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Applicability UNC Medical Center

Dentistry

I. Description

Describes the infection prevention and control guidelines followed by Dentistry and/or during dental procedures involving the oral cavity.

II. Rationale

Dental procedures frequently involve manipulation and incision of the oral mucosa that increases the risk of infection. In addition, dental clinicians manipulate sharp instruments and perform aerosol-generating procedures that can result in exposure to potentially infectious body fluids. Strict adherence to infection prevention and control guidelines is essential to prevent the transmission of infectious agents in the dental setting.

III. Policy

A. Infection Prevention Practices

1. Staff should adhere to all relevant Infection Prevention policies, in addition to this policy where applicable.
2. Staff and students must be familiar with Infection Prevention policy: [Exposure Control Plan for Bloodborne Pathogens](#) and report needlestick/sharps, mucous membrane, and non-intact skin exposures from blood and other potentially infectious materials to Occupational Health Services (OHS) by calling the Needlestick Hotline at 984-974-4480. University employees should report exposures to University Employee Health Service at 919-966-9119, and University students should report to CHS.

3. Personal Protective Equipment (PPE) in the Dental Setting.
 - a. During general dental and oral surgical procedures, gloves, fluid resistant mask, eye shields, and a fluid-resistant gown are worn. These garments must be removed before staff exit areas of the Dental Clinic used for laboratory or patient care activities.
 - b. Wear nitrile gloves when the potential exists for contacting blood, saliva, other potentially infectious material, mucous membranes, or potentially contaminated equipment.
 - i. Gloves must be worn when examining extra-oral or intra-oral tissues or providing any dental treatment procedures.
 - ii. Gloves must be removed and discarded, hand hygiene performed, and new gloves donned between each patient examination and/or treatment, and prior to exiting patient care area.
 - iii. Remove gloves that are torn, cut, or punctured as soon as feasible and perform hand hygiene before donning new gloves.
 - iv. Wear gloves when exposing radiographs and handling contaminated film packets.
 - c. Sterile gloves must be worn for surgical procedures (e.g., biopsy, periodontal surgery, apical surgery, implant surgery and surgical extraction of teeth).
 - d. Surgical masks (i.e., fluid resistant) and protective eyewear, or plastic face shields with masks must be worn when splashing or splattering of blood or other potentially infectious fluids is likely. Masks should be changed between patients and when visibly soiled or wet. Face shields and protective eyewear should be disinfected or disposed of in accordance with manufacturer's instructions for use (MIFU).
 - e. Reusable or disposable fluid resistant gowns must be worn when clothing is likely to be soiled with blood or other body fluids. PPE should be changed between patients, when visibly soiled, and immediately or as soon as possible if penetrated by blood or other potentially infectious fluids.

B. Cleaning, Disinfection, and Sterilization in Dental Settings

1. Cleaning and disinfection of dental equipment, including but not limited to water lines, hoses, handpieces, ultrasonics, or anything connected to a water line is performed in accordance with manufacturer's instructions for use (MIFU).
2. Individuals responsible for cleaning, disinfecting, and sterilizing instruments and

equipment must be knowledgeable and follow guidelines provided in the Infection Prevention policies: [Sterilization of Reusable Patient-Care Items](#) and [Exposure Control Plan for Bloodborne Pathogens](#), and this dentistry specific policy. Staff performing these duties should be competency tested initially on employment and annually thereafter.

3. Countertops and dental equipment surfaces such as light handles, x-ray unit heads, amalgamators, cabinet and drawer pulls, tray tables, and chair switches are likely to become contaminated with potentially infectious materials during treatment procedures.
 - a. Surface barriers (e.g., plastic wrap, impervious-backed absorbent paper) are used to protect clinical contact surfaces, especially those that are difficult to clean (e.g., switches on dental chairs, computer equipment, connections to hoses, etc.) and these barriers are changed between patients.
 - b. Ensure clinical contact surfaces and/or noncritical patient-care items/ equipment, even if covered with a protective barrier, are cleaned, and disinfected with an EPA-registered disinfectant (e.g., Sani-Cloth®, MetriGuard™) after each use and when contaminated or visibly soiled.
 - c. High-level disinfectants (e.g., glutaraldehyde) should not be used as an environmental surface disinfectant or as instrument/equipment holding solutions.
 - d. Items designed for 'single patients use only' may not be used on another patient.
4. Housekeeping surfaces, including floors, sinks, and related objects should be cleaned routinely by Environmental Services consistent with the Infection Prevention policy: [Environmental Services](#).
5. Items that have been used in the mouth (e.g., impressions, casts, wax rims/bites, bite registrations, fixed and removable prostheses, orthodontic appliances, jaw relation records, removable dentures, and partials) must be properly disinfected prior to shipment to and/or manipulation in a dental laboratory. All reusable items or appliances are sterilized per MIFU before reuse or disposed of if they are not reprocessed.
 - a. Impressions must be rinsed to remove saliva, blood, and debris and then disinfected. Impressions can be disinfected by immersion in any compatible disinfecting product. Since the compatibility of an impression material with a disinfectant varies, MIFU for proper disinfection should be followed. The use of disinfectants requiring times of no less than one minute and no more than 30 minutes for disinfection is recommended.
 - b. Follow the MIFU for disinfectant use and immersion times.

- c. Disinfected impressions that are sent to the dental laboratory should be labeled as such in order to prevent duplication of the disinfection protocol.
6. Surgical and other instruments that normally penetrate soft tissue and/or bone (e.g., forceps, scalpels, bone chisels, scalers, and surgical burs) are sterilized after each use. Non-surgical instruments (e.g., metal impression tray or face bow fork) that come into contact with oral tissues should also be sterilized after each use. If sterilization is not possible, disposable instruments are to be used.
7. Sterilizers will be cleaned according to the sterilizer MIFU and managed according to the Infection Prevention policy: [Sterilization of Reusable Patient-Care Items](#).
8. All handpieces and other reusable intraoral instruments that can be removed from the air and water lines of dental units must be cleaned and sterilized between patients per MIFU.
 - a. Hoses are disinfected and flushed with tap water before and after use with each patient.
 - b. MIFU should be followed for use/maintenance of waterlines, check valves, and for flushing of handpieces.
 - c. Air/water syringes should contain removable metal tips that are sterilized after each patient or disposable plastic tips should be used and discarded after use.
 - d. After each patient use, any dental device connected to the dental air/water system that enters a patient's mouth must be flushed with water per MIFU, discharging the water into a sink or container. The handpieces are removed, and wash waterlines allowed to discharge water per MIFU.
 - e. Air/water syringes and ultrasonic scaler units should be flushed as described above for handpieces. These attachments should be sterilized after each patient in the same manner as the handpieces, or in accordance with MIFU. Removable tips should be sterilized between patients or disposable tips should be used for one patient and discarded.
9. Packaged sterile items must be stored at least 8 inches from floor.

C. General Operating Procedures

1. Three principal means of limiting contamination by droplets and splatter are the use of high-volume evacuation, proper patient positioning, and rubber dams.
2. Dental staff should prevent cross-contamination by using new plastic covers on light switches, chair controls, or other items touched during patient treatment procedures. Plastic should be discarded, and surfaces disinfected with an EPA-registered disinfectant after each patient.

3. Oral surgical procedures involve the incision, excision, or reflection of tissue that exposes the normally sterile areas of the oral cavity. Examples of surgical procedures include biopsy, periodontal surgery, apical surgery, implant surgery, and surgical extractions of teeth. During oral surgical procedures, dental practitioners should use only sterile solutions as a coolant or irrigant using an appropriate delivery device, such as a sterile bulb syringe, sterile tubing that bypasses dental unit waterlines, or sterile single-use devices. For all non-surgical pupal therapy and endodontic procedures, consider following more conservative recommendations which recommend irrigation with a sterile and/or antimicrobial solution.
4. These irrigation solutions are single patient use.
5. Anti-retraction valves are to be used on dental unit waterlines to prevent fluid aspiration of patient material back into the handpiece and waterlines.
6. For all non-surgical dental procedures, use water that meets CDC recommendations (i.e., ≤ 500 CFU/mL of heterotrophic water bacteria).
 - a. Dental unit waterline treatment products/devices are used to ensure water meets EPA regulatory standards for drinking water (i.e., ≤ 500 CFU/mL of heterotrophic water bacteria) for routine dental treatment output water.
 - b. Product manufacturer's instructions for use (MIFU) (i.e., waterline treatment product, dental unit manufacturer) are followed for monitoring the water quality. A waterline maintenance tablet (e.g., Blu Tab) is added to the water bottle each time the bottle is refilled. Sterile water is used.
 - c. Dental water cultures are obtained periodically from the UNC Hospitals Dental Clinic and dental carts in the UNC Hospitals Main OR, Children's OR and the Ambulatory Surgery Center as a continuous quality improvement measure. Contact Infection Prevention if there are questions about dental water culture process.
7. Pre-procedural mouth rinses (PPMR) with an FDA-approved antimicrobial product (e.g., oral chlorhexidine gluconate) may reduce the level of oral microorganisms in aerosols and spatter generated during dental procedures, thereby reducing the risk of post-operative infection as well as reduce risks microbial exposure to staff.

D. Digital Radiography

1. Food and Drug Administration (FDA)-cleared barriers are used to cover sensors (e.g., intraoral sensors or photostimulable phosphor (PSP) plates) and barriers are changed between patients. After the surface barrier is removed and discarded, the sensor/plate is ideally cleaned and sterilized or high-level disinfected according to the manufacturer's instructions for use (MIFU). If the item cannot tolerate these procedures, then at a minimum, the sensor/plate is cleaned and disinfected with an intermediate-level, EPA-registered disinfectant. Follow all MIFU.

2. Protective coverings or disinfectants should be used to prevent microbial contamination of position-indicating devices and radiography equipment in accordance with MIFU and the Infection Prevention policy: [Sterilization of Reusable Patient-Care Items](#).
3. Intraorally contaminated barriers, PSP, sensors and/or devices should be handled in a manner to prevent cross-contamination. Contaminated items should be handled using gloves. Unless contraindicated by the manufacturer, the protective barrier envelope should be disinfected thoroughly after use, carefully allowed to dry, hand hygiene performed, and clean gloves donned prior to removing and discarding the disinfected barrier envelope to prevent re-contamination of intraoral PSP plates or sensors. The PSP sensor/device should be dropped out of the barrier protection onto a clean surface without touching the sensor/device. The contaminated barrier packets should be accumulated in a disposable towel and discarded in regular trash. After contaminated items are discarded, gloves are removed, and hand hygiene performed. The digital films can then be processed without contaminating radiography equipment with microorganisms from the patient.

E. Disposal of Waste Materials

1. Wearing appropriate PPE, disposable materials such as gloves, masks, wipes, paper drapes and surface covers that are contaminated with body fluids should be discarded in a regular trash bag (i.e., white plastic bag with biohazard label).
2. Blood, disinfectants, and sterilants may be carefully poured into a drain connected to a sanitary sewer system, not a hand washing sink. Refer to the Infection Prevention policy: [Guidelines for Disposal of Regulated Medical Waste](#).
3. It is recommended that drains be flushed or purged each night to reduce bacteria accumulation and growth.
4. Sharp items, such as needles and scalpel blades, should be placed in puncture-resistant containers marked with a biohazard label.
5. Regulated medical waste (e.g., sharps, tissues, and teeth for example) should be disposed of according to the Infection Prevention policy: [Guidelines for Disposal of Regulated Medical Waste](#).
6. All linens are to be placed in a fluid-resistant linen bag before being sent to the laundry.
7. Dental cart suction traps are disposable. All dental equipment should be cleaned in each room after each patient.
8. Blood spills or saliva contamination should be cleaned up immediately with a 1:10 dilution of sodium hypochlorite (household bleach) or an EPA-registered disinfectant.
9. After each patient, the entire dental area, all equipment used to include the dental chair, should be disinfected with an EPA-registered disinfectant (e.g., Sani-Cloth®).

Computer screens and keyboards should be cleaned using alcohol and an EPA-registered disinfectant, respectively.

F. Continuing Education

1. All employees will be instructed by the supervisor in aseptic techniques and will have the personal responsibility for maintaining aseptic technique.
2. Infection control education, including OSHA Bloodborne Pathogens and Tuberculosis training, will be completed by staff annually via the Learning Management System (LMS).
3. HLD and/or Sterilization courses should be completed, and competencies signed off for all employees with responsibilities involving these processes on an annual basis. Refer to the Infection Prevention policies: [High-Level Disinfection \(HLD\)](#) and [Sterilization of Reusable Patient-Care Items](#) for additional guidance.

G. Implementation

Implementation of this policy will be the responsibility of the Clinic or Department Supervisor.

IV. References

Centers for Disease Control and Prevention (October 31, 2022). Outbreaks of Nontuberculous Mycobacteria Infections Highlight Importance of Maintaining and Monitoring Dental Waterlines [HAN Archive - 00478 | Health Alert Network \(HAN\) \(cdc.gov\)](#)

Centers for Disease Control and Prevention (CDC). *Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Oral Health; March 2016. <https://www.cdc.gov/oralhealth/infectioncontrol/pdf/safe-care2.pdf>

CDC Statement on Reprocessing Dental Handpieces, April 11, 2018. <https://www.cdc.gov/oralhealth/infectioncontrol/statement-on-reprocessing-dental-handpieces.htm>, accessed 1/21/21.

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings <https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>

CDC: Guidelines for Infection Control in Dental-2003. MMWR 12/19/03/Vol. 52/No.RR-17.

Infection Control Recommendations for the Dental Office and the Dental Laboratory. [http://jada.ada.org/article/S0002-8177\(88\)62021-6/pdf](http://jada.ada.org/article/S0002-8177(88)62021-6/pdf), accessed 2/21/18.

V. Related Policies

[Infection Prevention Policy: Environmental Services](#)

[Infection Prevention Policy: Exposure Control Plan for Bloodborne Pathogens](#)

[Infection Prevention Policy: Guidelines for Disposal of Regulated Medical Waste](#)

[Infection Prevention Policy: Hand Hygiene and Use of Antiseptics for Skin Preparation](#)

[Infection Prevention Policy: High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices](#)

[Infection Prevention Policy: Infection Prevention Guidelines for Perioperative Services](#)

[Infection Prevention Policy: Infection Prevention Guidelines for Safe Patient Care](#)

[Infection Prevention Policy: Isolation Precautions](#)

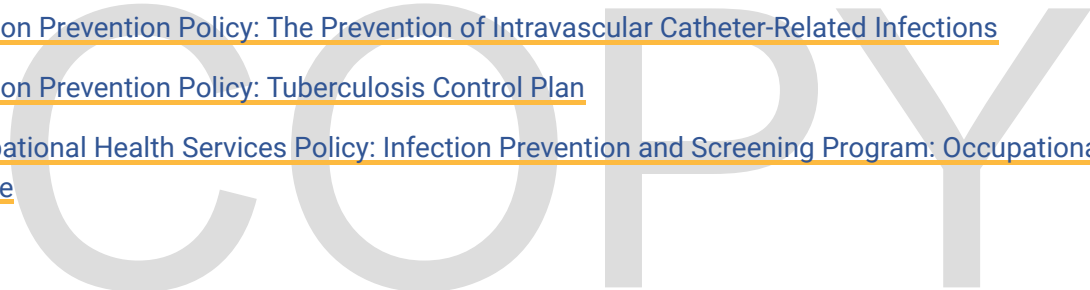
[Infection Prevention Policy: Respiratory Care Department](#)

[Infection Prevention Policy: Sterilization of Reusable Patient-Care Items](#)

[Infection Prevention Policy: The Prevention of Intravascular Catheter-Related Infections](#)

[Infection Prevention Policy: Tuberculosis Control Plan](#)

[Occupational Health Services Policy: Infection Prevention and Screening Program: Occupational Health Service](#)



Approval Signatures

Step Description	Approver	Date
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Applicability

UNC Medical Center