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Policy Area Infection Prevention
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. Healthcare Personnel (HCP) should adhere to the following policies where applicable:
 - a. Infection Prevention policy: [Ambulatory Care Clinical Services](#) (for outpatient interactions)
 - b. Infection Prevention policy: [Guidelines for Disposal of Regulated Medical Waste](#)
 - c. Infection Prevention policy: [Hand Hygiene and Use of Antiseptics for Skin Preparation](#)
 - d. Infection Prevention policy: [High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices](#)

- e. Infection Prevention policy: [Infection Prevention Guidelines for Adult and Pediatric Inpatient Care](#) (for all interactions on inpatient floors/units)
 - f. Infection Prevention policy: [Infection Prevention Guidelines for Perioperative Services](#)
 - g. Infection Prevention policy: [Isolation Precautions](#)
 - h. Infection Prevention policy: [Respiratory Care Department](#)
 - i. Infection Prevention policy: [Sterilization of Reusable Patient-Care Items](#)
 - j. Infection Prevention policy: [The Prevention of Intravascular Catheter-Related Infections](#)
 - k. Infection Prevention policy: [Tuberculosis Control Plan](#)
2. HCP must adhere to guidelines established by the Occupational Health Service (see Infection Prevention policy: [Infection Control and Screening Program: Occupational Health Service](#)).
 3. HCP 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.
 4. Personal Protective Equipment (PPE) in the Dental Setting.
 - a. During general dental and oral surgical procedures, gloves, mask, eye shields, and a fluid-resistant gown are worn. These garments must be removed before personnel 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 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 instructions.

- 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 when visibly soiled or penetrated by blood or other potentially infectious fluids and between patients.

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 instructions.
2. Individuals responsible for cleaning, disinfecting, and sterilizing instruments and equipment must be knowledgeable and follow guidelines provided in the Infection Prevention policy: [Sterilization of Reusable Patient-Care Items](#), Infection Prevention policy: [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 IFUs 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, manufacturers' recommendations 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 manufacturer's recommendations 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 manufacturer's instructions for use 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 manufacturer's IFUs.
- a. Hoses are disinfected and flushed with tap water before and after use with each patient.
 - b. Manufacturers' recommendations 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 IFUs, discharging the water into a sink or container. The handpieces are removed and wash waterlines allowed to discharge water per IFUs.
 - 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 manufacturers' instructions. 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 personnel 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. Sterile saline or sterile water are to be used as a coolant/irrigator during surgical procedures, including but not limited to those involving the cutting of bone using rotary instruments. Examples of surgical procedures include biopsy, periodontal surgery, apical surgery, implant surgery, and surgical extractions of teeth. These irrigation solutions are single patient use.
4. Anti-retraction valves are to be used on dental unit waterlines to prevent fluid aspiration of patient material back into the handpiece and waterlines.
5. 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.
 - a. Product manufacturer instructions (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.
 - b. Dental water cultures are obtained periodically from the UNC Hospital Dental Clinic and dental carts in the UNC 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.
6. Preprocedural 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 of HCP microbial exposure.

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. 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 manufacturer instructions.
2. Barriers should be removed and disposed of carefully to avoid contamination of the

sensor and/or other surfaces and equipment/supplies.

3. Protective coverings or disinfectants should be used to prevent microbial contamination of position-indicating devices in accordance with manufacturer instructions.
4. Intraorally contaminated sensors and/or devices should be handled in a manner to prevent cross-contamination. Contaminated items should be handled using gloves. The 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 darkroom 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 sterility may be carefully poured into a drain connected to a sanitary sewer system, not a hand washing sink. Care should be taken to ensure compliance with applicable local regulations.
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 should be cleaned following routine housekeeping procedures. All equipment used, including the dental chair, should be cleaned 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 polices: [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 Supervisor.

IV. References

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: Ambulatory Care Clinical Services](#)

[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 Control and Screening Program: Occupational Health Service](#)

[Infection Prevention Policy: Infection Prevention Guidelines for Adult and Pediatric Inpatient Care](#)

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

[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](#)

Approval Signatures

Step Description	Approver	Date
Policy Stat Administrator	Kimberly Novak-Jones: Nurse Educator	05/2021
	Thomas Ivester: CMO/VP Medical Affairs	05/2021
	Emily Vavalle: Dir Epidemiology	03/2021
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