

## **RISK MANAGEMENT ARTICLE**

### **Infection Control in Your Dental Practice**

By Amy Dietrich, DDS and Jennifer Flynn, CPHRM

Dental patients and dental health care personnel can be exposed to pathogenic microorganisms that colonize or infect the oral cavity and respiratory tract through means of direct and indirect contact. Not only does it make good business sense to follow infection prevention guidelines to avoid possible litigation, but it is also congruent with dentists' professional responsibilities. The Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control and Prevention (CDC), outline key staff training opportunities and general risk management recommendations that dental practitioners should follow to help protect the health of their patients and co-workers.

#### **OSHA Bloodborne Pathogens Standards**

OSHA is often associated with inspections in hospitals, restaurants, and manufacturers, but they also have the authority to inspect—and fine—dental offices. As an employer, dentists are responsible for protecting their co-workers from hazardous chemicals, ionizing radiation, fire, electrocution, and infections.

OSHA's Bloodborne Pathogens Standard includes information on how to minimize risk of exposure to blood or other potentially infectious material, and actions to take if an exposure occurs.\* As part of this federal standard, OSHA requires that facilities have an Exposure Control Plan (ECP) in place.

Your ECP should include:

- A determination of employee risk exposures
- Steps to implement control measures
- Hepatitis B vaccination protocol
- Post exposure evaluation and follow-up procedures
- Employee hazard education and communication guide
- Record keeping procedures for employee training history
- Procedures for evaluating circumstances surrounding exposure incidents

OSHA requires that ECPs be reviewed and updated on an annual basis. Ensure that staff are educated about the ECP, particularly what to do to prevent exposure and what to do if exposure occurs. This education must occur during work time at no cost to employees.

#### **CDC Education & Training Recommendations**

Infection prevention programs should address staff's occupational health needs beyond training. This includes immunizations and screenings for serious transmissible diseases such as Hepatitis B, mumps, Tdap, the flu, and tuberculosis.

The CDC recommends you ensure your facility has sufficient and appropriate personal protective equipment, and there is a policy in place in the event a staff member is exposed to a patient that has a potentially transmissible condition.

Once you develop an infection prevention and occupational health program:

- Assign at least one individual trained in infection prevention to coordinate office training
- Provide job-specific infection prevention education to all staff members, including contractors and volunteers

\*OSHA has approved 28 state plans as well. Dentists should carefully review their state's specific occupational health and safety requirements, where applicable.

- Maintain training records, review regularly, and solicit feedback to ensure they are up-to-date and effective
- Standardize a defined set of operating procedures to minimize confusion and make the evaluation process easier

### **Dental Water Quality**

Water in dental units must meet EPA regulatory standards for drinking water – which is fewer than 500 colony-forming units (CFU) per milliliter of heterotrophic water bacteria. Research has demonstrated that microbial counts can reach up to 200,000 CFU/ml *within 5 days of installing new dental unit waterlines.*

- To combat accumulation of bacteria, adhere to the manufacturer's specifications for waterline treatment and monitoring of dental water quality
- Use sterile saline or sterile water as a coolant/irrigant when performing surgical procedures
- Use appropriate delivery devices to deliver sterile water during surgery, such as sterile bulb syringes, sterile tube bypass, and other sterile single-use devices

### **The Importance of Monitoring Water Quality: Case Study**

In September 2016, a children's dental clinic in Anaheim, CA, sent a letter to parents requesting their children be examined for signs of infection. The letter indicated the Orange County Health Care agency had found abnormal levels of microbes in the office water used for patient procedures.

- Three confirmed infections and 19 probable infections were linked to the practice
- The three confirmed patients required hospitalization
- The county health agency ordered the practice to stop using its water system
- To stay open the practice installed a new system
- In October 2016, an ex-employee told a local newspaper the staff had not been following proper protocol when flushing water lines
- By February of 2017, over 640 patients were notified, and infections were linked to 67 patients
- The new water system the practice installed failed the county health agency's tests, and the practice closed
- There are currently two lawsuits pending against the dental clinic:
  - One involves a 4-year-old girl who contracted mycobacterium abscesses, and who requires 4 injections per day to fight the infection in her teeth, gums, bones, and tissue
  - The other involves a 3-year-old boy who lost much of his jaw due to an infection
- Plaintiff's attorneys expect there to be as many as 100 lawsuits filed against the practice

This case demonstrates how important it is to the safety of your patients, and the wellbeing of your practice to follow guidelines and recommendations for infection control.

### **Standard Precautions**

Standard precautions are the minimum infection prevention practices that apply to all patient care. These practices are designed to protect dental health care professionals and prevent them from spreading infections to patients. For additional recommendations, visit the CDC and OSHA websites.

### **Hand Hygiene**

Hand hygiene should be performed before and after treating each patient; before putting on gloves; immediately after removing gloves; after barehanded touching of instruments or other objects that are likely to be contaminated by bodily fluids; and when hands are visibly soiled.

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## Personal Protective Equipment

- Gloves should be used whenever there is potential for contact with blood, body fluids, mucous membranes, non-intact skin, or potentially contaminated equipment
- Mouth, nose, and eye protection should be used any time you are performing a procedure that is likely to generate splashes or spattering

## Sharps Safety

- Exercise universal precautions with all sharp items
- Use either a one-handed scoop technique or a mechanical device when recapping needles
- Place used, disposable, sharp items in appropriate puncture-resistant containers

## Safe Injection Practice

The CDC recommends preparing injections using aseptic technique in a clean area, using single-dose vials whenever possible and always using new needles or syringes for each patient, even when obtaining additional doses for the same patient.

## Sterilization & Disinfection of Patient-Care Items and Devices

Cleaning, disinfection and sterilization of dental equipment should be assigned to a staff member who has been trained in the required reprocessing steps to ensure instruments and devices can be safely used for patient care.

## Summary

Implementing infection prevention measures are legally required, and essential to keeping employees and patients safe. Following infection prevention guidelines can help avoid possible litigation, and is congruent with a dentist's or dental practices' professional responsibilities.

### Resources:

CDC DentalCheck Mobile App, CDC, [www.cdc.gov/oralhealth/infectioncontrol/dentalcheck.html](http://www.cdc.gov/oralhealth/infectioncontrol/dentalcheck.html), March 2016.  
Guideline for Hand Hygiene in Health-Care Settings, CDC, [www.cdc.gov/mmwr/PDF/rr/rr5116.pdf](http://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf), October 25, 2002.  
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Medical & Dental Offices: A Guide to Compliance with OSHA Standards, OSHA, [www.osha.gov/Publications/osh3186.html](http://www.osha.gov/Publications/osh3186.html), 2003.  
Model Plans and Programs for the OSHA Bloodborne Pathogens and Hazard Communications Standards, OSHA, [www.osha.gov/Publications/osh3186.html](http://www.osha.gov/Publications/osh3186.html), 2003.  
Workbook for Designing, Implementing and Evaluating a Sharps Injury Prevention Program, CDC, [www.cdc.gov/sharpsafety/pdf/sharpsworkbook\\_2008.pdf](http://www.cdc.gov/sharpsafety/pdf/sharpsworkbook_2008.pdf), 2008.

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