DENTAL INFECTION PREVENTION: WHAT TO DO IN CASE OF A DENTAL

BLOODBORNE EXPOSURE

Infection Prevention Corner KAY C. CARL, RN, BS, CIC

LEARNING OBJECTIVES:

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

- Identify key Occupational Safety and Health Administration (OSHA) requirements for dental healthcare personnel(DHCP) for the prevention of exposure to bloodborne pathogens (BBP);
- list steps to take when an exposure occurs;
- identify resources available for treating an exposure.

AUTHOR'S NOTE:

In preparation for writing the Infection Prevention Column for AzDA's Inscriptions, I try to choose my topics carefully to keep you up to date with Infection Prevention along with practical and cost-effective suggestions to carry out best practices. I did have a different topic in mind for this month's column, but in light of some recent dental BBP exposures that I have been privy to, I feel that exposure protocol is more important to discuss.

Since 1991, I have been working with the AzDA to provide dental staff with information to prepare for an exposure, and we currently are using the OSHA workshops to accomplish this. This course includes all the necessary documentation required in an easyto-use format. But doctors have retired, and new dentists are trying to make a living and can be overwhelmed. I have had many doctors over the years attend the workshops, then call me for direction when an exposure occurs. They just did not have the time to get around to prepare for such an event. It is a hard lesson to learn when you are not prepared for an exposure.

This article was originally published in the Inscriptions May 2007 Infection Control Column before AzDA was providing on-line continuing education credits in conjunction with my articles. So I am providing a more thorough update, along with the quiz for those of you who want to sit in your bunny slippers at your computer and get your "Infectious Diseases and Infectious Disease Control" required CEUs.

HISTORY

GOVERNMENT REGULATIONS

Since 1992, employers of DHCP have been required by federal law to follow OSHA requirements to protect their employees from bloodborne pathogens.¹ In Arizona, we have our own OSHA division under the Industrial Commission of Arizona that basically mirrors the federal requirements. For occupational exposures, OSHA also directs us to follow any new recommendations from the United States Public Health Service (USPHS). Each time a law or recommendation is published in this area, it builds on past documents, so it is important to discuss the history.

OSHA

First let's look at the definition. OSHA law defines occupational exposure as "reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the



performance of an employee's duties."

In dentistry, we deal primarily with percutaneous (parenteral) injuries from used needles, burs and sharp instruments. If the employee is not appropriately wearing personal protective equipment, contaminated splash or splatter to unprotected eyes and mucous membranes and non-intact skin, would also be considered an exposure.

We have been well versed to provide the following OSHA requirements for DHCP for the prevention of exposure to bloodborne pathogens:

- **The standard:** Have a copy of the OSHA law available to the employee.
- **Exposure control plan:** Have a plan that covers prevention and treatment of occupation exposures *that is tailored specifically to your facility.*
- Hepatitis B vaccine: Offer the vaccine to all employees at risk from bloodborne pathogens.
- **Personal protective equipment:** Provide, without charge, appropriate personal protective equipment.
- **Standard precautions:** Treat all patients as if they may have bloodborne pathogens.
- **Engineering controls:** Have physical barriers to prevent employees from needlesticks and other sharps, such as sharps containers.
- Work practice controls: Train employees to embrace strategies that prevent exposure, such as no two-handed recapping needles.
- **Post exposure evaluation/follow-up:** Have a plan of action if an exposure occurs.
- **Cleaning schedule:** Have an appropriate cleaning schedule to reduce the bioburden and prevent exposure to pathogens.
- **Information and training:** Provide information and training of the above.
- **Recordkeeping:** keep records of employee training, vaccinations and exposures and follow-ups as required by law.

In reality, the requirements are two-fold: how to prevent an occupational exposure and how to handle an exposure if it happens. How are we to accomplish this? Most dental facilities have these requirements in place. If not, the Arizona Dental Foundation workshops are geared to set up or improve these areas for your office. In my opinion, the most difficult requirement is to provide appropriate follow-up if an occupational exposure occurs. In January 2001, an additional OSHA law was passed to update requirements for the prevention of sharps injuries and for treatment after a bloodborne exposure. This was the Needlestick and other Sharps Injuries Final Rule.² The new law includes the requirement for post-exposure prophylaxis for HIV exposure and post-exposure testing for hepatitis C. Other requirements of the law are Hepatitis B antibody testing after vaccination, safe sharps evaluation and use, and yearly review and update of your exposure control plan or more often if necessary.

USPHS RECOMMENDATIONS

It became extremely difficult, if not impossible, for many dentists in private practice to follow OSHA law when the USPHS issued Recommendations for Chemoprophylaxis after Occupational Exposure to HIV in July of 1996.³ Basically, they



recommended that after a bloodborne exposure, an employee was to be evaluated as to degree of risk of developing Human Immunodeficiency Virus (HIV). Evaluation of the status of the source patient's HIV infectivity and the invasiveness of the exposure, i.e., deep puncture vs. skin-only, was required. After the evaluation was completed, if warranted, the employee was to be offered Zidovudine (ZDV), an antiretroviral drug used that could possibly prevent HIV disease in the exposed employee, within two hours of the exposure. This regime was named post-exposure prophylaxis (PEP).

In my opinion, the most difficult requirement is to provide appropriate followup if an occupational exposure occurs.

Most dentists did not have a mechanism to carry out these new recommendations if they were practicing in a private dental setting. If they had set up a plan at all, they were relying on private-practice physicians who would test the employee after exposure, but few knew how to properly evaluate and offer PEP to DHCWs. When the infection control professionals of Arizona were presented these new recommendations by representatives from the Center for Disease Control and Prevention (CDC), I appealed to my colleagues to open their doors to the dentists in their community to provide this service. It has been slow in coming. I have had hygienists and dental assistants tell me stories that they were offered no assistance by their employers post exposure and ended up in hospital emergency rooms waiting hours for evaluation, certainly not in the two-hour window recommended. Even if the protocol was followed and testing was done, it was a week before results were known, a very stressful period of time for the exposed employee.

In June of 2001, the USPHS updated their guidelines for the management of occupational exposures to hepatitis B (HVB), hepatitis C (HCV) and HIV and their recommendations for PEP.⁴ Since then we have had additional USPHS recommendations on PEP regimes in a 2005 USPS document⁵, and I am sure there will be more to come.

THE PRESENT

INFECTION PREVENTION

How are you able to keep up with all of this? Do you have an infection control professional dedicated to keeping you current? Well yes, I must admit I have tried to do just that for over 20 years, but have you done your part? Turn-key documentation of a comprehensive Infection Prevention and OSHA program is provided at the Arizona Dental Foundation OSHA workshops. However, if you are too far away to attend these workshops, we plan to offer the CDs for sale at the beginning of next year. More to come on that.

OCCUPATION MEDICAL PROVIDERS

When setting up your program, the most important thing that you should do is secure an agreement with an occupational medical provider. An experienced provider will be up to date with the USPHS recommendations so you do not have to be concerned with what is the proper treatment for your DHCP. These providers offer hepatitis B vaccinations, testing for the Hepatitis B antibody, postexposure evaluation, counseling and treatment, medical follow-up and OSHA-required documentation. They can also test the source patient in a bloodborne exposure and a rapid HIV test can be administered to help determine if the DHCP should be treated with PEP to reduce their risk of developing HIV. It is estimated that the PEP can reduce the risk approximately 80%. OccMed providers can also provide other immunizations for your employee health programs and can accurately provide and interpret TB skin tests. Currently, in our larger cities, there are hospitals that are offering dental practices OccMed services. These facilities provide the same offerings as they do to

their own employees and are usually supervised by a physician who is an occupational medicine specialist. In rural areas, I suggest you call your local hospital and ask to talk to someone in employee health to see if the facility will offer service to your dental practice. If there is no employee health person, ask to speak to the infection prevention professional and ask them for help. Do not be surprised if you get turned down. In many rural settings, these professionals wear many hats and do not have the resources to respond to your needs. If no luck there, talk to your fire and police departments to see who handles their employee exposures and go to that physician or service.

Be prepared ahead of time, not after the fact. These occupational medical faculties only want you to agree to pay your bill if you use their services, so there should be no cash outlay unless there is an event. Remember that the two-hour window is most ideal. There is little time to do the right thing if you have not set up your agreement. If you have an agreement in place, the process necessary to deal with an exposure is a lot less stressful than trying to patch together a plan on the spur of the moment.



STEPS TO TAKE WHEN THERE IS AN EXPOSURE

• Determine if it is an exposure

Was the skin punctured? Was the instrument used on a patient or had it been sterilized? Was there eye, mucous membrane or nonintact skin contaminated with blood or saliva?

• Render first aid

The wound and skin sites should be washed with soap and water. An exposed mucous membrane should be flushed with water. Rinse exposed eyes at your eyewash station. It is inappropriate to vigorously express blood or pour bleach or

▶ INFECTION PREVENTION CORNER: Continued from Pg 34

other disinfectants on the wound. Doing so may compromise the tissue and leave it more open to infection. You may apply an antiseptic after cleansing the site.

• Try to determine the source patient.

If the source patient can be identified, in the State of Arizona it is a law that the source patient must be asked to submit to blood tests for hepatitis B, hepatitis C and HIV. With the rapid HIV testing now available, this reduces risk to the DHCW as the window for the drug prophylaxis can more easily be met. State laws do vary as to whether you are allowed to ask the source patient to test, but it is a USPHS recommendation and makes the evaluation and treatment more comprehensive. If it is determined that the source patient is infected with HBV, HCV, or HIV, he or she should be referred for appropriate counseling and treatment. Confidentiality of the source person should be maintained at all times.

Notify your occupational medical provider Vour provider should have an experienced

Your provider should have an experienced person manning the hotline and can help determine what the next step should be. They can analyze the situation and recommend whether further action should be taken. A good provider will not recommend the HIV PEP unless it is absolutely necessary. These drugs can be toxic, require close monitoring and are not to be used indiscriminately.

• Documentation:

An incident report must be filled out indicating engineering controls in use and work practices followed during the procedure that was being performed when the incident occurred. Details should include the description of the device being used, the location of the incident and protective equipment or clothing that was used at the time of the exposure. Insurance forms and workers' compensation forms may also need to be completed. Your OccMed provider should make available documentation of the medical follow up to the DHCP. Records of the incident must be kept confidential for at least the duration of employment plus 30 years.

• Prevention:

The exposure incident should be analyzed. Could it have been avoided? What can be done to prevent a similar situation in the future? If it is determined that revisions need to be made, appropriate changes should be made to the OSHA exposure control plan. Changes may include an evaluation of safer work practice controls and adding employees to the exposure determination list. The cost of prevention is exceedingly less than treatment of an exposure. The cost of prevention is exceedingly less than treatment of an exposure.

IN SUMMARY

- Have a comprehensive Infection Prevention and OSHA program in place at your dental facility.
- The most important thing you can do to protect your employees and yourself is secure an agreement with an experienced occupational medical provider before an exposure occurs.

As always if you have any questions, feel free to email me at <u>Kay@azda.org</u>

REFERENCES

¹ United States Department of Labor Occupational Safety and Health Administration, Bloodborne Pathogens. Standard 1910.1030, Available from: <u>http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051</u>. Accessed August 1, 2012.

² U.S. Department of Labor Occupational Safety and Health Administration, Occupational Exposure to Bloodborne Pathogens; Needlestick and Other Sharps Injuries; Final Rule. -6666:5217-5325. Available from: <u>http://www.osha.gov/pls/ oshaweb/owadisp.show_document?p_table=FEDERAL_ REGISTER&p_id=16265</u>. Accessed August 1, 2012.

³ Centers for Disease Control and Prevention U.S. Department of Health and Human Services, Public Health Service Update: Provisional Public Health Service Recommendations for Chemoprophylaxis after Occupational Exposure to HIV. MMWR Morb Mortal Wkly Rep June 7, 1996; Vol 45, no. 22:468-472.

⁴ Centers for Disease Control and Prevention Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV and HIV for postexposure Prophylaxis. MMWR Morb Mortal Wkly Rep June 29, 2001; Vol 50, No.RR-11. <u>http://www.cdc.gov/mmwr/PDF/RR/</u> <u>RR5011.pdf</u>. Accessed August 1, 2012.

⁵ Centers for Disease Control and Prevention Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis. MMWR Morb Mortal Wkly Rep September 30, 2005; Vol 54 (RR09); 1-17. Available from: <u>http://www.cdc.gov/</u> <u>mmwr/PDF/rr/rr5409.pdf</u>. Accessed August 1, 2012.

Kay Carl is board certified in infection control and epidemiology. She has over 35 yrs experience in infection control and has worked in collaboration with AzDA since 1991 to provide CE in OSHA, infectious diseases and infection control. She is a prolific contributing author and editor for various industry print and electronic media.

