Policy on Infection Control

Latest Revision

2020

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Purpose

The American Academy of Pediatric Dentistry (**AAPD**) recognizes the importance of infection control policies, procedures, and practices in dental health care settings in order to prevent disease transmission.

Methods

This policy was developed by the Infectious Disease Control Subcommittee of the Clinical Affairs Committee and adopted in 1989.[1] This document is a revision of the previous version, revised in 2019.[2] The revision of the policy is based upon a review of current dental and medical literature related to infection control, expert opinion, and best current practices. Literature searches of PubMed®/MEDLINE and Google Scholar databases were conducted using the terms: dentistry infection control AND health care and infection control AND dental; fields: all; limits: within the last 10 years, English, humans, comparative study, meta-analysis, multicenter study, systematic reviews, and validation study. The search returned 365 articles that matched the criteria. The articles were evaluated by title and/or abstract and relevance to dental care for children and adolescents. Twenty articles were chosen from this method and from references within selected articles.

Background

The application of standard precautions regarding infection control during dental treatment is paramount. The environment in which dental care is delivered impacts both patient and provider safety. Knowledge of current best practices in infection control can help reduce exposure to and contamination risks from infectious materials. This would include body substances, contaminated supplies, equipment, environmental surfaces, water, and air. Some infection control practices routinely used by health-care professionals cannot be rigorously evaluated by clinical trials for ethical and logistical reasons.[3]

Many resources are available to aid dental providers in creating checklists, standard operating procedures, or other quality assurance mechanisms for use in daily practice. The Centers for Disease Control and Prevention (**CDC**)[4,5] and the Occupational Safety and Health Administration (**OSHA**)[6], as well as state and local regulatory boards or agencies and equipment manufacturers, provide guidance for patient care, laboratory procedures, and equipment management. Such entities can serve as valuable sources for current infection control recommendations. Until more is known about severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a combination of standard precautions, contact precautions, and droplet precautions may be utilized when performing patient care.[5,6]

The possibility of contamination within the internal components of dental handpieces has led to the recommendation[4,6] that all dental handpieces, including low-speed motors and removable prophylaxis angles, undergo heat sterilization between patients. Following instructions for sterilization provided by the manufacturer of reusable equipment can help ensure effectiveness of sterilization techniques[3] and compliance with current standards[4-6].

Infections associated with microbial transmission from dental waterlines have been reported.[7-12] To help prevent such infections, it has been recommended that practitioners "follow manufacturer guidelines to disinfect waterlines, monitor water quality to ensure recommended bacterial counts, use point-of-use water filters, and eliminate dead ends in plumbing where stagnant water can enable biofilm formation."[10] In 2015, an outbreak of *Mycobacterium abscessus* odontogenic infections in children receiving pulpotomy treatment from a pediatric dental clinic was investigated.[10] The source of the *Mycobacterium* was contaminated water from dental unit waterlines.[9-14] In California, 22 confirmed and over 70 suspected non-immunocompromised pediatric dental patients had a diagnosis of *Mycobacterium abscessus* odontogenic infections following pulpal therapy.[8,9,14]

Water from the dental operatory units is subject to the standard for safe drinking water set by the Environmental Protection Agency, the American Public Health Association, and the American Water Works Association.[3] A water management plan that includes routine maintenance procedures for dental unit waterlines (according to the manufacturer's instructions) and monitoring water quality can help keep bacterial counts low.[15] The CDC states "conventional dental units cannot reliably deliver sterile water even when equipped with independent water reservoirs containing sterile water because the water-bearing pathway cannot be reliably sterilized."[16] Sterile water and sterile saline have been recommended for use as a coolant or irrigant during oral surgical procedures.[3,15,17] When a pulp exposure occurs and pulp therapy is indicated,

ABBREVIATIONS

AAPD: American Academy of Pediatric Dentistry. **CDC:** Centers for Disease Control and Prevention. **OSHA:** Occupational Safety and Health Administration. **PPE:** Personal protective equipment.

irrigants should not come from dental unit water lines. A single-use disposal syringe should be used to dispense irrigants for pulpal therapy.

Although no adverse health effects have been reported with use of saliva ejectors, the CDC cautions dental health care providers to be aware of the possibility of suctioned fluids in tubing flowing back into the patient's mouth.[3] This can happen when:

1. the pressure in patient's mouth, as a result of closing their lips and forming a seal around the tip of the ejector, is lower than the pressure in saliva ejector;
2. the suction tubing attached to the ejector is positioned above patient's mouth; or
3. the saliva ejector is used at same time with other high-volume suctions.

Policy statement

The AAPD:

- acknowledges the *Centers for Disease Control and Prevention's Guidelines for Infection Control in the Dental Health-Care Setting–2003*[3], *Guidelines for Disinfection and Sterilization in Healthcare Facilities–2008*[18], *Updated CDC Recommendations for the Management of Hepatitis B Virus-infected Health Care Providers and Students–2012*[19], and *Statement on Reprocessing Dental Handpieces–2018*[20], as in-depth reviews of infection control measures for dental settings and supports the strategies therein.
- encourages dental practitioners to follow current literature and consider carefully infection control measures in their practices to minimize the risk of disease transmission.
- encourages providers to heat sterilize all dental handpieces, including low-speed motors and reusable prophylaxis angles, between patients.[3]
- encourages providers and their dental teams to be proactive in addressing infection control concerns. Staff may benefit from additional training to better answer questions from parents regarding the infection control practices in their treatment facility.
- encourages practitioners to develop a water management plan that includes routine maintenance procedures for dental unit waterlines (according to the manufacturer's instructions) and monitoring water quality to help keep waterline bacterial counts low.
- encourages practitioners to use irrigants for operative and surgical procedures that are consistent with CDC recommendations. Because conventional dental units cannot reliably deliver sterile water even when equipped with independent water reservoirs, a single-use disposable syringe should be used to dispense irrigants for pulpal therapy and oral surgical procedures.
- encourages clinicians to take necessary precautions to prevent potential backflow associated with use of saliva ejectors.

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