Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services

Paul R. LePage, Governor Mary C. Mayhew, Commissioner

GUIDELINES TO PREVENT TRANSMISSION OF HIV, HEPATITIS B, AND HEPATITIS C THROUGH MEDICAL/DENTAL PROCEDURES

BACKGROUND

All medical and scientific data confirm that the risk of transmission of human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV) is extremely low and largely preventable through strict adherence to barrier precautions and infection control practices that decrease the opportunity of blood-to-blood exposure for both health care personnel and patients.

Since HIV was first isolated in 1983, only four instances of HIV transmission from infected health care providers to one or more patients have been reported: one cluster occurred in the United States in 1990, two occurred in France, and one in Spain *(1)*. The United States cluster involved suspected transmission of HIV from a dentist to six patients. In each of the three cases occurring in France and Spain only one patient was found to be infected, despite exhaustive look-back investigations. More than four dozen additional look-back studies have been conducted evaluating the HIV status of patients identified as having received medical or dental care from an HIV-infected provider, and none of these studies have identified transmission of HIV infection.

The risk of HBV transmission through medical/dental procedures is several times greater than HIV. Over 50 instances of provider-to-patient transmission of HBV have been reported in the literature *(1)*. These cases commonly involved breakdowns in infection control during procedures in which a health care worker's hands were within a body cavity and injury to the worker caused bleeding into the patient. Although such clusters continue to occur, they appear to be occurring less frequently than in the past. This is likely the result of increased vaccination of healthcare workers against HBV.

There have been at least seven cases of provider-to-patient transmission of HCV in the United Kingdom, most commonly associated with exposure-prone procedures *(1)*. The experience in the United States is quite different, and injection drug use by the provider and drug diversion appear to play a more central role in provider-to-patient HCV transmission *(1)*.

Since the onset of the AIDS epidemic, both the federal Centers for Disease Control and Prevention (CDC) and Maine Agencies, public and private, have issued recommendations to healthcare providers and healthcare facilities emphasizing the importance of strict adherence to

infection control standards and use of barrier precautions to minimize exposure to bloodborne pathogens in medical/dental settings.

In July 1991, federal CDC issued "Recommendations for Preventing the Transmission of HIV and Hepatitis B to Patients During Exposure-prone Invasive Procedures," *(2)* and in September of 1991 Congress passed a law directing all states to adopt these CDC recommendations or equivalent standards by October 1992. In 1992, the Maine subcommittee to evaluate recommendations for preventing transmission of HIV/Hepatitis B by health care workers (established at the request of the Committee to Advise the Department of Human Services in AIDS) drafted a policy based on a review of the available scientific and medical data regarding the risk of HIV transmission through medical/dental procedures *(3, 4)*. In July 2012, CDC published updated recommendations for the management of hepatitis B virus-infected health-care providers and students *(5)*.

This document updates and replaces the previous 1992 Maine Department of Human Services' policies and proposed actions to protect all citizens from exposure to bloodborne pathogens during medical/dental procedures and to ensure that infected healthcare providers will be treated in accordance with sound scientific and ethical principles. This policy extends the previous policy to include guidelines for the management of healthcare workers who are infected with hepatitis C virus. The following recommendations are largely based on the "Guideline for Management of Healthcare Workers Who Are Infected with Hepatitis B Virus, Hepatitis C Virus, and/or Human Immunodeficiency Virus" of the Society for Healthcare Epidemiology of America (SHEA) *(1)* and the revised CDC recommendations for the management of HBV-infected healthcare providers and students *(5)*, which incorporate the clinical experience of the past two decades as well as recent knowledge about the epidemiology, pathogenesis, and diagnosis of HIV, HBV, and HCV.

POLICY AND IMPLEMENTATION RECOMMENDATIONS

Bloodborne Pathogen Education and Infection Prevention and Control

All healthcare providers and trainees should receive comprehensive education concerning bloodborne pathogens. All healthcare providers should practice Standard Precautions, including the appropriate use of hand washing, protective barriers, and care in the use and disposal of needles and other instruments. Healthcare providers should also comply with current guidelines for disinfection and sterilization of reusable devices used in patient care procedures.

Educational efforts and monitoring related to the implementation of the Occupational Safety and Health Administration's (OSHA) regulations for protecting healthcare workers from bloodborne pathogens should be a priority *(6)*. In addition to implementing OSHA regulations, each Maine healthcare institution should assure that all healthcare workers are informed about the risks associated with bloodborne pathogen transmission and the importance of being fully informed about their infection status.

Maine DHHS recommends that formal training in, and compliance with, infection control processes be required by all healthcare institutions to qualify for credentialing in those institutions.

Vaccination of Healthcare Workers against HBV

HBV is currently the only bloodborne virus for which a vaccine is available. The Advisory Committee on Immunization Practices (ACIP) strongly recommends that all healthcare workers be vaccinated against (or have documented immunity to) hepatitis B *(7)*. Vaccination should occur during professional training and before any occupational exposures could occur. Pursuant to the Department's *Immunization Requirements for Healthcare Workers*, designated healthcare facilities[1] must require all employees to provide proof of immunization or documentation of immunity to hepatitis B virus *(8)*. In addition, the OSHA Federal Standard (29 CFR 1910.1030(f)(1)(i) (effective July 6, 1992)) requires employers to offer hepatitis B vaccine free of charge to employees who are occupationally exposed to blood or other potentially infectious materials *(6)*. Prevaccination serologic testing is not indicated for most persons being vaccinated, except for those providers and students at increased risk for HBV infection *(7)*, including those born to mothers in or from endemic countries and sexually active men who have sex with men *(9)*. CDC also recommends that providers who are performing exposure-prone procedures also should receive prevaccination testing for chronic HBV infection *(2)*.

Testing of Employees for Bloodborne Viruses

It is in the interest of all healthcare workers to know their HIV, HBV, and HCV status in order to obtain appropriate treatment, make necessary lifestyle modifications, and avoid transmission of virus to others. Voluntary testing without fear of public disclosure or discrimination is the best means of encouraging people at risk for HIV, HBV and HCV to seek counseling and testing. Mandatory screening of all Maine healthcare workers would be extremely costly and would not produce any appreciable gain in public safety. According to Maine law, HIV testing must be voluntary and undertaken only with a patient's knowledge and understanding that an HIV test is planned (MRSA, Title 5, Part 23, Chapter 501, §19203-A) *(10)*. Maine law also provides that an employee or applicant for employment may not be required to submit to an HIV test or reveal whether the employee or applicant obtained an HIV test as a condition of employment or to maintain employment, except when based on a bona fide occupational qualification (BFOQ) (MRSA, Title 5, §19204-B) *(11)*. As a BFOQ can be established only on a case by case basis, an HIV test cannot be made a standard condition of employment.

Providers who conduct exposure-prone procedures that have been designated as being associated with an increased risk for provider-to-patient transmission *(1, 2)* should be educated about the importance of knowing their infection status with respect to HIV, HBV and HCV for their own health benefit as well as for the safety of the patients for whom they provide care.

[1] Designated Healthcare Facility is defined as "a licensed nursing facility, residential care facility, Intermediate Care Facility for the Mentally Retarded (ICF/MR), multi-level health care facility, hospital, or home health agency."

A provider who knows that he or she is the source of a patient exposure to his or her blood or hazardous body fluid should report the exposure and should undergo testing for infection with bloodborne pathogens.

Management of Healthcare Workers Who Are Infected with Hepatitis and/or Human Immunodeficiency Virus

Bloodborne pathogen infection alone does not justify limiting a healthcare providers's professional duties. Practitioners who are institutionally based and who develop a bloodborne pathogen infection are ethically bound to report their infection to their institution's occupational medicine providers and to engage in processes such as those outlined in SHEA's "Guideline for Management of Healthcare Workers Who Are Infected with Hepatitis B Virus, Hepatitis C Virus, and/or Human Immunodeficiency Virus" and/or CDC's "Updated Recommendations for the Management of Hepatitis B Virus-Infected Health-Care Providers and Students" *(1, 2)*. Practitioners who are not institutionally based who develop a bloodborne pathogen infection are ethically bound to engage the state health department Expert Review Panel as described below. Limitations, if any, should be determined on a case-by-case basis after consideration of the factors that influence transmission risk, including inability or unwillingness to comply with infection prevention and control standards or functional impairment that interferes with job performance.

Institutional-level Expert Review Panels

Healthcare facilities and agencies should be able to develop institution-based committees as needed to develop policies and procedures regarding healthcare providers with bloodborne infections, to serve as resources in their institutions for providers infected with HIV, HBV, and/or HCV. These committees should establish Expert Review Panels for assisting the institution in managing providers infected with bloodborne pathogens. The entity chartering the panel should indemnify the panel members against any legal risks and/or costs. The composition of the institutional-level expert review panel and the activities of the panel should be based on established guidelines such as those set forth in the SHEA Guidelines or CDC's for HBV-Infected Health-Care Providers *(1, 2)*.

State Expert Review Panel

Maine CDC, DHHS, will convene a State Expert Review Panel for individual reviews on a case-by-case referral basis for those situations in which a provider infected with HIV, HBV, or HCV is not affiliated with an institution that has its own Institutional-level Expert Review Panel. The process may be initiated by a healthcare provider with HIV, HBV or HCV infection, the healthcare provider's employer, or the Maine CDC. This panel may also be accessed for appeal of a local or institution-based decision or when a provider prefers the state panel to a local or institution-based panel. The individual practice reviews are entirely voluntary unless Maine CDC has reason to believe a significant threat to public health exists, at which time the Maine CDC may initiate the review panel process.

Requests to initiate the review process should be made to Maine CDC by contacting the State Health Officer (1-800-821-5821). Requests will be screened by Maine CDC to obtain necessary information, including but not limited to the nature of the healthcare provider's work and the willingness of the infected healthcare provider to participate in the review panel process.

Composition of State Expert Review Panels: The panel would be appointed by the State Health Officer and would include persons from diverse disciplines including:

1. A Maine CDC representative with HIV, HBV, and/or HCV expertise
2. Individuals who have expertise in the infected provider's specialty or subspecialty, healthcare epidemiology, infectious diseases or hepatology (specifically with expertise in the bloodborne pathogen[s] being discussed), occupational medicine, and/or hospital administration
3. The infected provider's physician
4. A human resources professional
5. An individual with legal and/or ethics expertise
6. The provider referred for review would be notified of the request for evaluation, if the referral was not initiated by the provider him/herself, and he/she would be encouraged to bring an advocate or any other support person to the meeting

The purpose of such panels is to provide timely advice and consultation on an individual's risk of bloodborne disease transmission through his/her professional practice and to recommend practice limitations, modifications, or restrictions where the evidence suggests there is a significant risk to patients.

The evaluation process will be confidential except for the following circumstances:

1. To adequately evaluate healthcare providers who are institutionally based, the panel – directly or through its designees – may request information about the healthcare provider's practice from the facility.
2. If practice restrictions are recommended, the individual involved shall verify to the panel that all healthcare facilities in which the healthcare provider practices are informed. If verification is not forthcoming, the panel will inform such facilities. Within all settings, the usual rules of confidentiality apply.

Work Practice Modifications

Any modification of work practice must seek to impose the least restrictive alternative based on the guidelines listed above and in accordance with federal disability laws. Any healthcare provider who feels that his/her employment may be, or has been, restricted or terminated without just cause may ask for an evaluation from a Department of Health and Human Services State Expert Review Panel.

Enforcement of Practice Restrictions

Healthcare facilities should ensure that healthcare providers who are in their employ or who provide patient care from their facilities follow any practice limitations recommended by institutional panels. If practice limitations are recommended for a community-based healthcare provider, periodic monitoring to ensure compliance should be performed by the appropriate licensing board with the professional's consent. If a healthcare provider does not follow the practice restrictions or if compliance is uncertain, the appropriate state licensing/certification/permit board will be notified.

Protecting Confidentiality

As are all Maine residents, HIV-infected healthcare providers are entitled to protection under the Maine State HIV Confidentiality Law (5 M.R.S.A. §§19201-19208). Such providers are not required to disclose their HIV status to patients or employers.

Healthcare facilities are not required under Maine law to disclose to patients the HIV status of an infected healthcare provider in their employ; such disclosure, without the consent of the worker, would likely be a violation of Maine's HIV Confidentiality Law. Maine state law does not afford the same legal protection against the disclosure of information about hepatitis infection. The Health Insurance Portability and Accountability Act (HIPAA) applies only to protected health information of persons receiving healthcare services, not to the health information of healthcare providers gathered by their employers. Accordingly, information relating to the HIV, hepatitis B and hepatitis C status of a healthcare provider is not subject to protection under HIPAA, unless the healthcare provider is receiving treatment from the employing healthcare employer.

Notification of patients that they were exposed to the blood or potentially infectious body fluid of a healthcare provider should be based on documentation of an injury to a provider that could have resulted in the provider's blood or body fluid coming into direct contact with a patient's bloodstream or mucous membranes. In such circumstances, the healthcare provider should undergo the same testing as would the source of an exposure to a healthcare worker. The patient should be advised to receive testing for potential bloodborne infections and should be offered postexposure prophylaxis or other follow-up if indicated. The Maine CDC, DHHS, will be available to assist hospitals or individual providers in determining if a significant risk of exposure to bloodborne pathogens warrants notification of patients.

UPDATES

This plan is expected to be reviewed within 3 years of full implementation or sooner if the available evidence dictates to assess the need for policy changes or additional implementation recommendations.

REFERENCES

1. Henderson DK, Dembry L, Fishman NO, et al. SHEA Guideline for Management of Healthcare Workers Who Are Infected with Hepatitis B Virus, Hepatitis C Virus, and/or Human Immunodeficiency Virus. *Infection Control and Hospital Epidemiology* 2010; 31(3):204–232. Available at: http://www.shea-online.org/Assets/files/guidelines/BBPathogen_GL.pdf. Accessed on 8/27/2012.
2. Centers for Disease Control and Prevention. Recommendations for Preventing Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Patients During Exposure-Prone Invasive Procedures. *MMWR Morb Mortal Weekly Report, Recommendations and Reports,* 1991; 40(RR08):1–9.
3. Maine State Department of Human Services, Bureau of Health. "Policy Statement and Guidelines to Prevent Transmission of HIV and Hepatitis B Through Medical/Dental Procedures."

4. Maine State Department of Human Services. "Procedures for Evaluation of Maine Health Care Workers with Human Immunodeficiency Virus or Hepatitis B Virus Infections."
5. Centers for Disease Control and Prevention. Updated CDC Recommendations for the Management of Hepatitis B Virus-Infected Health-Care Providers and Students. *MMWR Morb Mortal Weekly Report, Recommendations and Reports,* 2012;61(3):1–12. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6103a1.htm. Accessed on 8/27/2012.
6. United States Department of Labor. OSHA's Bloodborne Pathogens. Standard No. 1910.1030. Available at: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10051. Accessed on February 6, 2012.
7. Centers for Disease Control and Prevention. Immunization of Health-Care Personnel. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Weekly Report, Recommendations and Reports,* 2011; 60(RR07):1–45.
8. Maine State Department of Human Services, Bureau of Health. Chapter 264. Immunization Requirements for Healthcare Workers. Available at: http://www.maine.gov/dhhs/mecdc/rules/rules-emergency-immunizations-for-hcws(final)-10-6-09.pdf. Accessed on February 6, 2012.
9. Centers for Disease Control and Prevention. Recommendations for Identification and Public Health Management of Persons with Chronic Hepatitis B Virus Infection. *MMWR Morb Mortal Weekly Report, Recommendations and Reports,* 2008; 50(RR11).
10. Maine Revised Statutes, Title 5, Part 23, Chapter 501, Section 19203-A. Voluntary informed consent required. Available at: http://www.mainelegislature.org/legis/statutes/5/title5sec19203-A.html. Accessed on February 6, 2012.
11. Maine Revised Statutes, Title 5, Part 23, Chapter 501, Section 19204-B. Restrictions on requiring tests or results of tests. Available at: http://www.mainelegislature.org/legis/statutes/5/title5sec19204-B.html. Accessed on February 6, 2012.