CLINICAL PRACTICE GUIDELINES FOR AN INFECTION CONTROL/EXPOSURE CONTROL PROGRAM IN THE ORAL HEALTHCARE SETTING

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To establish exclusion policies

To prevent or reduce the risk of
gaining the potential spread of specific diseases (e.g., tuberculosis).

To establish the rationale for the policies and practices intended to prevent work-related infections

To reduce the risk of vaccine preventable diseases

To prevent or reduce the risk of occupational exposure

To eliminate or isolate the hazard in the workplace

To promote safer behavior in the workplace

To provide a safer work environment

To establish policies and practices to reduce the risk of post-exposure infection

To prevent the potential spread of specific diseases (e.g., tuberculosis)

To establish exclusion policies from work and patient contact

Table 1 - Standard precautions: a hierarchy of preventive strategies.

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Oral healthcare workers’ (OHCWs) primary obligation and ultimate responsibility is the timely delivery of quality care, within the bounds of the clinical circumstances presented by the patient. The provision of quality care depends on (1) proper diagnosis, (2) treatment planning, and (3) implementation of preventive, therapeutic, or palliative and supportive strategies in the privacy of a comfortable and safe environment. While the transmission of pathogenic microorganisms in the oral healthcare setting is rare, cross-infection does present a potential hazard to OHCWs and patients alike. To prevent or minimize cross-infection among OHCWs and patients, oral healthcare facilities are mandated to develop a written infection control/exposure control protocol that extends to all aspects of the clinical process.

Historically, infection control/exposure control guidelines focused primarily on the risk of transmission of bloodborne pathogens among OHCWs and patients and the use of universal precautions to reduce the risk. Universal precautions were based on the concept that patients with bloodborne infections can be asymptomatic and unaware that they are infectious; therefore all blood and body fluids contaminated with blood were treated as infectious. Subsequently, the CDC expanded universal precautions into the concept of standard precautions. Standard precautions apply not only to contact with blood and body fluids contaminated with blood but also to contact with all other potentially infectious material (OPIM).

Today, standard precautions provide the fabric for a hierarchy of preventive strategies designed to protect OHCWs and patients alike (Table 1).

To assure quality, 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. The information from which inferences can be drawn about the quality of infection control/exposure control practices may be classified under three headings: structure, process, and outcome.

- Structure refers to the attributes of the oral healthcare setting. This includes the 
  (1) availability of material resources (e.g., sterilization area and equipment), (2) human resources (e.g., number and qualification of personnel), and (3) organizational resources

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(e.g., the timely availability of post-exposure evaluation and follow-up). Since structure affects the amenities of the oral healthcare setting, it can be inferred that structural conditions are either conducive or inimical to good infection control/exposure control practices.

- Process refers to what is actually being done to prevent or minimize cross-infection. It includes (1) the establishment of criteria, i.e., a hierarchy of preventive strategies, based on knowledge derived from well conducted trials, extensive observations, or in the absence of such data the criteria should reflect the best informed, most authoritative opinion available; (2) the development and execution of activities intended to meet those criteria; (3) and continuous monitoring of compliance.

**Office Infection-Control Coordinator**

- Responsible for the development and overall management of the office infection control/exposure control program.
  - However, the creation and maintenance of a safe work environment mandates the commitment and accountability of all OHCWs.
- Maintains a copy of the infection control/exposure control protocol.
  - Provides both access to and an explanation of its contents upon request.
- Monitors the effectiveness of the infection control/exposure control program on a day-to-day basis, and over time.
  - Ensures that the criteria are relevant, the procedures are efficient, and the practices are successful.
- Outcome refers to the impact that infection control/exposure control strategies have on (1) enhancing knowledge, (2) changing behavior, and ultimately, (3) improving the health of OHCWs and their patients. Because so many factors influence outcome, it is not possible to know with absolute certainty the extent to which an observed outcome is attributable to an antecedent structure or process. However, outcome assessment does provide a mechanism to monitor performance (compliance).

### I. Education and training

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

#### A. Background

1. Compliance with the exposure control/infection control protocol is significantly improved if OHCWs understand the rationale for the written policies and practices intended to prevent work-related infections. The objectives of the education and training program are to educate OHCWs regarding (1) work-related infection risks, (2) preventive strategies, and (3) post-exposure management and follow-up.
   - a) See Huber MA, Terezhalmy GT. [Hepatotropic viruses: infection control/exposure control issues for oral healthcare workers](http://example.com).
   - b) See Huber MA, Terezhalmy GT. [HIV: infection control issues for oral healthcare personnel](http://example.com).
   - c) See Porteous NB, Terezhalmy GT. [Tuberculosis: infection control/exposure control issues for oral healthcare workers](http://example.com).

2. Infection
   - a) Invasion and multiplication of microorganisms in body tissues, resulting in local cellular injury
      - (1) Competitive metabolism
      - (2) Toxin production
      - (3) Immune-mediated reactions

3. Principle requisites for cross-infection
   - a) Exposure to a source or reservoir of pathogenic organisms of sufficient virulence and numbers
   - b) A mode of transmission and a portal of entry
      - (1) Direct contact with blood and OPIM (e.g., needlestick or cut with contaminated sharps)
      - (2) Contaminated instruments, equipment, and environmental surfaces coming in contact with skin and mucosal tissues
(3) Splash and spatter of infectious body fluids coming in contact with skin, and conjunctival and oral mucosal tissues
(4) Inhalation of airborne microorganisms suspended in aerosols
c) A susceptible host, i.e., immune/vaccination status of OHCWs and patients

4. Pathogenic organisms of concern in the oral healthcare setting
   a) HBV, HCV, and HIV
   b) Measles, mumps, and rubella
   c) Herpes simplex, varicella (chickenpox), and varicella zoster (shingles)
   d) Influenza, syncytial viruses, group A streptococci
e) *Mycobacterium tuberculosis*

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

2. Training record
   a) An individual Training Record is maintained on all OHCWs for the most recent 3-year period

II. Vaccinations

**OHCWs shall be vaccinated against all vaccine preventable infections in accordance with current state and federal regulations as well as recommendations from the U.S. Public Health Service and professional organizations.**

A. Background
1. The Occupational Safety and Health Administration’s final rule regarding blood borne pathogens requires that employers make hepatitis B vaccinations available without cost to their employees who may be exposed to blood or OPIM. In addition, the U.S. Public Health Service and the Centers for Disease Control and Prevention recommend that healthcare workers be vaccinated against measles, mumps, rubella, varicella, and influenza.
   a) See Huber MA, Terezhalm GT. *Mandated and highly recommended vaccines for oral healthcare workers.*

B. Execution/Compliance
1. Hepatitis B vaccination series
   a) Hepatitis B vaccination is made available at no cost to OHCWs, without a history of prior immunization, at the time of initial assignment to tasks in which exposure may occur.
   b) If the hepatitis B vaccination series is declined, the OHCW must sign a copy of the Mandatory Hepatitis B Vaccination Declination Form (Box 1). (1) If subsequently the OHCW

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**Box 1 - Mandatory Hepatitis B Vaccination Declination Form**

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 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
decides to accept the vaccination, while still covered under the standard, the hepatitis B vaccination series is made available at that time.

c) Post-vaccination seroconversion - 1st vaccination series
   (1) Testing for anti-HBs is strongly recommended 1-2 months after the 3rd dose of the 1st vaccination series
   (a) An anti-HBs titer of >10 mIU/mL is considered adequate
   (i) OHCWs who do not develop an adequate antibody response to the 1st vaccination series will be offered a second 3-dose series

d) Post-vaccination seroconversion - 2nd vaccination series
   (1) Testing for anti-HBs is strongly recommended 1-2 months after the 3rd dose of the 2nd vaccination series
   (a) If no antibody response occurs, testing for HBsAg is strongly recommended
   (i) HBsAg-negative OHCWs 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 OHCWs will be counseled about how to prevent the transmission of HBV to others and about the need for medical consultation.

e) If at a future date, the U.S. Public Health Service recommends routine booster doses of the hepatitis B vaccine, they will be made available at no cost to OHCWs.

2. Other vaccines
   a) It is highly recommended that OHCWs be also vaccinated against measles, mumps, rubella, varicella, and influenza.
   (1) OHCWs 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).

3. Documentation of vaccination status
   a) The vaccination status of OHCWs is documented in their individual Medical Record (See VI. Post-exposure evaluation and follow-up) and includes the following information:
      (1) The dates of vaccination (where applicable or available)
      (2) Evidence of immunity (where applicable or available)
      (3) A signed copy of the mandatory hepatitis B vaccination declination form (where applicable)

III. Personal Protective Equipment

Personal protective equipment shall be worn by all OHCWs to prevent or reduce the risk of disease transmission.

A. Background

1. As mentioned earlier, exposure to a source or reservoir of pathogenic organisms includes direct contact with blood and other potentially infectious material (OPIM); contact with contaminated instruments, equipment, and environmental surfaces; splash and spatter of infectious body fluids coming in contact with skin, and conjunctival and oral mucosal tissues; and inhalation of airborne microorganisms suspended in aerosols. Personal protective equipment (PPE) is designed to protect the skin and mucous membranes (eyes, nose, and mouth) of OHCWs from exposure to blood and OPIM.

   a) See Huber MA, Terezhalmy GT. Adverse reactions to latex products: preventive and therapeutic strategies.

   b) See Porteous NB, Terezhalmy GT. Tuberculosis: infection control/ exposure control issues for oral healthcare workers.
B. Execution/Compliance

1. 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 OHCWs.

a) Protective clothing

(1) 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.

(a) Protective clothing is
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
placed in designated areas
for disposal or washing.

b) Task-specific gloves

(1) Non-surgical, surgical, or heavy-
duty utility gloves are worn by
all OHCWs 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.

(a) To reduce the risk of latex-
related allergies, only
powder-free, low-allergen
latex gloves; and non-latex,
nitrile or vinyl gloves are
available.

(2) Non-surgical and surgical gloves
are single-use items, which are
used for only one patient and are
then discarded.

(a) When torn or punctured,
gloves are changed as soon
as possible.

(b) Gloves may not be washed
because it can lead to
wicking (penetration of liquids
through undetectable holes in
the gloves) and subsequent
hand contamination.

(c) Double gloving is acceptable
for extensive oral surgical
procedures.

(3) Heavy-duty utility gloves are worn
for all instrument, equipment, and
environmental surface cleaning
and disinfection.

(4) Wearing gloves does not
eliminate the need for hand
hygiene. (See IV. Work-practice
and engineering controls)

c) Surgical masks

(1) Surgical masks that cover both
the nose and the mouth are worn
by all OHCWs during clinical
activities likely to generate
splash, splatter, and aerosols.

(a) The surgical masks provided
for routine use have filtration
efficiency of 95% for
microorganisms greater than
3 microns.

(i) When a mask becomes
wet from exhaled air
or contaminated with
infectious droplets
from spray or from
touching the mask with
contaminated fingers,
it is changed as soon
as possible (between
patients or even during
patient treatment).

(2) 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 (See
VII. Transmission-based
precautions).
d) Protective eyewear
   (1) Protective eyewear with solid side shields or a face shield is worn by OHCWs during the clinical process likely to generate splash, splatter, and aerosols.
   (2) 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.
   (3) Protective eyewear is cleaned with soap and water between patients.

e) Ventilation devices
   (1) Mouthpieces, pocket masks, and resuscitation bags are used when CPR is administered.

IV. 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.**

A. Background
   1. Engineering controls take advantage of available technology to eliminate, minimize, or isolate biohazards (blood or OPIM). When engineering controls are not available or are not practical, work-practice controls are implemented. Work-practice controls include the use of PPE and the incorporation of other strategies, which are predicated on or that promote safer behavior.

B. Execution/Compliance
   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. Hand hygiene
      a) Wearing gloves (See III. Personal protective equipment) does not eliminate the need for hand hygiene.
      b) Natural or artificial fingernails are kept short to facilitate thorough cleaning underneath them and to prevent glove tears.
   c) All jewelry and ornaments are removed from the hands and wrists if they interfere with glove use.
   d) Sinks with electronic, foot, or knee action faucet controls are provided for asepsis and ease of function.
   e) Hand hygiene procedures are implemented
      (1) At the beginning of each work cycle
      (2) Before gloving, after degloving, and before regloving
      (3) Before and after going to lunch, taking a break, using the bathroom
      (4) Anytime the hands are contaminated by blood or OPIM
   f) 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.
      (1) Routine handwash
         a) Removes soil and transient microorganisms
         b) Acceptable method prior to performing physical examinations and nonsurgical procedures
         c) 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
      (2) Antiseptic handwash
         a) Removes or destroys transient microorganisms and reduces resident flora
(b) Acceptable method prior to performing physical examinations and nonsurgical procedures

(c) Technique and products
   (i) Hands are wetted under warm running water
   (ii) Antimicrobial soap (e.g., chlorhexidine, iodine and iodophors, chloroxylenol, triclosan) 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

(3) Antiseptic hand rub
   (a) To be used only when there is no visible soil on hands
   (b) Removes or destroys transient microorganisms and reduces resident flora
   (c) Acceptable method prior to performing physical examinations and nonsurgical procedures
   (d) Technique and products
      (i) Hands are rubbed together vigorously with an alcohol-based hand-rub product (containing 60 to 95% ethanol or isopropanol alcohol) until dry

(4) Surgical antisepsis
   (a) Removes or destroys transient microorganisms and reduces resident flora (persistent effect)
   (b) Acceptable method prior to performing surgical procedures
   (c) Opinion #1 - Technique and products
      (i) Hands are wetted under warm running water
      (ii) Antimicrobial soap (e.g., chlorhexidine, iodine and iodophors, chloroxylenol, triclosan) 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 sterile towels
   (d) Opinion #2 - 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) until the hands and forearms are dry.

   g) Hand hygiene products are stored and dispensed according to manufacturers’ directions.

4. Preprocedural and intra-procedural precautions
   a) All procedures that may reasonably be anticipated to contribute to cross-contamination are performed in such a manner as to minimize splashing, spraying, spattering, and the generation of droplets (aerosols).
      (1) Prior to such dental procedures, patients may rinse with chlorhexidine gluconate-, essential oil-, or povidone iodine-containing mouthwash.
5. Disposition of single use or disposable patient-care items

a) Unregulated waste

(1) 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.

b) Regulated waste

(1) Regulated waste is disposed of according to the requirements established by local and state environmental agencies.

(a) Disposable sharps 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.

(i) e.g., needles, local anesthetic cartridges, orthodontic wires, scalpel blades, suture needles, endodontic file, and broken instruments

(b) Other regulated waste are placed in small biohazard bag and are disposed of into a centralized Regulated Waste Receptacle after each appointment.

(i) i.e., items that drip when held vertically, release fluid when compressed, have dried on fluid that could flake off in transit

(2) Biohazard communication

(a) 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.

(i) Red bags or red containers may be substituted for labels.

(b) Regulated waste that has been decontaminated is not labeled or color-coded and is placed in the regular trash receptacle.

6. Disposition of reusable patient-care items

a) 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.

(1) 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.

(i) Residual blood, OPIM, cement and other visible debris are removed using a long-handled brush

(ii) Damaged instruments are replaced

b) Noncritical items, i.e., items that contact only intact skin during their intended use

(1) 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).

c) Semicritical 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
(1) 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). 
(a) After sterilization, all items are rinsed with sterile water to remove toxic or irritating residues.
   (i) Handled using sterile gloves and dried with sterile towels.
   (ii) Delivered to the point of use in an aseptic manner.

(2) Heat-tolerant items are heat sterilized in an FDA cleared device
(a) Preparation and packaging
   (i) The cleaned and inspected instruments are assembled into cassettes, tray sets, or packs with hinged instruments open and unlocked.
   (ii) An internal chemical indicator is placed in each cassette, tray set, or pack.
      [a] 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.

(b) 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.
(c) Storage
   (i) Sterilized items are stored in a clean, enclosed, and dry environment
      [a] Sterilized packages remain sterile indefinitely, unless an event causes it to become contaminated (e.g., torn or wet packages).

(d) Monitoring of the sterilization process
   (i) Mechanical
      [a] Confirm cycle time, temperature, and pressure by observing the gauges or displays on the sterilizer for each load
   (ii) Chemical
      [a] Note color changes of time and temperature sensitive internal and external chemical indicators, which reflect physical conditions during the sterilization process.

(iii) Biological
      [a] Monitor weekly the sterilization process by an appropriate spore test (according to manufacturer's time, pressure, and temperature recommendation)
      [i] Spore strip or vial is placed inside
the cassette, tray set, or pack

[iii] Cassette, tray set, or pack containing the biological indicator is placed in the center of the load (hardest area to penetrate)

[iii] A control strip (which is not heat processed) is used as a control with each spore test

[iv] A record is maintained of the weekly spore testing results

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

(e) Quality assurance procedures following a positive mechanical, chemical, or biological monitoring test

(i) Secure sterilizer from further use

(ii) Make proper log entries

(iii) Review operating procedures

(iv) Take corrective action (repair or replacement)

(v) Retest sterilizer using biological monitors (CDC recommends to retest 3 times using an empty chamber)

(vi) Loads dating back to the last negative biological indicator should be recalled, rewrapped, and resterilized

7. Handpieces

a) 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.

1) 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:

(a) Before removing handpiece from hose the lines are flushed for 20-30 seconds.

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

(c) Handpiece requiring pre-sterilization lubrication is lubricated.

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

(e) Fiberoptics are cleaned with a cotton swab dampened with isopropyl alcohol to remove excess lubricant.

(f) Handpieces are packaged and sterilized in a steam autoclave.

8. Saliva ejectors

a) Prevent backflow in low-volume suction lines

(1) Position the section of the suction tubing holding the tip below the patient’s mouth

(2) Instruct patient not to create a seal around the suction tip

(3) Avoid the simultaneous use of other evacuation devices, i.e., high-volume suction

9. Dental radiography

a) Preparing the operatory

(1) Cover clinical contact areas with a protective barrier before seating the patient (See V. Environmental infection control)

b) Exposing and processing films

(1) Hand hygiene and PPE before initiating the process (See IV. Engineering and work-practice
controls and III. Personal protective equipment
(2) Use disposable or heat-sterilized film-holding and positioning devices
(3) Use FDA-cleared film barrier pouches
   (a) After exposure, remove the film packet from pouch and place in a clean container
   (i) Transport/handle exposed radiographs in an aseptic manner to prevent contamination of developing equipment
   c) Digital radiography sensors and other high-technology instruments are cleaned and heat-sterilized or high-level-disinfected according to manufacturer’s recommendation.
   d) Panoramic radiography
      (1) Place disposable plastic cover over bite guide before the patient is positioned in the machine
      (a) If no barrier is used, use a sterile bite guard
10. Oral surgical procedures
   a) Perform surgical hand asepsis (See IV. Engineering and work-practice controls)
   b) Use appropriate PPE (See III. Personal protective equipment)
      (1) When using laser or electrosurgical units, the thermal destruction of tissue creates laser plumes or surgical smoke, which may contain aerosolized infectious material
   c) Use only sterile saline or sterile water as a coolant/irrigant
      (1) Use specifically designed irrigating devices (e.g., bulb syringe, single-use disposable products, or sterilizable tubing)
11. Biopsy specimens
   a) Specimens are placed in leak-proof, puncture-resistant container with a secure lid for storage and transportation.
   b) If the outside of the container becomes visibly contaminated, it is cleaned and disinfected or placed in an impervious bag
   c) The container is labeled with the biohazard symbol
12. Extracted teeth
   a) Potentially infectious and are disposed as regulated waste
   b) Teeth sent to the laboratory for shade and size comparisons
      (1) 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).
   c) Teeth containing dental amalgam are disposed of according to local and state regulations
   d) Extracted teeth can be disinfected and returned to patients upon request
   e) Extracted teeth in an educational setting
      (1) 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
      (2) Before clinical exercises or study, the teeth are heat-sterilized (autoclave cycle for 40 minutes)
         (a) Teeth with amalgam restorations are disinfected by immersion in 10% formalin solution for 2 weeks
         (i) Review MSDS for occupational safety and health concerns
13. Laboratory asepsis
   a) Environmental surfaces are barrier-protected or cleaned and disinfected (See V. Environmental infection control)
   b) Use PPE when handling items received in the laboratory until they have been decontaminated (See III. Personal protective equipment)
      (1) Impressions, prostheses, and other devices
         (a) Rinse under running tap water to remove blood and OPIM
         (b) 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).

(c) Thoroughly rinse under running water before handling

(2) Laboratory case sent off-site
(a) 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
(1) Heat-sterilized, disinfected, or discarded between cases following manufacturer’s recommendations

d) Metal impression trays and face bow forks are
(1) Heat sterilized between patients

e) Articulators, case pans, lathes, pressure pots, and water baths
(1) 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

14. Dental unit waterlines
a) The number of bacteria in water used as a coolant/irrigant for nonsurgical procedures should be < 500 CFU/mL
(1) The regulatory standard for safe drinking water established by the EPA, the American Public Health Association, and American Water Works Association.

b) Dental units are equipped with a self-contained water systems, which is used in combination with a chemical germicide
(1) The recommended quality of water is maintained by following the recommendations the manufacturer of the unit or waterline treatment product
(a) Dental devices that are connected to the dental water system are operated to discharged water and air for a minimum of 20-30 seconds after each patient

(c) While a boil-water advisory is in effect, do not deliver water from a public water system to the patient
(1) For hand hygiene use and alcohol-based hand rub if the hands are visibly soiled, use bottled water or an antiseptic towelette
(2) When the boil-water advisory is cancelled, follow guidance given by the local water utility
(a) Disinfect dental waterlines as recommended by the dental unit manufacturer

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

V. Environmental infection control

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

A. Background
Environmental surfaces such as walls, floors, 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 and housekeeping surfaces.

1. Clinical contact surfaces
a) e.g., light handles, switches, radiographic equipment, dental chairside computers, reusable containers of dental materials, drawer handles, faucet handles, countertops, pens, telephones, and doorknobs.

2. Housekeeping surfaces
a) e.g., walls, window drapes, other vertical surfaces, floors, sinks, carpeting, and cloth furnishing.
B. Execution/Compliance

1. Clinical contact surfaces
   a) To prevent contamination, use materials impervious to moisture (e.g., plastic wrap, bags, sheets, tubing, plastic-backed paper)
   (1) Coverings are removed and discarded between patients
      (a) After removing the barrier, the surfaces are examined for visible soil
      (i) Surfaces with visible soil are cleaned and disinfected with an EPA-registered intermediate-level hospital disinfectant with tuberculocidal claim,
      (ii) e.g., products containing chlorine, quaternary ammonium compounds with alcohol, phenolics, or iodophors
   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) Carpentry and cloth furnishing cannot be reliably disinfected and are avoided in patient care, laboratory, or instruments processing areas

3. Cleaning and disinfection strategies for spills and spatter (blood or OPIM)
   a) Wearing appropriate PPE, visible organic material is removed using disposable paper towels, which are then discarded in a leak-proof and appropriately labeled container
   b) The contaminated surface is cleaned with a detergent and water and disinfected with an EPA-registered intermediate-level hospital disinfectant with a tuberculocidal claim

VI. Post-exposure evaluation and follow-up

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

A. Background

1. Post-exposure evaluation and follow-up is a critical element of a comprehensive infection control/exposure control protocol. Exposure to blood or OPIM, including saliva (even when blood is not visible), must be considered potentially infectious
   a) See Huber MA, Terezhalmy GT. Mandated and highly recommended vaccines for oral healthcare workers.
   b) See Huber MA, Terezhalmy GT. Hepatotropic viruses: infection control/exposure control issues for oral healthcare workers.
   c) See Huber MA, Terezhalmy GT. HIV: infection control issues for oral healthcare personnel.
   d) See Porteous NB, Terezhalmy GT. Tuberculosis: infection control/exposure control issues for oral healthcare workers.

B. Execution/Compliance

1. Immediately after an exposure incident
a) Wash injuries with soap and water and apply an antiseptic agent (if available).
b) Report the exposure incident immediately to the Office Infection-Control Officer or other designated person.
c) Complete the Uniform Needlestick and Sharp Object Injury Report Form.

2. Within 2 hours of exposure and with the consent of the OHCW, arrangements are made for a post-exposure evaluation by a physician who will be provided with the following information:
   a) A copy of the completed Uniform Needlestick and Sharp Object Injury Report Form
   b) A copy of the OHCWs Medical Record (see next page)
   c) Any information available about the source individual
      (1) If the source person is identified (unless it can be established that identification is infeasible or prohibited by state or local law)
         (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.
         (i) Results of the source person’s testing are made available to the OHCW
            [a] The OHCW is informed of the applicable laws and regulations concerning the disclosure of the identity and infectious status of the source person.

3. 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 OHCW.

4. A medical record is maintained on every OHCW, which includes the following information:
   a) Vaccination status
      (1) Dates of vaccinations (where applicable or available)
      (2) Evidence of immunity (where applicable or available)
      (3) Documentation relative to the individual’s inability to receive the vaccinations required or highly recommended.
      (4) 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 OHCW and a copy is provided upon request.
      (1) The content is confidential and is not disclosed to anyone, without the OHCW’s expressed written consent, except as required by law.

VII. Transmission-based precautions

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

A. Background
1. The primary risk of exposure to MBT in the oral healthcare setting is contact with patients with undiagnosed or unsuspected infectious TB disease. A high index of suspicion and rapid implementation of precautions are essential to prevent and interrupt the transmission of MBT. Minimum requirements in a community-based oral healthcare setting is implementation and enforcement of a TB infection-control that provides prompt (1) identification of patients with suspected or confirmed TB disease, (2) isolation of
UNIFORM NEEDLESTICK AND SHARP OBJECT INJURY REPORT

Name: _____________________________________ Incident Report #: _________________________

Job Category:
- DDS/DMD (attending/staff)
- DDS/DMD (intern/resident/fellow)
- DS I
- DS II
- DS III
- DS IV
- RDH (attending/staff)
- DH I
- DH II
- DA
- Dental technician
- Sterilization personnel
- Housekeeper/laundry worker
- Other ________________________________

Where did the injury occur? (Check one)
- Treatment room
- Outside treatment room (hallway, etc)
- Emergency clinic
- Operating room
- Procedure room (x-ray, sterilization, etc)
- Dental laboratory
- Pathology
- Other ________________________________

Was the source patient identified? (Check one)
- Yes
- No

Was the injured person the original user of the sharp item? (Check one)
- Yes
- No

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

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

What device or item caused the injury?
___________________________________________________________________________________
___________________________________________________________________________________

Crest® Oral-B® at dentaicare.com Practice Management Toolkit — Personnel Management Revised February 2009
**When and how did the injury occur:** (Check one)

- Before use of item (item broke or slipped, assembling device, etc.)
- During use of item (item slipped, patient jarred item, etc.)
- Between steps of a multistep procedure (between incremental injections, passing instruments, etc.)
- Disassembling device or equipment
- In preparation for reuse of reusable instrument (sorting, disinfection, sterilizing, etc.)
- While recapping a used needle
- Withdrawing a needle from rubber or other resistant material (rubber stopper, I.V. port, etc.)
- Other after use, before disposal (in transit to disposal, cleaning up, left on table, floor, or other inappropriate place)
- From item left on or near disposal container
- While putting the item into the disposal container
- After disposal, struck by item protruding from opening of disposal container
- Item pierced side of disposal container
- After disposal, item protruded from trash bag or inappropriate waste container
- Other, describe _______________________________________________________________

**If the item causing the injury was a needle, was it a “safety design” with a shield, recessed, or retractable needle?**

- Yes
- No

**Was the injury:** (Check one)

- Superficial (little or no bleeding)
- Moderate (skin punctured, some bleeding)
- Severe (deep stick/cut, or profuse bleeding)

**Mark the location of the injury:**

![Diagram of body parts]

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

____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
patients with suspected or confirmed TB disease from other patients and OHCWs, and (3) referral of patients with suspected and confirmed TB disease for medical evaluation and/or required oral healthcare procedures to a facility with appropriate environmental controls and respiratory-protection controls.

a) See Porteous NB, Terezhalm GT. *Tuberculosis: infection control/ exposure control issues for oral healthcare workers.*

B. Execution/Compliance

1. Identification of patients with suspected or confirmed TB disease.
   a) When reviewing the medical histories (initial and periodic), including a review of organ systems, all patients are routinely asked about a history of
      (1) Exposure to TB
      (2) Latent TB infection
      (3) TB disease
      (4) Medical conditions that increase the risk of TB disease (e.g., HIV infection)
      (5) Signs and symptoms of TB disease
      (a) Chronic ill health, coughing with hemoptysis, low-grade fever, weight loss, and night sweats.

2. Isolation of patients with suspected or confirmed TB disease from other patients and OHCWs
   a) Patients are not kept in the office setting any longer than required
      (1) While in the office, these patients are promptly isolated from other patients and OHCWs
      (2) They are instructed to observe strict respiratory hygiene and cough etiquette procedures

3. Referral of patients with suspected or confirmed TB disease for medical evaluation and/or required urgent dental care
   a) 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.
   b) Patients requiring urgent dental care are referred to an oral healthcare facility that meets the requirements for appropriate environmental and respiratory-protection controls
      (1) Environmental control
         (a) Airborne infection isolation (AI) room
      (2) Respiratory-protection control
         (a) Disposable, nonpowered, air-purifying, particulate-filter respirators
         (i) 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 mm particles with a filtering efficiency of 95%, 99%, and 99.7% respectively.

VIII. Medical conditions and work restrictions

**Oral health care facilities shall have written exclusion policies from work and patient contact to protect OHCWs with latex allergies or those susceptible to opportunistic infections and to protect patients from cross-infection.**

A. Background

1. OHCWs may become susceptible to latex-related adverse reactions or develop acute or chronic conditions, which may predispose them to opportunistic 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. Decisions of work restrictions related to infectious diseases are based on the mode of transmission and the period of infectivity of the disease.
   a) See Huber MA, Terezhalm GT. *Adverse Reactions to Latex Products: Preventive and Therapeutic Strategies.*
   b) See Huber MA, Terezhalm GT. *Mandated and highly recommended vaccines for oral healthcare workers.*
c) See Huber MA, Terezhalmy GT. *Hepatotropic viruses: infection control/ exposure control issues for oral healthcare workers.*
d) See Huber MA, Terezhalmy GT. *HIV: infection control issues for oral healthcare personnel.*
e) See Porteous NB, Terezhalmy GT. *Tuberculosis: infection control/ exposure control issues for oral healthcare workers.*

B. Execution/Compliance
1. The following procedures are in place to minimize latex allergy-related health problems among OHCWs and patients.
   a) Reduced exposure to latex-containing materials by substituting non-latex products when appropriate and using appropriate work practice controls.
   b) Training and education of OHCWs to recognize signs and symptoms of latex sensitivity.
   c) Monitoring signs and symptoms of latex sensitivity among OHCWs and patients.
   d) To confirm the diagnosis of latex allergy, a physician will evaluate OHCWs with signs and symptoms suggestive of latex allergy.

2. Under certain circumstances, OHCWs will be excluded from work or patient-contact to prevent transmission of infection
   a) From patient to susceptible OHCWs or from OHCWs with an acute or chronic infection to patients.
      (1) Decisions concerning work restrictions are based on the mode of transmission and period of infectivity of the disease (Tables 2, 3, 4, 5).

<table>
<thead>
<tr>
<th>Infectious state</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HAV</strong></td>
<td></td>
</tr>
<tr>
<td>Acute infection</td>
<td>Restrict from duty for seven days after onset of jaundice</td>
</tr>
<tr>
<td><strong>HBV</strong></td>
<td></td>
</tr>
<tr>
<td>OHCWs with acute or chronic HBsAg who do not perform exposure-prone procedures</td>
<td>No restrictions</td>
</tr>
<tr>
<td>OHCWs with acute or chronic HBeAg who perform exposure-prone procedures</td>
<td>Do not perform exposure-prone procedures until counsel from a review panel has been sought State Dental Board</td>
</tr>
<tr>
<td><strong>HCV</strong></td>
<td></td>
</tr>
<tr>
<td>Acute or chronic infection</td>
<td>No restrictions</td>
</tr>
<tr>
<td><strong>HIV</strong></td>
<td></td>
</tr>
<tr>
<td>HIV infection/AIDS</td>
<td>Do not perform exposure-prone procedures until counsel from a review panel has been sought State Dental Board</td>
</tr>
</tbody>
</table>
### Table 3. Work restrictions: measles, mumps and rubella

<table>
<thead>
<tr>
<th>Infectious state</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td></td>
</tr>
<tr>
<td>Post-exposure</td>
<td>Exclude from duty from the 5th days after first exposure through the 21st day after last exposure or for 4 days after rash appears</td>
</tr>
<tr>
<td>Susceptible OHCP</td>
<td></td>
</tr>
<tr>
<td>Acute infection</td>
<td>Exclude from duty for 7 days after rash appears</td>
</tr>
<tr>
<td>Mumps</td>
<td></td>
</tr>
<tr>
<td>Post-exposure</td>
<td>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</td>
</tr>
<tr>
<td>Susceptible OHCP</td>
<td></td>
</tr>
<tr>
<td>Acute infection</td>
<td>Exclude from duty for 7 days after onset of parotitis</td>
</tr>
<tr>
<td>Rubella</td>
<td></td>
</tr>
<tr>
<td>Post-exposure</td>
<td>Exclude from duty from the 7th day after first exposure through the 21st day after last exposure</td>
</tr>
<tr>
<td>Susceptible OHCP</td>
<td></td>
</tr>
<tr>
<td>Acute infection</td>
<td>Exclude from duty for 5 days after rash appears</td>
</tr>
</tbody>
</table>

### Table 4. Work restrictions: herpes simplex and varicella infections

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

### Table 5. Work restrictions: respiratory tract infections

<table>
<thead>
<tr>
<th>Infectious state</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza and syncytial viruses</td>
<td>Exclude from the care of patients at high-risk until acute symptoms resolve</td>
</tr>
<tr>
<td>Acute infection with fever</td>
<td></td>
</tr>
<tr>
<td>Group A streptococci</td>
<td>Restrict from duty until 24 hours after treatment is initiated</td>
</tr>
<tr>
<td>Acute infection</td>
<td></td>
</tr>
<tr>
<td>Mycobacterium tuberculosis</td>
<td>No restrictions</td>
</tr>
<tr>
<td>PPD positive</td>
<td></td>
</tr>
<tr>
<td>Acute infection</td>
<td>Exclude from duty until proven non-infectious</td>
</tr>
</tbody>
</table>
REFERENCES


2. Centers for Disease Control and Prevention. Immunization of Health-Care Workers: Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC) MMWR 1997;46(No. RR-18):1-44.


