Policy on Infection Control

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Purpose

The American Academy of Pediatric Dentistry recognizes the importance of infection control policies, procedures, and practices in dental health care settings in order to reduce microbial transmission.

Methods

This policy was developed by the Infectious Disease Control Subcommittee of the Clinical Affairs Committee and adopted in 1989.[1] This document, a revision of the 2020[2] version, is based on 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*; *infection control* AND *dental* AND *air quality*, *hand hygiene*, and *personal protection equipment*; fields: all; limits: within the last 10 years, English, humans, comparative study, meta-analysis, multi-center study, systematic reviews, and validation study. The search returned 195 articles that matched the criteria. The articles were evaluated by title and/or abstract and relevance to dental care for children and adolescents. Articles were chosen from this method and from references within selected articles.

Background

The application of standard infection control principles 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 as well as contaminated supplies, equipment, environmental surfaces, water, and air/aerosols. In addition, education and immunization for staff prior to working in a health care setting can help reduce the risk for microbial transmission and infection.

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[3-5] and the Occupational Safety and Health Administration[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.

Standard precautions for all patient care in any health care setting include hand hygiene, use of personal protection equipment, respiratory hygiene/cough etiquette, sharps safety, safe injection practices, sterile instruments and devices, and cleaning and disinfecting environmental surfaces.[3,7] The coronavirus disease 2019 (COVID-19) pandemic heightened concern of viral transmission during aeorosol-generating dental procedures and led to implementation of screening patients for acute illness at the time of their appointments.[8,9] Concern for needlestick injuries in occupational health services and increased incidence of transmission of bloodborne viruses such as hepatitis B, hepatitis C, and human immunodeficiency virus (HIV) led to implementation of exposure protocols including first aid measures, reporting, blood testing, and medical treatment when indicated.[10-12]

The possibility of contamination within the internal components of dental and surgical handpieces and subsequent microbial transmission from one patient to another has led to the recommendation that all handpieces, including low-speed motors and removable prophylaxis angles, undergo heat sterilization between patients and single-use components (eg, disposable prophylaxis angles) be discarded.[3,13] Adherence to sterilization instructions provided by the manufacturer of reusable equipment can help ensure effectiveness of sterilization techniques and compliance with current standards.[3,13] In addition, using barrier protective coverings or disinfecting clinical contact surfaces in between patients and at the end of each day has been recommended.[13]

Outbreaks of nontuberculous Mycobacteria infections in children who received pulpotomies in clinics with contaminated treatment water and additional disease-causing microorganisms (eg, *Legionella*, *Pseudomonas aeruginosa*) found in untreated dental unit water are of concern.[14] It has been recommended that practitioners monitor and maintain dental unit water lines and follow manufacturer guidelines to disinfect dental unit waterlines, monitor water quality and bacterial counts (below 500 colony-forming units/mL), use point-of-use water filters, and eliminate dead ends in plumbing where biofilm can form in stagnant water.[14,15] Sterile water and sterile saline in sterile, single-use delivery systems have been recommended for use as a coolant or irrigant during oral surgical procedures or as irrigants for pulp therapy.[5,16,17]

Policy statement

The American Academy of Pediatric Dentistry

- acknowledges the Centers for Disease Control and Prevention's recommendations[4,5] and Occupational Safety and Health Administration's standards[6] for infection control 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 microbial transmission.
- encourages adherence to manufacturers' guidelines for cleaning and disinfecting equipment (including nitrous oxide equipment and water lines).
- 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 dental providers and their 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.

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