Bloodborne Pathogens & Occupational Exposures

Bloodborne Pathogens and Aerosols (7/07)

Question: What is the risk of bloodborne pathogens such as hepatitis B virus (HBV) and HIV being transmitted through aerosols generated during the use of an ultrasonic scaler or high-speed dental handpiece?

Answer: The Centers for Disease Control and Prevention (CDC) has addressed this topic on their Web site. First it's important to distinguish between spatter and aerosols. A visible spray is created during the use of air-water syringes and rotary dental and surgical instruments such as handpieces and ultrasonic scalers. This spray contains primarily a large-particle spatter of water, saliva, blood, microorganisms, and other debris. This spatter travels only a short distance andsettles out quickly, landing either on the floor, nearby operatory surfaces, dental personnel providing care, or the patient. This spatter can commonly be seen on face shields, protective eyewear, and other surfaces immediately after the dental procedure, but after a short time it may dry clear and not be easily detected. The spray may also contain some aerosol. Aerosols take considerable energy to generate, consist of particles less than 10 microns in diameter, and are not typically visible to the naked eye. Aerosols can remain airborne for extended periods of time and may be inhaled. Aerosols should not be confused with the large-particle spatter that makes up the bulk of the spray from handpieces and ultrasonic scalers. To prevent contact with splashes and spatter, dental personnel should position patients properly and make appropriate use of personal protective equipment (e.g., face shields, surgical masks, gowns), rubber dams, and high-velocity air evacuation.

While it is known that bloodborne pathogens can be transmitted through mucous membrane exposure, there are no known instances of a bloodborne pathogen being transmitted by an aerosol in a clinical setting. In studies conducted in dental operatories and hemodialysis centers, hepatitis B surface antigen could not be detected in the air during the treatment of hepatitis B carriers, including during procedures known to generate aerosols. This suggests that detection of HIV in aerosols would also be uncommon, since the concentration of HIV in blood is generally lower that that of HBV. Finally, detection of HIV in an aerosol would not necessarily mean that HIV is readily transmissible by this route. In the health-care setting, the major risks of HIV infection are blood contact due to percutaneous injuries and, to a lesser extent, mucous membrane and skin contact. The possibility that HIV may be transmitted via aerosolized blood must be considered theoretical at this time.

Selected References

1. Bond WW, Petersen NJ, Favero MS, et al. Transmission of type B viral hepatitis via eye inoculation of a chimpanzee. J Clin Microbiol 1982;15:533–534.
2. CDC. Bloodborne Pathogens and Aerosols. Available at: www.cdc.gov/oralhealth/infectioncontrol/faq/aerosols.htm. Accessed July 2007.
3. Cole EC, Cook CE. Characterization of infectious aerosols in health care facilities: an aid to effective engineering controls and preventive strategies. Am J Infect Control 1998;26:453–464.

4. Favero MS, Bolyard EA. Microbiologic considerations. Disinfection and sterilization strategies and the potential for airborne transmission of bloodborne pathogens. Surg Clin North Am 1995;75:1071–1089.
5. Garner JS. Hospital Infection Control Practices Advisory Committee guideline for isolation practices in hospitals. Infect Control Hosp Epidemiol 1996;17:53-80.
6. Heinsohn P, Jewett DL. Exposure to blood-containing aerosols in the operating room: a preliminary study. Am Ind Hyg Assoc J 1993;54(8):446–453.
7. Johnson GK, Robinson WS. Human immunodeficiency virus-1 (HIV-1) in the vapors of surgical power instruments. J Med Virol 1991;33:47–50.
8. Miller RL. Characteristics of blood-containing aerosols generated by common powered dental instruments. Am Ind Hyg Assoc J 1995;56:670–676.
9. Petersen NM, Bond WW, Favero MS. Air sampling for hepatitis B surface antigen in a dental operatory. J Am Dent Assoc 1979;99:465-467.
10. Petersen NJ. An assessment of the airborne route in hepatitis B transmission. Ann NY Acad Sci 1980;353:157–166.

Return to Top

AF Form 570 Discontinued (4/07)

Question: We haven't received any AF Form 570s from Public Health recently. If applicable, are we required to obtain and keep a copy of this form in the dental record?

Answer: The Air Force Medical Operations Agency (AFMOA) issued a policy letter in 2002 discontinuing the requirement for Public Health (PH) to notify the dental clinic of patients diagnosed with an infectious disease. (Click here for additional information). Previously, PH forwarded an AF Form 570, Notification of Patient's Medical Status, to the dental clinic. The AF Form 570 was placed inside the patient's dental record until the patient was no longer considered infectious. This form was a communication tool between PH and the dental clinic. All dental clinics are effectively using Standard Precautions and the knowledge that a patient has an infectious disease does not change this process. All dental health-care personnel (DHCP) must continue to use Standard Precautions and promptly report any occupational exposure to blood and/or body fluids to their designated dental clinic point of contact. All patients must continue to complete a comprehensive medical history (AF Form 696) which is reviewed upon initial and return dental visits. If DHCP providing care feel the need for additional information on the patient's health status, they can obtain the patient's medical record and/or consult with the patient's physician.

Return to Top

Bloodborne Pathogens Training (10/06)

Question: Does OSHA have specific requirements that must be covered during bloodborne pathogens training? Does DECS have a briefing that we can use in our clinic?

Answer: The Occupational Safety and Health Administration (OSHA) (www.osha.gov/SLTC/dentistry/index.html) requires that certain elements be covered during initial and annual training (see below for minimum requirements). There is a briefing on bloodborne pathogens on the DECS Web site that can be used to help meet the annual requirement; however it will be necessary to supplement the DECS briefing with information specific for your workplace. Examples of items that would require additional discussion may include how employees in your clinic can obtain a copy of your facility exposure control plan and the OSHA bloodborne pathogens standard; the types of personal protective equipment (PPE) available in your clinic and the storage location; the procedures that employees in your clinic are to follow if an occupational exposure incident (e.g., needlestick, splash of blood or saliva to the eye) occurs; and the method(s) used in your clinic to label regulated waste. OSHA requires training upon initial employment, when new tasks or procedures affect the employee's occupational exposure; and at a minimum, annually.

Elements to Include in Bloodborne Pathogens Training
- An explanation of the OSHA Bloodborne Pathogens Standard (29 CFR Part 1910.1030). - A general explanation of the epidemiology and symptoms of bloodborne diseases. - An explanation of the modes of transmission of bloodborne pathogens. - An explanation of the facility exposure control plan and how to obtain a written copy. - An explanation of appropriate methods for recognizing tasks that may involve exposure to blood and other potentially infectious materials (e.g.,saliva). - An explanation of the use and limitations of methods that will prevent or reduce exposure, including engineering controls, work practices and personal protective equipment (PPE). - Information on PPE, including types of PPE available, storage location, removal, handling, decontamination, and disposal. - An explanation of the basis for selection of personal protective equipment. - Information on the hepatitis B vaccine, including efficacy, safety, method of administration, benefits of being vaccinated, and that the vaccine will be offered at no charge. - Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials (e.g.,saliva). - An explanation of the procedure to follow if an exposure incident occurs, including how to report the incident and the medical follow-up that will be made available. - Information on the postexposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident. - An explanation of the signs, labels, and color-coding for regulated waste. - Allow an opportunity for questions and answers with the individual conducting the training. *Reference: US Department of Labor Occupational Safety and Health Administration 29 CFR Part 1910.1030 Occupational Exposure to Bloodborne Pathogens, Needlestick and Other Sharps Injuries; Final Rule. Federal Register 2001; 66 (12); 5317-25. As amended from and includes Federal Register 1991 29 CFR Part 1910.1030 Occupational Exposure to Bloodborne Pathogens; Final Rule. 56(235);64174-82.*

Return to Top

Exposure Control Plan (6/06)

Question: Is the dental clinic required to have a written exposure control plan?

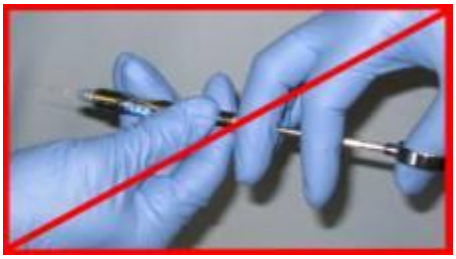
Answer: Each medical treatment facility (MTF) is required by the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) to maintain a written exposure control plan (ECP) to minimize and manage health-care personnel exposure to blood and body fluids. The ECP must be accessible to employees; available to OSHA upon request; and reviewed and updated at least annually. The annual review must include the consideration and implementation of appropriate commercially available medical devices designed to eliminate or minimize occupational exposure.

USAF dental services are not required to prepare a separate, comprehensive, exposure control plan if they are covered under the MTF or installation plan. However, dental service specific procedures for protection of employees from occupational exposure to bloodborne pathogens should be incorporated into the dental infection control or occupational safety operating instructions when an installation or MTF plan covers the dental service.

Return to Top

Safe Procedures while Passing Syringes (5/06)

Question: I know that we're not supposed to pass anesthetic syringes with uncapped needles during operative procedures, but is this practice "ok" during oral surgery procedures?



Answer: Passing a syringe with an uncapped needle is unsafe during any procedure. Both the CDC Guidelines for Infection Control in Dental Health-Care Settings-2003 and the USAF Guidelines for Infection Control in Dentistry recommend against this practice. Specifically the USAF guidelines state "Do not pass syringes with unsheathed needles." This applies to both non-surgical and surgical procedures.

Return to Top

Standard vs. Universal Precautions (11/05)

Question: What is the difference between universal and standard precautions?

Answer: Universal precautions were based on the concept that all blood and body fluids that might be contaminated with blood should be treated as infectious because patients with bloodborne infections can be asymptomatic or unaware they are infected. The relevance of universal precautions to other aspects of disease transmission was recognized, and in 1996, the Centers for Disease Control and Prevention (CDC) expanded the concept and changed the term to standard precautions*. Standard precautions integrate and expand the elements of universal precautions into a standard of care designed to protect health-care personnel and patients from pathogens that can be spread by blood or any other body fluid, excretion, or secretion. Standard precautions apply to contact with 1) blood; 2) all body fluids, secretions, and excretions (except sweat), regardless of whether they contain blood; 3) nonintact skin; and 4) mucous membranes. Saliva has always been considered a potentially infectious material in dental infection control; thus, no operational difference exists in clinical dental practice between universal precautions and standard precautions.

Standard Precautions must be used in the care of all patients, regardless of their infection status; however for some patients measures in addition to standard precautions may be necessary. These additional precautions known as expanded or transmission-based precautions are used to interrupt the potential spread of those diseases (e.g., tuberculosis, influenza, and chicken pox) that are transmitted by airborne, droplet, or contact transmission (e.g., sneezing, coughing, and contact with skin). Necessary additional precautions might include patient placement (e.g., isolation), adequate room ventilation, respiratory protection (e.g., N-95 masks) for dental health-care personnel (DHCP), or postponement of nonemergency dental procedures. When treating patients requiring additional precautions, DHCP should always follow current medical treatment facility (MTF) guidance and recommendations in the most current CDC isolation guidelines (www.cdc.gov/hicpac/pubs.html).

*Note: OSHA's bloodborne pathogen standard retains the term universal precautions.

Selected References and Additional Resources

1. CDC. Recommendations for prevention of HIV transmission in health-care settings. MMWR 1987;36(suppl No. 2S).
2. CDC. Guidelines for infection control in dental health-care settings – 2003. MMWR 2003; 52(No. RR-17):1–66.
3. Garner JS. Guideline for isolation precautions in hospitals. The Hospital Infection Control Practices Advisory Committee. Infect Control Hosp Epidemiol 1996;17:53–80.
4. Molinari JA. Infection control: its evolution to the current standard precautions. J Am Dent Assoc 2003;134:569–574.

5. US Department of Labor, Occupational Safety and Health Administration. 29 CFR Part 1910.1030. Occupational exposure to bloodborne pathogens; needlesticks and other sharps injuries; final rule. 6. Federal Register 2001;66:5317–25. As amended from and includes 29 CFR Part 1910.1030. Occupational exposure to bloodborne pathogens; final rule. Federal Register 1991;56:64174–82.

Return to Top

Responsibility for Providing Contract Workers with the Hepatitis B Vaccine (Originally published in the Sep 1998 issue of InCONTROL)

Question: Our dental clinic employs contract dental workers. Who is responsible for offering them the hepatitis B vaccine?

Answer: According to OSHA the “employer” is responsible for offering HBV immunization, training, and testing. Ask the question, “Are the personnel coming into your facility hired by someone else who the command contracts for the services, or are they independent contractors who contract directly with the command?” In the first instance, it should be written into the contract who will be responsible for offering the vaccine. In the second instance, because the command is the employer contracting directly with the individual workers, it is responsible for immunizations, training, and testing. It is always advisable to check with your Comptroller or whoever is writing the contracts.

Return to Top

Work Restrictions for Dental Health-Care Personnel with Infectious Diseases (Updated May 2010)

Question: Does DECS have any information outlining procedures to follow when dental health-care personnel are diagnosed with an infectious disease?

Answer: Decisions on work restrictions are based on the mode of transmission, the epidemiology of the disease, and the period of infectivity of the disease. This can mean exclusion of personnel from work or patient contact until the disease resolves, or in some cases seeking counsel from an expert review panel to determine work restrictions. Ultimately, it is the responsibility of the local health-care facility to implement measures to prevent further transmission of infection. A summary of suggested work restrictions for health-care personnel exposed to or infected with infectious diseases of importance in health-care settings (in the absence of state or local regulations) appears in:

CDC. Guidelines for infection control in dental health-care settings — 2003. MMWR 2003; 52 (No. RR-17):8—9. Available at www.cdc.gov/oralhealth/infectioncontrol/guidelines/index.htm.

Click here for a summary table of suggested work restrictions for health-care personnel from the Centers for Disease Control and Prevention (CDC) Guidelines for Infection Control in Dental Health-Care Settings — 2003. For health-care personnel infected with hepatitis B virus (HBV), hepatitis C virus (HCV), and/or the human immunodeficiency virus (HIV), also see reference #8.

For some infectious diseases, it is easier to determine appropriate work restrictions than others (i.e., individuals with active varicella [chickenpox] should be excluded from duty until all lesions dry and crust). For individuals diagnosed with bloodborne virus diseases (e.g., HBV, HCV, HIV), several issues need to be addressed. Air Force Instruction 44-102, Medical Care Management, addresses the evaluation process for health-care personnel infected with HIV and HBV. Most likely it will be necessary to convene an expert review panel to determine the scope of practice of infected health-care personnel. This is in agreement with recommendations from the CDC and the Society for Healthcare Epidemiology of America (SHEA). SHEA published updated recommendations regarding the management of health-care providers who are infected with HBV, HCV, and/or HIV in 2010. The updated SHEA guideline now includes recommendations for health-care personnel infected with HCV, whereas in the past the CDC did not recommend any restrictions or special measures beyond following aseptic technique and Standard Precautions. The SHEA guideline also includes a detailed table (see Table 2 in the SHEA guideline) categorizing health-care associated procedures, including dental procedures, according to the level of the

risk for bloodborne pathogen transmission.

The expert review panel should consist of individuals knowledgeable on the most current recommendations for infected health-care personnel and infectious diseases. The decision is made at the local level as to panel membership (e.g., Chief of the Medical Staff/Chief Nurse Executive, credentials committee, infectious disease physician, infection control committee). The expert review panel determines, on a case-by-case basis, what practice restrictions should be imposed, taking into account specific procedures the clinician performs, as well as skill and technique of the worker. Also, state regulations (i.e., the individual's state of licensure and the state where the individual is practicing) should be taken into account. Emphasis should be on adherence to infection control measures (e.g., Standard Precautions, work practice and engineering controls) to prevent exposure of patients or providers to blood, and not on prohibiting infected health-care personnel from participating in patient-care activities solely on the basis of their bloodborne pathogen infection.

In addition to the Table in the 2010 SHEA guidelines, the following definitions from previous CDC publications may be discussed during the decision-making process.

Exclude from duty—exclusion from the health-care facility and from health-care activities outside the facility. Individuals who are excluded from duty should avoid contact with susceptible persons both in the facility and in the community.

Exposure-prone procedure—characteristics of these procedures include digital palpation of a needle tip in a body cavity or the simultaneous presence of a clinician's fingers and a needle or other sharp object in a poorly visualized or highly confined anatomic site.

Invasive procedure—"surgical entry into tissues, cavities, or organs or repair of major traumatic injuries" associated with any of the following: "1) an operating or delivery room, emergency department, or outpatient setting, including both physicians' and dentists' offices; 2) cardiac catheterization and angiographic procedures; 3) a vaginal or cesarean delivery or other invasive obstetric procedure during which bleeding may occur; or 4) the manipulation, cutting, or removal of any oral or perioral tissues, including tooth structure, during which bleeding occurs or the potential for bleeding exists."

References and Additional Resources:

1. Air Force Instruction 44-102, Medical Care Management. Available at www.e-publishing.af.mil. Accessed May 2010.
2. American Dental Association: Resource Manual for Support of Dentists with HBV, HIV, TB and Other Infectious Diseases.
3. Bolyard EA, Tablan OC, Williams WW, Pearson ML, Shapiro CN, Deitchman SD and The Hospital Infection Control Practices Advisory Committee. Guideline for infection control in health care personnel, 1998. Am Journal of Infection Control 1998;26:299—301. Available at www.cdc.gov/ncidod/dhqp/gl_hcpersonnel.html. Accessed May 2010.
4. CDC. Guidelines for infection control in dental health-care settings — 2003. MMWR 2003; 52 (No. RR-17):1—66.Available at www.cdc.gov/oralhealth/infectioncontrol/guidelines/index.htm. Accessed May 2010.
5. CDC. Recommendation for prevention of HIV transmission in health-care settings. MMWR 1987;36 (suppl. no. 2S):6S—7S. Available at www.cdc.gov/mmwr/preview/mmwrhtml/00023587.htm. Accessed May 2010.
6. CDC. Recommendations for preventing transmission of HIV and HBV to patients during exposure-prone invasive procedures. MMWR 1991;40(RR-8):1—9. Available at www.cdc.gov/mmwr/preview/mmwrhtml/00014845.htm. Accessed May 2010.
7. Chiarello LA, Cardo DM, Panililio A, Alter, MJ, Gerberding JL. Risks and prevention of bloodborne virus transmission from infected healthcare providers. Seminars in Infection Control 2001;1:61—72.
8. Henderson DK, Dembry L, Fishman NO, Grady C, Lundstrom T, Palmore TN, Sepkowitz KA, Weber DJ, Society for Healthcare Epidemiology of America. SHEA guideline for management of healthcare workers who are infected with hepatitis B virus, hepatitis C virus, and/or human immunodeficiency virus. Infect Control Hosp Epidemiol 2010;31:203–232. Available at www.journals.uchicago.edu/doi/full/10.1086/650298. Accessed May 2010.

Return to Top

Risk of Disease Transmission with Bone Grafts (Originally published in May 2003)

Question: What is the risk of disease transmission with bone allografts during periodontal procedures?

Answer: An allograft is a graft between genetically dissimilar members of the same species. An allograft may be obtained from living donors who are having bone removed during surgery or cadaveric donors. Allograft material has been used for more than 30 years in periodontal therapy. There are several types of allografts:

1. Fresh, fresh-frozen
2. Freeze-dried bone allograft (FDBA)
3. Demineralized freeze-dried bone allograft (DFDBA)

Both FDBA and DFDBA materials are widely used in periodontal therapy and there are no reports of disease transmission during the 30-year history of using freeze-dried bone allografts. However, there have been four cases of human immunodeficiency virus (HIV) infection following procedures using fresh-frozen bone allografts. These cases involved surgeries of the spine, hip, and knee. It is important to note, however, that fresh-frozen and fresh allografts are not typically used in periodontal therapy. Also, when using FDBA and DFDBA, the delay in processing ensures adequate time for testing for potential pathogens.

Most bone banks adhere to the guidelines of the American Association of Tissue Banks (AATB) with respect to procurement, processing, and sterilization of bone grafts. The AATB advocates excluding collection of bone under the following circumstances:
- Donors from high-risk groups, as determined by medical testing and behavioral risk assessments.
- Donors test positive for HIV antibody by ELISA.
- Autopsy of donor reveals occult disease.
- Donor bone tests positive for bacterial contamination.
- Donor and bone test positive for hepatitis B surface antigen (HbsAG) or hepatitis C virus (HCV).
- Donor tests positive for syphilis.

Using donor-screening recommendations, it has been calculated that the chance of obtaining a bone graft from an HIV-infected donor (e.g., one who failed to be excluded by one of the exclusionary techniques) is one in 1.67 million [Buck 1994]. Furthermore, the probability that DFDBA might contain HIV has been calculated to be one in 2.8 billion [Russo 1995]. Therefore, the established exclusionary criteria combined with recommended processing procedures (harvesting in a sterile manner, repeated washings, immersion in ethanol, freezing in liquid nitrogen, freeze-drying, demineralization, and vacuum sealing) render DFDBA and FDBA grafts safe for human implantation.

Adapted from CDC Infection Control: Bone Allografts: www.cdc.gov/oralhealth/infectioncontrol/faq/allografts.htm

Selected References and Additional Resources

1. American Academy of Periodontology Position Paper: Tissue banking of bone allografts used in periodontal regeneration, J Periodontol 2001;72:834-838.
2. Buck BE, Malinin T, Brown MD. Bone transplantation and human immunodeficiency virus. Clin Orthop 1994;303:8-17.
3. CDC. Epidemiologic notes and reports transmission of HIV through bone transplantation: case report and public health recommendations. MMWR 1988;37:597-599.
4. CDC. Guidelines for preventing transmission of human immunodeficiency virus through transplantion of human tissue and organs. MMWR 1994;43(RR-8);1-17.
5. Mellonig JT. Donor selection, testing, and inactivation of the HIV virus in freeze-dried bone allografts. Pract Periodontics Aesthet Dent 1995;7:13-22.
6. Mellonig JT, Prewett AB, Moyer MP. HIV inactivation in a bone allograft. J Periodontol 1992;12:979-983.
7. Russo R, Scarborough N. Inactivation of viruses in demineralized bone matrix. FDA workshop on tissue transplantation and reproductive tissue, June 20-21 1995, Bethesda, MD.
8. Simmonds RJ, Holmberg SD, Hurwitz RL, et al. Transmission of human immunodeficiency virus type 1 from a seronegative organ and tissue donor. NEJM 1992;326:726-732.

Return to Top

Postexposure Prophylaxis Following an Occupational Exposure Incident (Originally published in September 2003)

Question: What are the correct procedures following an exposure to blood or other potentially infectious materials?

Answer: Answer: An exposure can be defined as a percutaneous injury (e.g., needlestick or cut with a sharp object) or contact of mucous membrane or non-intact skin (e.g., exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, saliva, tissue, or other body fluids that are potentially infectious. Exposure incidents might

place dental health-care personnel at risk for hepatitis B virus (HBV), hepatitis C virus (HCV), or human immunodeficiency virus (HIV) infection, and therefore should be evaluated immediately following treatment of the exposure site by a qualified health-care professional.

The following steps are recommended by the Centers for Disease Control and Prevention (CDC) for postexposure prophylaxis (PEP). The CDC provides an HIV PEP treatment hot line if questions about treatment or advice are needed. Call 1-888-448-4911, if desired.

1. Provide immediate care to the exposure site.
- Wash wounds and skin with soap and water.
- Flush mucous membranes (e.g., eyes, nose, mouth) with water.
- No evidence exists that using antiseptics for wound care or expressing fluid by squeezing the wound further reduces the risk of bloodborne pathogen transmission.

2. Complete the exposure report and refer to the qualified healthcare professional for evaluation and follow-up. The exposure report should include:

- date and time of exposure - details of the procedure being performed - details of the exposure (e.g., percutaneous injury, skin or mucosa contact, nonintact skin)	- details about the exposure source (e.g., HBV, HCV, HIV status) - details about the exposed person (e.g., hepatitis B vaccination and vaccine-response status)

3. Follow Public Health Service/CDC guidelines for postexposure testing and management.
- Evaluate the exposure source (if known and permitted by law).
- For unknown sources, assess risk of exposure to HBV, HCV, or HIV infection.
- Do not test discarded needles or syringes for virus contamination.
- Evaluate the exposed individual.

4. Give postexposure prophylaxis (PEP)* for exposures posing risk of infection transmission, perform follow-up testing, and provide counseling.

HBV	HCV	HIV
- Give PEP as soon as possible, preferably within 24 hours - Test for anti-HBs 1-2 months after last dose of vaccine if only vaccine given. - Follow-up not indicated if exposed person immune to HBV or received hepatitis B immunoglobulin.	- PEP not recommended - Perform testing for anti-HCV and ALT 4-6 months after exposure. - Perform HCV RNA testing at 4-6 weeks if earlier diagnosis of HCV desired. - Confirm repeatedly reactive anti-HCV enzyme immunoassays with supplemental tests.	- Initiate PEP within hours of exposure. - Evaluate exposed persons taking PEP within 72 hours after exposure and monitor for drug toxicity for at least 2 weeks. - Administer PEP for 4 weeks if tolerated. - Perform HIV-antibody testing for at least 6 months postexposure (e.g., baseline, 6 weeks, 3 months, and 6 months). - Perform HIV antibody testing for illness compatible with an acute retroviral syndrome occurs. - Advise exposed persons to use precautions to prevent secondary transmission during the follow-up period.

* A complete description of PEP for HBV, HCV, and HIV can be found in

1. CDC. Updated U.S. Public Health Service guidelines for the management of occupational exposures to HBV, HCV, and HIV and recommendations for postexposure prophylaxis. MMWR 2001;50(No.RR-11): 1-52. Available at: www.cdc.gov/niosh/topics/bbp/guidelines.html. Accessed January 2011.
2. CDC. Updated U.S. Public Health Service guidelines for the management of occupational exposures to HIV and recommendations for postexposure prophylaxis. MMWR 2005;54(No. RR-9):1–17. Available at: www.cdc.gov/niosh/topics/bbp/guidelines.htm. Accessed January 2011.

For a complete summary of managing an occupational blood exposure incident please see the Occupational Exposure Incidents Involving Bloodborne Pathogens *InControl* Fact Sheet on the DECS Web site.

Return to Top

Hepatitis B Vaccine (Originally published in the Sept 2003 issue of InCONTROL)

Question: Should I be tested for antibodies to hepatitis B after I complete the hepatitis B vaccine? Are boosters for the hepatitis B vaccine indicated?

Answer: Dental health-care personnel who perform tasks involving contact with blood, blood-contaminated body fluids, other body fluids, or sharps should receive the hepatitis B vaccination. Vaccination should be completed before any contact with blood; it will protect both dental personnel and patients from hepatitis B virus infection.

Dental health-care personnel should be tested for antibody to hepatitis B surface antigen (anti-HBs) one to two months after completing the 3-dose vaccine. Knowledge of antibody response aids in determining appropriate post-exposure prophylaxis or need for revaccination. Persons who do not respond adequately to the vaccine should complete a second 3-dose series or be evaluated to determine if they are hepatitis B surface antigen positive. Revaccinated persons should be retested after completing the second vaccine series. Individuals who do not respond to an initial 3-dose vaccine series have a 30–50% chance of responding to a second 3-dose series. If a protective antibody response (>10mIU/ml) develops after vaccination, vaccinated persons are considered completely protected against clinical illness.

The Centers for Disease Control and Prevention does not currently recommend booster doses of hepatitis B vaccine and periodic serologic testing to monitor antibody concentrations after completing the vaccine series. As additional information becomes available, the possible need for booster doses will be evaluated.

References

1. CDC. Hepatitis B virus: a comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination. MMWR 1991;40(No.RR-13).
2. CDC. Immunization of health-care workers: recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC). MMWR 1997;46(No. RR-18).
3. CDC. Recommended Infection-Control Practices for Dentistry, 1993. MMWR 1993;41(RR-8):1–12. CDC. Updated U.S. Public Health Service guidelines for the management of occupational exposures to HBV, HCV, and HIV and recommendations for postexposure prophylaxis. MMWR 2001;50(No.RR-11): 1–52.
4. US Department of Labor Occupational Safety and Health Administration 29 CFR Part 1910.1030 Occupational Exposure to Bloodborne Pathogens; Needlestick and Other Sharps Injuries; Final Rule. Federal Register 2001; 66 (12); 5317-25. As amended from and includes Federal Register 1991 29 CFR Part 1910.1030 Occupational Exposure to Bloodborne Pathogens; Final Rule. 56(235);64174-82.

Return to Top