

# **BLOODBORNE PATHOGENS IN SCHOOLS**

## **INTRODUCTION**

As sure as children fall while learning to walk, students experience cuts, bruises and other injuries. In times past, little thought was given to treatment of such injuries. However, in today's environment it's critical that school professionals plan a safe response to children in need. Whether in the classroom, on a playing field or on a school bus, all school employees must know the potential danger of bloodborne pathogens.

Guidelines have been developed by the Centers of Disease Control (CDC) and the Occupational Safety and Health Administration (OSHA) that can protect you from bloodborne pathogens. These guidelines outline a method for you and your school system to follow in order to substantially reduce the risk of contracting a bloodborne disease while on the job. OSHA has developed a standard to protect anyone who can reasonably anticipate contact with blood or potentially infectious body fluids while at work.

OSHA recommends that school systems identify the personnel whose job duties expose them to blood and potentially infectious body fluids. Not every school employee is occupationally exposed to bloodborne pathogens. However, it's important that every school employee understands the dangers of infection and safe practices to minimize risk.

## **BLOODBORNE DISEASES**

Bloodborne pathogens are microorganisms carried by human blood and other body fluids. The two most common are the hepatitis B virus (HBV), hepatitis C (HBC) and the human immunodeficiency virus (HIV).

Many people think of AIDS when discussing bloodborne pathogens, but actually HBV is much more common. According to the Centers for Disease Control, each year in the U.S. approximately 500,000 people become infected with HBV, as compared to about 40,000 individuals that may contract HIV.

Unfortunately, children are as prone to bloodborne diseases as adults are. That means you are as much in danger of infection from the children you work with as any other group in society.

## HBV

Hepatitis means “inflammation of the liver”. Most people suffering from HBV will heal in approximately six months. But the virus can be life threatening-leading to cirrhosis and almost certain death.

If you become infected with HBV:

- You may suffer from flu-like symptoms (fatigue, weight-loss, fever or diarrhea).
- You may require hospitalization.
- You may not exhibit any symptoms, being unaware that you are a carrier.
- Your blood, saliva and other body fluids may be infected.
- You may spread the virus to sexual partners, family members and even unborn infants.

Symptoms of this disease are hard to pin down. Many contagious people show no signs or symptoms whatsoever. Only blood tests can positively identify the disease.

## HBC

It is spread by direct contact with the blood of an infected person. Once transmitted, the incubation period is an average of 45 to 75 days. Only 25% to 30% of infected individuals show any signs of infection, and those signs may not be recognized. Symptoms of HCV are similar to those of HBV (see above).

Approximately 4 million Americans are currently infected with HCV, and an estimated 36,000 to 242,000 new infections occur in the United States each year. About 15% of HCV-infected individuals clear the virus, and about 85% go on to develop chronic hepatitis C. Chronic liver disease may develop in 70% of the individuals with chronic hepatitis C, resulting in 8,000 to 10,000 deaths each year. Infection with HCV is the most common reason people have liver transplants in the United States.

## HIV

The human immunodeficiency virus attacks the body’s immune system, causing the disease known as AIDS. At present, there is no vaccine to prevent AIDS. If you contract HIV:

- You may suffer from flu-like symptoms (fever, diarrhea, fatigue).
- You may carry the virus without showing symptoms for several years.
- You will eventually develop AIDS.
- You may fall victim to AIDS-related illnesses including neurological problems, cancer and other opportunistic infections.

HIV is transmitted mainly through sexual contact, but also may be spread by contact with blood and body fluids. HIV is not transmitted by touching or working around people who carry the disease.

## **WORKPLACE TRANSMISSION**

Knowing how these dreaded diseases are transmitted can be your first line of defense from infection. HBV, HCV, HIV and other pathogens may be present in blood and other materials, such as:

- Body fluids containing visible blood.
- Semen and vaginal secretions.
- Torn or loose skin.

Bloodborne pathogens can cause infection by entering your body through:

- Open cut and nicks.
- Skin abrasions.
- Dermatitis.
- Acne.
- The mucous membranes of your mouth, eyes or nose.

Special-education employees should take extra caution while working with severely disabled children. Some children may be more:

- Vulnerable to injury.
- Likely to have special medical needs.
- Dependant on adults for personal care.

## **ACCIDENTAL INJURY**

You can become infected by cutting yourself with a contaminated sharp object like:

- Broken glass
- Sharp metal
- Needles
- Knives
- Exposed ends of orthodontic wires.

## **INDIRECT TRANSMISSION**

Bloodborne diseases can also be transmitted indirectly. This happens when you touch a contaminated object or surface and then transfer the infection to your:

- Mouth
- Eyes
- Nose
- Non-intact skin

Sound unlikely? Not when you consider HBV can survive on surfaces dried and at room temperature for at least a week. Contaminated surfaces are a major factor in the spread of HBV.

## **EXPOSURE CONTROL PLAN**

OSHA recommends that every school system create a written Exposure Control Plan (ECP) that's made available to **every** school employee. The ECP will:

- Identify the personnel at greatest risk for exposure.
- Analyze the potential hazards of each job description.
- Determine what measures will be taken to reduce the risk of exposure to bloodborne pathogens on the job.

## **STANDARD PRECAUTIONS**

Most approaches to infection control are based on the concept of Standard Precautions—treating all blood and body fluids as if they were potentially infectious.

This approach is critical because it is impossible to tell who is infected with HBV, HCV or HIV simply by appearances. Many people who carry infectious disease have no visible symptoms and no knowledge of their condition.

Victims of HBV, HCV and HIV come from:

- All age groups
- Every socioeconomic class
- Every state and territory
- Rural areas and inner cities.

Remember that an exposure can lead to infection. Using Standard Precautions may literally save your life.

## **REDUCING YOUR RISK**

Reducing your risk of exposure to bloodborne pathogens means you need to do more than wear gloves. To protect yourself effectively use:

- Work practice controls
- Personnel protective equipment
- Engineering controls
- Housekeeping
- Hepatitis B vaccine.

Alone, none of these five approaches is 100-percent effective. They must be used together to protect you from HBV, HCV and HIV.

## **ENGINEERING CONTROLS**

Your school system will provide physical or mechanical systems that eliminate hazards at their source. Their effectiveness usually depends on you. Know what engineering controls are available at your school and use them.

For example, appropriate containers must be used for disposing of regulated waste and towels soaked with blood or body fluids.

## **WORK PRACTICE CONTROLS**

Work practice controls are specific procedures you must follow on the job to reduce your exposure to blood or other potentially infectious materials. The school system will assign personnel to deal with bloodborne hazards on a regular basis. These employees may include:

- A person trained in bloodborne pathogens safety to give first-aid treatment to students
- A custodian or trained person responsible for cleaning up all body fluid spills.

## **HANDWASHING**

The most important work practice control is handwashing. Good handwashing keeps you from transferring contamination from your hands to other parts of your body or other surfaces you may contact later.

You should wash your hands with nonabrasive soap and running water:

- Every time you remove your gloves or other PPE.
- If skin or mucous membranes come in direct contact with blood or other body fluids, wash or flush the area with water as soon as possible.
- Where handwashing facilities are not available, such as a school bus, your employer will provide an antiseptic hand cleanser or antiseptic towelettes. Use these as a temporary measure only. You must still wash your hands with soap and running water as soon as you can.

## **PERSONAL HYGIENE**

Here are more ways to protect yourself from bloodborne pathogens:

- Minimize splashing, spraying, spattering and generation of droplets when attending to an injured student or co-worker, especially where blood is present.
- Don't eat or drink, smoke, apply cosmetics or lip balms, or handle contact lenses where there is likelihood of exposure.
- Don't keep food and drink in refrigerators, freezers, shelves, and cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.

## **PERSONAL PROTECTIVE EQUIPMENT**

The type of personal protective equipment or PPE appropriate for your job, varies with the task and the exposure you anticipate. PPE you should wear may include: gloves, masks, aprons, lab coats, face shields, protective eyewear, masks, mouthpieces and resuscitation bags or other ventilation devices.

If you clean up blood or body fluids:

- Wear appropriate PPE
- Use solution of one part bleach to 100 parts water or one-fourth cup bleach to one gallon of water.
- Disinfect mops and cleaning tools after the job is done.

Your school system will issue personnel protective equipment or make it readily accessible. In addition, your school system will maintain, replace or dispose of any PPE at no cost to you.

## **GENERAL RULES ON PPE**

You and your employer must work together to make sure your PPE does its job.

- You must be trained to use the equipment properly.
- You must use appropriate PPE each time you perform a task with potentially infectious materials.
- The equipment must be appropriate for the task and fit properly, especially gloves.
- All equipment must be free of flaws that could impede safety.

If PPE becomes penetrated by blood or other infectious materials then remove it as soon as possible.

## **RESUSCITATION DEVICES**

Pocket masks and mechanical emergency respiratory devices are designed to isolate you from contact with a victim's saliva.

Avoid unprotected mouth-to-mouth resuscitation. Students or co-workers may expel saliva, blood or other fluids during resuscitation.

## **GLOVES**

Gloves are the most frequently used type of personal protective equipment. You must wear gloves when it is reasonably anticipated your hands may contact:

- Blood
- Potentially infectious materials
- Mucous membranes or non-intact skin.

Single-use disposable gloves are used for first-aid procedures. Heavy-duty utility gloves should be used for housekeeping. If you are allergic to disposable gloves, there are hypoallergenic gloves, glove liners, powderless gloves or other alternatives available.

Since gloves can be torn or punctured, cover and hand cuts with bandages before putting on gloves. Replace gloves as soon as you can if they are:

- Torn
- Punctured
- Contaminated
- Defective in any way.

Never wash or decontaminate single-use disposable gloves for reuse.

## **GLOVE REMOVAL**

As important as wearing gloves is, you are not protected unless you remove them correctly.

- With both hands gloved, peel one glove off from top to bottom and hold it in the gloved hand.
- With the exposed hand, peel the second glove from the inside, tucking the first glove inside the second.
- Dispose of the gloves promptly.
- Never touch the outside of the glove with bare skin.
- Every time you remove your gloves, wash your hands with soap and running water as soon as possible.

## **FIRST RESPONDERS KITS**

Your school may provide first responder kits as an effective way to deal with injuries and reduce the threat of bloodborne pathogens. The kit should contain:

- Gloves
- Combination masks that protect eyes, nose and mouth.
- Gauze and all other appropriate first aid equipment.
- Device for resuscitation.

## **GOOD HOUSEKEEPING**

Good housekeeping is everyone's responsibility, since it protects you and the students.

Your facility's Exposure Control Plan will list specific methods and regular schedules for cleaning surfaces possibly contaminated with infectious materials.

Here are some general rules:

- Clean and decontaminate all equipment and environmental working surfaces as soon as possible after contact with blood or other potentially infectious materials. Use an appropriate disinfectant such as a solution of one part bleach to 100 parts water or one-fourth cup bleach to one gallon of water.
- Never pick up broken glass with gloved or bare hands. Use tongs or a broom and dustpan.
- Place contaminated sharps and infectious wastes in designated containers. Sharps containers should be labeled or color-coded, leak-proof containers that are closeable and easily accessible to those who use them. Do not allow waste containers to overfill.
- Handle contaminated laundry as little as possible and with minimal agitation. Place soiled laundry in labeled or color-coded leak-proof bags or containers without sorting or rinsing.
- Bins, pails, cans and similar receptacles that are reused and have a reasonable likelihood for becoming contaminated with blood or other infectious materials shall be inspected and decontaminated on a regularly scheduled basis.

## **KNOW THIS LABEL**

Watch for fluorescent orange-red labels, red bags and containers with a biohazard symbol. This symbol warns you that the container holds blood or other potentially infectious materials.

## **HBV VACCINATIONS**

Rolling up your sleeve for this vaccination may be one of the best ways to prevent hepatitis B infection. If you are exposed to blood or other infectious materials as part of your job, the school system will make the hepatitis B vaccination available to you at no cost.

The vaccine can be given within 24 hours of exposure. It will be completed by three injections over a six-month period. Today's vaccines are safe and effective.

## **PLAYING IT SAFE**

Accidents happen. If you are exposed, immediately report the incident to your supervisor. If you consent, your employer will provide you with:

- A confidential medical evaluation
- Blood tests
- Post-exposure preventative treatment if available
- Follow-up counseling.

## **BLOODBORNE PATHOGENS IN SCHOOLS**

As a school employee, you must react to an emergency not only with your heart, but also with your head. Know the facts about bloodborne diseases so you can take sensible precautions. Students, co-workers and loved ones are counting on you. Take the time to protect yourself while helping a child or co-worker in need.

## QUIZ

1. True False HIV and HBV may be present in body fluids other than blood.
2. True False Children may not exhibit any symptoms, being unaware that they are a carrier of HBV.
3. True False Sexual contact and sharing infected needles are the only ways HBV and HIV can be transmitted.
4. True False Blood, vomit or urine may contain bloodborne pathogens.
5. True False You should always check disposable gloves for holes to ensure they will protect you from bloodborne pathogens.
6. True False Bloodborne infections can be transmitted through an open cut or through common skin conditions like dermatitis.
7. True False The HBV vaccine is safe and effective.
8. True False It's recommended that every school system create an Exposure Control Plan and make it available to all of the employees.
9. True False Some people infected with HBV show no signs or symptoms.
10. True False Contaminated surfaces can easily lead to the spread of HBV.
11. True False Standard Precautions means treating all blood and body fluids as if they are infected with a bloodborne disease.
12. True False To effectively disinfect surfaces and cleaning tools you may use one part bleach to 10 parts water.
13. True False Only teachers and housekeeping staff are at risk of encountering bloodborne pathogens at school.

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|-----|------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14. | True | False | You must carefully remove disposable gloves to minimize your risk of infection.                                                                       |
| 15. | True | False | HBV is never life threatening.                                                                                                                        |
| 16. | True | False | Housekeeping staff and other school employees who clean sinks should wear proper PPE including gloves.                                                |
| 17. | True | False | If you contract HBV you can put your family at risk of infection.                                                                                     |
| 18. | True | False | There's no need to wash your hands after removing disposable gloves.                                                                                  |
| 19. | True | False | Your school system's Exposure Control Plan will identify those who are at greatest risk coming in contact with bloodborne pathogens while on the job. |
| 20. | True | False | Protecting yourself from bloodborne disease requires knowing the facts about HBV, HCV and HIV and taking sensible precautions.                        |

### ACKNOWLEDGEMENT OF TRAINING

I have read and understand the training handbook, **Bloodborne Pathogens in Schools**. I have also completed and passed the comprehensive quiz at the conclusion of this handbook.

Employee's Signature	Date
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Trainer's/Supervisor's Name	Date
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**Note:** This record may be included in the employee's personnel or training file.