Are You Exposing Yourself - Part II?

Scenario 1

The incident: Michael was in Boston to run in the famed marathon. The day he was to return home he experienced a toothache. He contacted a local dentist (Dr. Band) and was able to get in right away. Dr. B had to give Michael two anesthetic injections. After the first he laid the syringe/needle down on the bracket table. For the second injection Sarah Jane (the chairside assistant) quickly removed the original uncapped needle from the syringe, dropped it in the sharps container, put on a fresh needle, uncapped it and gave the syringe to Dr. B. After the second injection Dr. B immediately passed the syringe/needle back to Sarah Jane. Holding the syringe in her left hand, she carefully moved the thumb and forefinger of her right hand down the barrel of the syringe toward the needle. She grasped the needle hub and twisted it off the syringe. As she was placing the needle in a near-by sharps container she felt a sharp pain in her thumb. She looked more carefully at the sharps container and noted an uncapped anesthetic needle protruding from the opening in the container. Dr. B did not see what happened. Sarah Jane didn’t know what to do, so she just went on about her normal duties and never reported the incident to Dr. B until the end of the day. Dr. B took her to the sink, washed the wound with soap and water, dried it, applied a band-aid and said “it will be alright now”.

Potential consequences:
This scenario presents several chances for both Dr. B and Sarah Jane to receive needlesticks. The consequences of being injured with a contaminated dental needle involve possible percutaneous exposure to bloodborne disease agents and salivary bacteria. These concerns were described in the previous issue of Infection Control in Practice (Volume 9, No. 2, April 2010). Also Sarah Jane did not know what to do after she received a sharps injury, and Dr. B did not follow the proper post-exposure

Learning Objectives

After reading this article, the reader should be able to:

► give examples of how to prevent some percutaneous and airborne occupational exposures;
► state the importance of a post-exposure management plan;
► state the importance of hand hygiene in relation to gloving.
evaluation procedure as required in the Bloodborne Pathogens Standard from the Occupational Safety and Health Administration (OSHA). There was a lack of proper training on how to safely handle sharps, and there was no post-exposure management plan for the office. Thus Sarah Jane did not receive a medical follow-up that would have assessed her approximate risk of acquiring a bloodborne disease and would have provided other medical care, possible prophylaxis and counseling. The importance of immediately reporting a sharps injury is emphasized in this scenario. Michael could have been carrying a bloodborne disease agent, but he was not available for immediate testing of his bloodborne disease status. Also, if any post-exposure prophylaxis would have been deemed appropriate for Sarah Jane, it would have been best to administer the prophylactic agents as soon as possible after the injury, preferably within hours rather than days of exposure.

Another more general consequence of violating the Bloodborne Pathogens Standard is that an employee can report the violation to OSHA, which will spark an investigation.

Prevention:
Passing a syringe with an exposed needle to a co-worker is an unsafe work practice. Dr. B should have safely recapped and discarded the needles himself while he had the syringe in his hand. It just doesn’t make sense to pass an exposed contaminated needle to someone else putting them at risk for a sharps injury. Sarah Jane should have safely recapped the first and second used needles before removing them from the syringe. Also, she should have looked more carefully at the sharps container when disposing of the first and second needles. A good practice is to fill sharps containers no more than three-quarters full to avoid protrusion of sharps through the top.

Training provided to office staff needs to emphasize the importance of immediately reporting incidences of exposure. This is necessary for the prompt implementation of a post-exposure evaluation and follow-up plan, including prophylaxis, as recommended by the Centers for Disease Control and Prevention (CDC) and required by OSHA. Had a proper written Exposure Control Plan been prepared and made available to all employees, it would have contained a post-exposure management plan, and the staff would have known what to do after a sharps injury. For details of such a plan see the Did You Know? section for a tool that is useful in developing a post-exposure management plan that can be adapted to your office.
Scenario 2

The incident:
Endura Vandell went about her morning chores in Dr. Vanroy’s office. She changed into her scrubs, posted the appointment schedule for the day, set out the instrument cassettes for the first patients in both operatories, topped off all the pump soap containers, and placed the plastic barriers on the units. She seated the patients (one for a crown prep and one for an impression), fastened their bibs, washed her hands, gloved and waited for Dr. Vanroy. Since the second assistant had an auto accident on the way to work that morning and did not come in, Endura worked both operatories hurrying back and forth all morning. In one instance she was taking an impression when Dr. Vanroy needed her in the other operatory to use the high-volume evacuator during a difficult crown prep. So she called out for Bertha (the full-time receptionist) to come back to operatory 1. Endura told her to put on a glove and hold the impression tray in place while the alginate set, then told her how to remove the tray. Then Endura quickly removed her gloves, donned a fresh pair and went to help Dr. Vanroy. Endura had felt a little cold all morning and noticed “goose bumps” on her arms. So before she returned to operatory 1 she removed her gloves, put on a sweater and donned a fresh pair of gloves. In the meantime Bertha removed the impression tray, removed and discarded her glove and went back to the front desk. Endura had Dr. Vanroy check the impression and then dismissed her patient.

Potential consequences:
The use of personal protective equipment and the hand hygiene practices in this scenario left much to be desired. By refilling soap containers Endura prolonged the existence of any microbial contaminants that may have entered the pump soap containers. Remember every time you push down on the pump, air (along with any resident microbes) enters the container as the pump recoils. So with time microbial build-up in the container could occur with plain non-antimicrobial soap and possibly some microbes could even be resistant to an antimicrobial soap used. This can cause unnecessary exposure to microbes.

Endura did not perform hand hygiene after removing her gloves and before putting on fresh ones to go help Dr. Vanroy. Also Bertha did not perform any hand hygiene before putting on a glove. Hand hygiene before gloving reduces the transient microbes and some of the resident microbes so that fewer will be there to multiply beneath the gloves. Hand hygiene after removing gloves reduces the number of microbes that multiplied beneath the gloves as well as the transient microbes that may have penetrated the gloves through small tears or pinholes.

Endura was wearing short-sleeved scrubs as her protective clothing while assisting during a crown prep that generates some

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spatter during tooth cutting and air/water rinsing. Thus her forearms were likely contaminated with the patient’s oral fluids. Her next action exemplified cross-contamination when she put on a long-sleeved sweater over those contaminated forearms spreading the microbes to her street clothes.

Having Bertha (who was not wearing the proper personal protective equipment – no mask, protective clothing or eyewear and only one glove) involved in “urgent” chairside assisting demonstrates a good reason for everyone in the office to receive the required bloodborne pathogens training, not just those who regularly have chances for exposure.

Prevention:
Washing out soap containers before refilling them prevents the build-up of contaminating microbes. The use of alcohol hand-rubs for hand hygiene before gloving and after removing gloves can help during busy times. It takes less time than hand washing, rinsing and drying, and is just as good, if not better, than hand washing from a microbiologic point of view.

Wearing long-sleeved protective clothing when there is a chance for contamination of the forearms prevents exposure of skin. Not intermingling work clothes with street clothes helps prevent taking patient’s microbes out of the office.

Adequate training involving a proper Exposure Control Plan can greatly reduce the chances of exposing yourself.

Some related regulations and recommendations:
- “Store liquid hand-care products in either disposable closed containers or closed containers that can be washed and dried before refilling. Do not add soap or lotion to (i.e., top off) a partially empty dispenser” (CDC).4
- “Perform hand hygiene with either a non-antimicrobial or antimicrobial soap and water when hands are visibly dirty or contaminated with blood or other potentially infectious material. If hands are not visibly soiled, an alcohol-based hand rub may also be used” (CDC).4
- “Wear protective clothing (e.g., reusable or disposable gown, laboratory coat, or uniform) that covers personal clothing and skin (e.g., forearms) likely to be soiled with blood, saliva, or other potentially infectious materials” (CDC).4
- “Personal protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee’s work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used” (OSHA).3
- “Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment” (OSHA).3
- There are guidelines for hand hygiene in health-care facilities.6

PS – In case you are wondering, the second assistant was OK after her accident and returned to work the next day.

Did You Know?

Did you know that OSHA has a model Exposure Control Plan that contains a post-exposure management plan that can be completed and used for training and implementation in your office?

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Around the World

GENEVA, Switzerland/Annapolis MD., 25 March 2010
FDI World Dental Federation is participating in an official review of the World Health Organization (WHO) Patient Safety Curriculum Guide (PSCG), together with the Organization for Safety, Asepsis and Prevention (OSAP), the International Federation of Dental Educators and Associations (IFEDA) and other leading global medical profession associations.

Patient safety is a relatively new discipline, aiming to reduce harm to patients caused by healthcare and to identify opportunities for improving patient outcomes. According to the WHO Research Priority Setting Working Group on Patient Safety, tens of millions of patients worldwide suffer disabling injuries or death due to unsafe medical care every year.

Details of the review will be finalized during a consensus meeting at the 2010 OSAP Annual Symposium in June.

Enrique Acosta-Gio, DDS, PhD
National University, Mexico

What’s Wrong With This Picture?

Can you identify any breach in infection control and safety procedures in this photo? Check your answers below.

1) The dentist and dental assistant are not wearing protective eyewear and their forearms are exposed to microbial splatter. The dental assistant’s mask appears to be worn incorrectly (not covering her nose).

2) There is no barrier protection on the headrest and overhead light handles, although cleaning and disinfection of these surfaces could occur.

3) There is no barrier protection on the handles and orthopedic unit.

4) The dentist and dental assistant are not wearing protective eyewear and their forearms are exposed to microbial splatter. The dental assistant’s mask appears to be worn incorrectly (not covering her nose).

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Roadmap to OSAP

If you have received this newsletter from a friend or associate, you can access other helpful resources and timely information on infection control and safety by becoming a member of the OSAP community.

Member resources include:

► OSAP discount on all CE at www.ineedce.com NEW (see Member Orientation at OSAP website for details)
► Growing list of dental issues’ Toolkits posted on website, e.g., see recently added “Hepatitis Be antigen (HBeAg) -positive healthcare workers”
► Written referenced responses to your IC questions (“Ask OSAP”)
► Surface disinfectants chart
► Free online OSAP Guide to CDC Guidelines course
► Weekly and monthly online IC news round-ups
► Annual infection prevention symposium – June 10-13, 2010 in Tampa, FL
► Infection Control Educator’s Toolkit
► Free downloads of mission trip IC guide, traveler’s guide and much more!

Member registration is easy.
Online at www.osap.org or by phone: 1-800-298-OSAP (6727) within the U.S. or 1-410-571-0003 outside the U.S.

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► Individual member (within the U.S.) $110
► Individual member (outside the U.S.) $160
► Web-only member (anywhere) $100
► Student member $25
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Glossary

Exposure Control Plan: A healthcare facility’s written protocol for reducing the risk of occupational exposures.

Sharps Containers: Containers for the disposal of sharps. According to OSHA these should be puncture-resistant, closable, leakproof on the sides and bottom and color-coded or labeled to denote a biohazard.

Post-exposure Prophylaxis: Administration of one or more drugs or biologicals soon after exposure to a disease agent. There are guidelines for prophylaxis against bloodborne diseases.1

Links to Resources

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If you wish to obtain one (1) hour of continuing education (CE) credit, complete the following test by selecting the best answer and fax or mail it to the OSAP Central Office for grading. Please include a check or credit card to cover the handling charges. Pending satisfactory results (at least seven out of ten), you will be issued a letter for one (1) CE credit hour. OSAP is recognized by the American Dental Association as a CERP Provider. For more information, call OSAP at 800-298-6727 (1-410-571-0003).

For each item, pick the best answer.

1. Which takes less time to perform?
   a. Hand hygiene with an antibacterial soap  
   b. Hand hygiene with a non-antibacterial soap  
   c. Hand hygiene with high moisturizing soap  
   d. Hand hygiene using an alcohol hand-rub

2. This article recommends filling sharps containers no more than _________ full to avoid items protruding from the top.
   a. Three-quarters  
   b. Two-thirds  
   c. One-half  
   d. One-quarter

3. According to OSHA personal protective equipment will be considered “appropriate” only if it does not permit blood or other potentially infectious materials to pass through or reach the employee's work clothes, street clothes, undergarments and:
   a. skin.       
   b. skin and eyes.  
   c. skin, eyes and mouth.    
   d. skin, eyes, mouth and other mucous membranes.

4. Which of the following best describes an Exposure Control Plan required for the office?
   a. What to do in case of a pulp-exposure  
   b. How to protect against a skin-exposure to a hazardous chemical  
   c. A healthcare facility’s written protocol for reducing the risk of occupational bloodborne pathogen exposures  
   d. Mechanisms to prevent exposure of sensitive teeth to hot and cold temperatures.

5. Who has prepared guidelines for prophylaxis following occupational exposure to bloodborne disease agents?
   a. U.S. Public Health Service     
   b. Environmental Protection Agency 
   c. National Institute for Occupational Safety and Health  
   d. Association for Professionals in Infection Control and Epidemiology

6. Sarah Jane was exposed to a patient's oral fluids because she did not:
   a. wear a mask.       
   b. practice sharps safety.  
   c. use protective eyewear.  
   d. wear gloves.

7. Which OSHA document required for the office contains a plan for post-exposure evaluation and follow-up?
   a. Vaccine declination statement   
   b. Employee medical record  
   c. Exposure control plan    
   d. Written schedule for cleaning and disinfection

8. Endura Vandell could have prevented her exposures by practicing good hand hygiene and by:
   a. wearing long-sleeved protective clothing. 
   b. using a mask.  
   c. having side shields on her protective eyewear.  
   d. practicing needle safety.

9. Performing hand hygiene before gloving:
   a. sterilizes the skin.  
   b. reduces the number of bacteria that may multiply beneath the gloves.  
   c. makes the gloves fit better.   
   d. prevents the gloves from tearing.

10. According to OSHA sharps containers should be puncture-resistant, leakproof on the sides and bottom, color-coded or labeled and:
    a. round.  
    b. at least 6 inches high.  
    c. made of glass.   
    d. closable.

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What’s it all about?

This issue presents scenarios describing various breaches of safety and infection control protocol in the dental setting that may lead to occupational exposure to bloodborne disease agents.

These include a sharps injury, airborne skin contamination, poor hand hygiene, not wearing proper personal protective equipment, the problems of not knowing what to do after an exposure incident, and putting others at risk for sharps injuries.

- Are you exposing yourself to the patients’ microbes?
- Are you consistently aware of when to use personal protective barriers?
- Do you remember how important it is for you that the office has a post-exposure management plan?
- Has your office Exposure Control Plan been updated this year?
- Why should you practice hand hygiene before gloving?
- Have you received the proper training to allow you to prevent occupational bloodborne exposures?

Read On!

In the next issue... What’s Growing on Your Instruments?