne pathogen transmission?

a. Routine preventive dental procedures - not requiring the administration of local anesthesia
b. Operative, endodontic, and prosthetic procedures and periodontal scaling and root planning
c. Minor surgical procedures
d. Periodontal curettage, gingivectomy, and mucogingival and osseous surgery

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