

MICHIGAN RECOMMENDATIONS
ON
HIV, HEPATITIS B, AND HEPATITIS C-INFECTED
HEALTH CARE WORKERS

Revised

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Division of Health, Wellness and Disease Control

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MICHIGAN RECOMMENDATIONS ON HIV, HEPATITIS B, AND HEPATITIS C- INFECTED HEALTH CARE WORKERS

INTRODUCTION

In May 1991, the Michigan Department of Public Health (now the Michigan Department of Community Health) convened an Ad Hoc Committee to develop recommendations on HIV and hepatitis B-infected (HBV) health care workers (HCWs). The Committee included representatives from medical, dental, nursing, infection control, ethical, legal, and public health disciplines in Michigan. In September 1992, the document entitled *Michigan Recommendations on HBV-Infected and/or HIV-Infected Health Care Workers* was published and distributed.

This document updates previous information, and recommends refinement of the recommendations made in 1992. This revision also includes recommendations on hepatitis C-infected (HCV) HCWs which were excluded from the 1992 edition because HCV had been only recently discovered. At that time, few epidemiologic and laboratory data were available to support guidelines related to HCV.

BACKGROUND

In July 1990, the Centers for Disease Control & Prevention (CDC) reported the first case of possible transmission of HIV to a patient from an HIV-infected HCW. Follow-up investigation strongly suggests that six additional patients were infected by this health care worker (**Ciesielski et al. 798**). The exact cause of HIV transmission remains unclear but is thought to be related to failure to follow proper infection control procedures. The fact that transmission was reported in 1990, however, launched a public outcry for guaranteed safety from acquiring HIV from HCWs. Fear of transmission from infected HCWs was rampant, and in 1991, the CDC published *Recommendations for preventing transmission of human immunodeficiency virus and Hepatitis B virus to patients during exposure-prone invasive procedures (2)*.

Since 1990, there have been two additional documented reports of possible transmission of HIV from an infected HCW to a patient. The first of these was a single case reported in 1997 involving an orthopedic surgeon in France with advanced symptomatic but undiagnosed HIV disease (**Lot et al. 130:1-6**). The second case was also reported in France, which resulted from nurse to patient transmission (**Gougou et al. 74:2525-32**).

While the risk of HIV transmission is considered extremely low, the risk of HBV and/or HCV transmission from infected HCW to patient, or vice versa, is much greater. Over the past

12 years, greater attention has been given to the risk of transmission of HBV, and especially from HCV-infected HCWs.

Risk of HIV, HBV and HCV Transmission

A. Health Care Worker Exposures to HIV, HBV and HCV

The average risk of HIV infection after a percutaneous exposure (needlestick or cut exposure) to HIV-infected blood is 0.3% or 1 in 300. The risk after a mucous membrane exposure is approximately 0.09% or 1 in 1,000. The risk after exposure of non-intact skin to HIV-infected blood is estimated to be less than 0.1% (**Barlett 8**).

The risk of HBV infection is primarily related to the degree of contact with blood in the work place and also to the Hepatitis B e antigen (HbeAg) status of the source person (**Gerberding 594-595**). For a susceptible person, the risk from a single needlestick or cut exposure to HBV-infected blood ranges from six to thirty percent and depends on the HbeAg status of the source individual. While there is a risk for HBV infection from exposures of mucous membranes or non intact skin, there is no known risk for HBV infection from exposure to intact skin. Health care personnel who have received Hepatitis B vaccine and developed immunity to the virus are at virtually no risk for infection. (**Barlett 8**).

The risk for infection after a needlestick or cut exposure to HCV-infected blood is approximately 1.8%. The risk following a blood exposure to the eye, nose or mouth is unknown, but is believed to be very small; however, HCV infection from blood splash to the eye has been reported (**Barlett 8**).

B. Transmission of a Bloodborne Pathogen from an HCW to a Patient

When the original recommendations (**2**) on infected HCWs were developed by the CDC in 1991, there was a great deal of fear about the potential for transmission of HIV from infected HCWs to patients.

The risk for transmission of a bloodborne pathogen from an HCW to a patient is associated with the circulating titer of the pathogen in blood, the procedures performed, techniques and infection-control precautions used, and the medical condition of the HCW. (**CDC 1993**)

Between 1972 and 1994, there were 42 HBV-infected HCWs, primarily surgeons or dentists, with documented transmission of disease to over 375 patients (**Esteban et al. 555**). In one of the largest reports, 13% of 144 patients treated by one surgeon became infected (**CDR Weekly 5-26**). Although transmission risk in health care settings is higher for HBV than for HIV, the number of clusters of HBV transmission from HCW to patient has dropped significantly since the early 1990s. Compared to HIV, HBV infection is usually not chronic, is much less frequently fatal, and can be prevented through an effective pre-

and/or post-exposure vaccination program.

Testing for Hepatitis C began in 1990, so the extent of occupational and nosocomial transmission of HCV before then is unknown. Since 1990, the literature has documented a cluster of cases of transmission of HCV from a cardiothoracic surgeon to multiple patients **(Dore, Kaldor, and McCaughan 333)**. With that exception, reported transmission of HCV from HCWs to patients has been rare **(Gostin 140)**.

Although transmission of HCV has a shorter history, factors such as high viral load, etc. have been linked to increased risk of transmission.

Continuing Debate About Recommendations

There are currently millions of HCWs in the United States, some of whom are infected with HIV, and/or others who are infected with HBV or HCV. Exclusionary policies regarding HIV-infected HCWs, as recommended in CDC's 1991 guidelines, have resulted in the loss of professional services, the loss of the educational investment, and the personal loss to the individual HCW -- the latter of which has been the subject of intense debate over the past several years.

In 2000, Gostin proposed that the national policy regarding disclosure of HCWs infected with HIV, HBV, or other bloodborne pathogens be revised. He recommended that HCWs no longer be required to disclose their infection status to a patient. Gostin maintains that careful attention to infection control techniques, coupled with practice restrictions for HCWs who are impaired, who have exudative lesions, or who have been involved in transmitting a bloodborne pathogen, will adequately protect the public's health. He argues that national policy should change in a way that is protective of the interest of the infected HCW **(Gostin 1965)**. While Gostin is respected for his expertise in the complex legal and ethical fields, there are other experts who disagree with him. The debate over the best approach to balance patient safety and HCW occupational concerns continues.

RECOMMENDATIONS

Based upon current scientific information, the following recommendations have been adopted by MDCH to provide protection for patients and HCWs alike. These guidelines should become part of the infection control guidelines for all health care facilities.

Infection Control

1. All HCWs must continually adhere to universal precautions developed by CDC **(13)**, including the appropriate use of handwashing and personal protective equipment.
2. Care must be observed in the use and disposal of needles and sharp instruments to

minimize percutaneous exposure to infected blood. Devices with engineered safety features should be utilized wherever possible to prevent unnecessary risks to HCWs and patients **(OSHA 1992)**.

3. HCWs must comply with current recommended guidelines for disinfection and sterilization of reusable devices **(APIC 1996)**.
4. HCWs who have exudative lesions or weeping dermatitis of the hands, forearms, or other body locations that may touch patients, should refrain from performing invasive procedures, and from handling patient care equipment and devices used in invasive procedures until the condition resolves.

Training

5. Training of HCWs in proper infection control technique should begin in professional and vocational schools. All HCWs should receive training on universal precautions, personal protective equipment, and other scientifically accepted infection control practices. Ongoing training, at least annually, should be conducted to continually reinforce proper infection control practices and to inform practitioners of any new infection control procedures and safety devices.

Hepatitis B Vaccination

6. All HCWs who are susceptible to HBV infection should undergo Hepatitis B vaccination, as prescribed by the Occupational Safety and Health Administration (OSHA) standards on Bloodborne Pathogens **(14)**. Vaccinated HCWs should be tested to ensure that they have responded to the vaccination series.

Medical Devices

7. Medical devices, including sharps with engineered safety protection, and safe work procedures that further reduce the risk of exposure to the blood and body fluids of the patient and the HCW, should be used whenever possible **(OSHA 1996)**.

Testing of Health Care Workers

8. Routine or mandatory HIV, HBV, and/or HCV testing of all HCWs is not recommended, nor should it be a requirement for employment, credentialing, licensure, or insurance.
9. HCWs are encouraged to be aware of their HIV, HBV (including both HBsAg and HBeAg), and HCV serologic status and seek treatment to reduce the risk of transmission of bloodborne pathogens to sexual contacts and patients through unanticipated occupational exposures.

Confidentiality and Informed Consent

10. All confidentiality laws must be followed to protect the identity of infected HCWs. Protecting confidentiality will encourage HCWs to be tested. The Michigan Public Health Code (MCL 333.5131, as amended) states that all reports, records and data pertaining to testing, care, treatment, reporting, and research associated with HIV infection and acquired immunodeficiency syndrome (AIDS) are confidential.
11. Counseling and written informed consent should always be requested prior to HIV testing. The Michigan Public Health Code (MCL 333.5133) requires written informed consent prior to ordering an HIV test. The Code does allow for an exemption to written informed consent if a patient is informed in writing upon admission to the health facility that an HIV test may be performed upon the patient without his/her written consent, if a health professional or other health facility employee sustains a percutaneous, mucous membrane or open wound exposure to the blood or other body fluids of the patient.

Disclosure and Practice Restrictions For Infected Health Care Workers

12. If a HCW is positive for HIV, HBV, and/or HCV, and if the infected HCW performs invasive procedures that have been documented to result in the transmission of bloodborne pathogens, he/she should be encouraged to inform his/her employer, professional organization, and/or his/her advisory panel (see #15 below).
13. All health care workers who are infected with HIV should be followed up by a medical practitioner who is an expert and experienced in the management of HIV. This medical expert should advise the infected HCW and discuss any practice restrictions that may be appropriate.
14. Limiting the practice of HIV, HBV and/or HCV-infected HCWs who perform **non-invasive procedures** is inappropriate given the extremely low risk of transmission from HCW to patient, as well as the negative consequences of practice restrictions. The practice of an HIV, HBV and/or HCV-infected HCW should be modified only if there is clear evidence that the HCW poses a risk of transmitting HIV, HBV and/or HCV: a) through an inability to meet basic infection control standards; b) because of personal medical conditions; c) because of evidence of previous transmission of blood borne infections; or d) because the HCW is functionally (mentally or physically) unable to care for patients.
15. HCWs who **perform invasive procedures** that have been shown to result in bloodborne pathogen transmission from HCW to patients, and HCWs who are HIV, HBV and/or HCV-infected, should practice only after evaluation of their knowledge and ability to adhere to recommended infection control practices. Alternatively they may practice under recommendations of an expert review panel (convened by the healthcare facility), composed of state or local public health officials, an infectious

disease specialist, and a health professional with expertise in the procedures performed by the infected HCW.

16. Because the risk of transmitting HBV to patients is considerably higher than either HIV or HCV, it is recommended that an expert review panel be consulted regarding practice restrictions of HBeAg-positive HCWs who perform invasive procedures that have been shown to result in transmission of HBV to patients.
17. HCWs who modify their practices because of HIV, HBV and/or HCV infection should, whenever possible, be provided opportunities to continue appropriate patient care activities. Career counseling and job retraining should be encouraged to promote the continued use of the HCW's talents, knowledge, and skills.

Informing Patients of Health Care Worker Status

18. Infected HCWs are not routinely required to disclose their HIV, HBV or HCV status to patients. However, any HCW who exposes a patient to his or her blood/body fluids is ethically bound to inform the patient of this exposure and to undergo testing as appropriate. Facilities should have procedures in place to assure disclosure and appropriate testing and follow-up of patients who are inadvertently exposed to infected HCWs' blood.
19. If an infected HCW's serostatus becomes known, any notification of patients should be considered on a case-by-case basis taking into consideration: 1) whether actual exposure has occurred; 2) an assessment of the specific risks; 3) confidentiality issues; and 4) available resources. Any decision to notify patients should be made in consultation with local and state public health officials along with the infected HCW, if available.

Enforcement of Recommendations

20. Infected HCWs who fail to comply with the preceding recommendations may be subject to sanctions, as specified in sections 5203 and 5205 of the Public Health Code (Act 368 of 1978, as amended), and/or disciplinary action by appropriate licensing boards.

Implementation

The Michigan Department of Community Health encourages the development and adoption of policies consistent with these recommendations by all health care institutions and private practice settings. In addition, all health care-related professional organizations should use these recommendations for the development of effective policies for their members.

The Department will provide consultation and assistance to local areas, as needed. The Department, along with local health departments, will continue active surveillance of HIV,

HBV and HCV infection, with special attention given to cases of potential health care worker-to-patient transmission.

KEY WORDS AND TERMINOLOGY

Exposure: Percutaneous, mucosal, or surgical exposure to the blood or internal body fluids of a patient or health care worker. Exposure is not synonymous with transmission of an infectious agent.

HBeAg: Hepatitis B e antigen – marker of high level of infectiousness.

HBsAg: Hepatitis B surface antigen – indicates current infection with HBV with some potential to infect others.

HBV: *Hepatitis B virus.*

HCV: *Hepatitis C virus.*

Health Care Worker (HCW):

Persons, including students and trainees, whose activities involve physical contact with patients or with blood or other body fluids from patients in the health care setting.

HIV: Human Immunodeficiency Virus

Infected Health Care Worker:

Any health care worker who is infected with one or more of the following: HIV, HBV (HBsAg and/or HBeAg), and/or HCV.

Invasive Procedure:

A procedure in which there is a potential for transmission of bloodborne pathogens to occur. This includes 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.

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INFORMATION SOURCE

Reproduction of this document is encouraged. Printed copies of these recommendations can be obtained by writing to the Michigan Department of Community Health, Division of Health, Wellness and Disease Control at 109 Michigan Avenue, 10th Floor, Lansing, Michigan 48913 or by calling (517) 241-5900.