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OKLAHOMA COOPERATIVE EXTENSION SERVICE

Hepatitis B Virus and HIV Infections: Background Information, Regulations, and Precautions

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This fact sheet focuses on hepatitis B virus (HBV) and human immunodeficiency virus (HIV) and their relationship to the new 1992 Occupations Safety and Health Administration (OSHA) Standard. Many of us, as consumers of health care services and/or as employer/employees, are potentially exposed to HBV or HIV.

The new OSHA standard applies to both employers and employees. As consumers, our health is affected indirectly by whether precautions by employees are taken with potential sources of HBV and HIV.

Among the United State's five million health care workers, approximately 1,200 acquire HBV on the job. About 200 workers die each year from HBV. The Centers for Disease Control and Prevention (CDC) have verified that some HIV positive health care workers are employed in both outpatient care and in patients' homes.

The term viral hepatitis includes hepatitis A, hepatitis B, and hepatitis C. Formerly, hepatitis A was called infectious hepatitis and hepatitis B was called serum hepatitis.

In 1992, viral hepatitis cases numbered:

Type	*Number of Cases*
A	19,081
B	13,587
C	5,172

What is HBV (hepatitis B virus)?

Hepatitis B virus causes hepatitis B infections. The long incubation period of HBV is about 120 days. HBV causes nausea, loss of appetite, vomiting, abdominal pain, and jaundice. Skin rashes, joint pains and arthritis could also occur. Some individuals become carriers of HBV.

HBV is spread by contaminated needles, blood, and sexual contact. Some individuals become carriers of HBV. These carriers have the risk of developing liver cancer. A pregnant woman may pass the virus to her developing fetus.

How serious is hepatitis?

Nearly all persons with hepatitis A recover completely after treatment. About 90 percent of those with hepatitis B recover. Rarely does death occur in the United States from hepatitis C. Persons with congestive heart failure, diabetes, severe anemia, and the elderly recover more slowly from hepatitis.

Who needs HBV vaccination?

Workers need to understand that some jobs could put one at risk for HBV. Anyone who handles items contaminated with blood or other infectious body fluids are at risk and should consider being vaccinated against HBV. The hepatitis B vaccine is

noninfectious and is given in three injections in the arm. The second injection is given one month after the first. The third injection is given six months after the first injection. However, it is not yet known how long the vaccination gives protection; hence, booster shots may be needed in the future.

Persons who should be vaccinated include:

- emergency responders
- law enforcement officers
- health care workers
- correctional facilities' staff
- first aid personnel
- laundry workers
- dry-cleaners
- fire fighters
- morticians
- family members of HB patients

How can hepatitis be controlled in the home?

Hepatitis in the home is controlled by:

- faithfully washing one's hands after going to the bathroom.
- thorough washing if in contact with an affected person's feces, blood, or any body fluid. (Also see paragraph: How can HIV and HBV be destroyed.)

What is HIV (human immunodeficiency virus)?

HIV is the name given the virus which causes AIDS (acquired immunodeficiency syndrome). HIV is a retro-virus and can make copies of itself using a person's body cells. HIV attacks the body's immune system. It can also directly infect the brain and central nervous system.

How is HIV spread?

AIDS is spread by blood cells that are infected with HIV and then passed from one person to another. The infected blood cells are transmitted when blood, semen, vaginal fluids, or breast milk enter the body. A person whose job requires handling items contaminated with blood or other infectious body fluids is at risk; therefore, precautions should be taken to guard him/her against infection. Individuals testing positive to the HIV antibody are carriers of the AIDS virus.

How can HIV or HBV be destroyed?

Wash skin surfaces immediately after contamination with blood or body fluids. Wash hands after removal of gloves. Other surfaces can be ridded of HIV or HBV by:

- alcohol or household bleach
- chemical germicides, i.e., 70 percent isopropyl alcohol, two percent glutaraldehyde, 1-8 percent formaldehyde, 3-6 percent hydrogen peroxide or 0.5-3 percent phenolic compounds.

Destroying HIV requires about 1-2 minutes, while HBV requires 20-30 minutes.

What is the new OSHA (Occupations Safety and Health Administration) Standard?

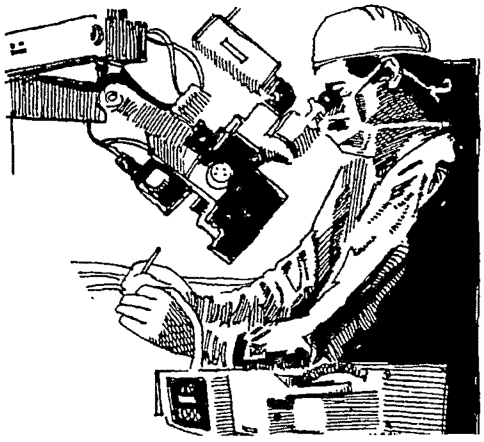
The OSHA Standard protects health care workers who are exposed to bloodborne pathogens in work places such as:

- emergency rooms
- mortuaries
- operating rooms
- ambulances
- laboratories
- fire-fighting situations
- where syringes and needles are used
- where blood and blood products are located

The OSHA Standard applies to employers with one or more employees. It is the responsibility of the employer to determine which duties expose workers to bloodborne pathogens.

Bloodborne pathogens are bacteria and viruses in human and experimental animal blood which can cause disease. HBV and HIV are bloodborne pathogens.

Workers who might be exposed to blood and other infectious materials must be given personal protective equipment such as gloves, eye protection, masks, and gowns to help protect them. The protective equipment also prevents the spread of bloodborne bacteria and viruses from one person to another. However, the workers need to remember that they are protecting themselves and others, too.



Why do health professionals require protective clothing and equipment?

The HIV survives only in a liquid medium, however, it has not been determined how long it can live in every situation. The HIV is very small and can pass into the body through chapped hands, cuts, scratches, and acne. The OSHA Standard specifies that all employees in contact with potentially contaminated laundry wear gloves or other protective attire. Personal protective equipment include gloves, goggles, masks, face shields, lab coats, gowns, footwear, and respirators. Fluid resistant apparel may be necessary to prevent soak-through to the employee's clothing.

Who provides personal protective equipment (PPE)?

Necessary PPE should be provided by an employer with no cost to the employee. Although the OSHA Standard does not list specific protective equipment, the equipment should be appropriate to the particular task. The employer must also provide for no-cost cleaning, disposal, replacement, or repair of all PPE. Gloves can be reused as long as they do not show signs of peeling, cracking, or tearing. Because much of the personal protective equipment and linens used are made from cleanable textiles, many individuals are concerned about how employees of laundries and dry cleaning establishments are protected when handling contaminated items.

Are persons who handle contaminated laundry included under the OSHA Standard?

Yes, the OSHA standard also applies to laundries and dry cleaners. All employees are covered under the Standard. Employees included are route persons, counter persons, laundry persons, and spotters. Other employees are exempt if a specific employee handles the contaminated linen from start to finish.

How is cleanliness of the worksite ensured?

The OSHA standard ensures that the worksite is maintained in a clean and sanitary condition. All reusable bins or receptacles that store contaminated items such as personal protective equipment and textile products are included. Soiled items containing needles or pieces of glass must be put in a puncture proof container. The container must either be red or labeled with a bio-hazard symbol.

How should potentially infectious materials be marked?

A fluorescent orange or red label with a biohazard symbol must be put on all containers of potentially hazardous materials. Red bags or red containers can substitute for the warning label.

How should contaminated laundry be handled and cleaned?

Handle all soiled linens and clothing as little as possible. Place all soiled linens immediately in leak-proof bags and store until disposed of or until laundered. The bags should be red or marked with a bio-hazard label.

For non-disposable linens, laundering is the best way to remove blood or other infectious material. Launder soiled linens in detergent and hot water (160°F) for 25 minutes to destroy HIV and HBV. If laundered items cannot endure hot water, one cup of bleach should be added to the wash cycle.

Terms

AIDS: Acquired immunodeficiency syndrome. This is the final stage of infection with HIV.

Blood: The term "blood" includes human or experimental animal blood, plasma, and drainage from wounds.

Bloodborne Pathogens: Bacteria and viruses that are present in human blood that can cause disease. Bloodborne pathogens include hepatitis A and C, malaria, syphilis, human-T-lymphotrophic virus type 1 (HTLV-1), hepatitis B virus (HBV), and human immunodeficiency virus (HIV).

Contaminated: Blood or other infectious materials on an item or surface make it contaminated.

Contaminated Laundry: Laundry that is soiled with blood or other infectious materials.

Decontamination: Using chemicals to remove, inactivate or destroy bloodborne pathogens from a surface or item makes it safe.

HBV: Hepatitis B virus.

HIV: Human immunodeficiency virus that causes AIDS.

OSHA: The Occupational Safety and Health Administration is a U.S. governmental regulatory agency. OSHA regulates the health and safety of workers.

PPE: Personal protective equipment.

Retro-virus: A virus with the ability to copy its RNA into DNA inside an infected cell. HIV is a retro-virus.

Universal Precautions: Human blood and certain body fluids are treated as infected with HIV, HBV, and other bloodborne pathogens. This precaution is taken by health care workers.

Summary Tips

Final suggestions to insure that workers and consumers are better protected against HBV and HIV:

1. Understand how the new OSHA standard applies to your situation.
2. As a consumer, you should see that protective equipment is being used while you receive care. If not, ask "Why isn't the regulation being observed for our protection?"
3. Make a point of keeping up with the current scientific facts and research about HBV and HIV. Sources of information include:
   - Oklahoma County Public Health, (405) 427-8651 ext. 362.
   - Oklahoma State Department of Health, STD Division, (405) 271-4636.
   - National Hotline 1-800-342-AIDS.
4. If you have further questions or concerns about the OSHA standard, consult with the following:
   - your employer
   - Oklahoma State Department of Labor, OSHA Division, (405) 528-1500
   - Oklahoma State Department of Health, (405) 271-6868
   - U.S. Department of Labor, OSHA Regional Office, 525 Griffin Street, Room 602, Dallas, TX 75202, (214) 767-4731.

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