

Bloodborne Pathogens

What Foster Parents Need to Know!



Introduction

This home study program is designed to provide a basic understanding of bloodborne pathogens, common modes of transmission, prevention, and other pertinent information. It is designed to meet the requirements of the Occupational Safety and Health Administration's (OSHA's) Bloodborne Pathogen Standard. The training is not intended to scare you – the likelihood of your contracting one of these diseases is actually quite low. All four of the conditions listed on the next page must be met in order for disease transmission to occur. However, because bloodborne diseases are very serious and sometimes fatal, it is important to learn how to protect yourself from possible exposure. To receive credit for this training (1 hour), simply read this informational packet and complete the quiz at the end.

Bloodborne pathogens are microorganisms such as viruses or bacteria that are carried in blood and can cause disease in people. There are many different bloodborne pathogens including rabies, syphilis, and brucellosis, but *Hepatitis B (HBV)* and the *Human Immunodeficiency Virus (HIV)* are the two diseases specifically addressed by the OSHA Bloodborne Pathogen Standard. This training will focus primarily on HBV and HIV. If you would like further information or training on other bloodborne diseases (or disease prevention in general), please inform your case manager or contact the Lifegains training department (828) 437-7313.

Conditions Necessary for Disease Transmission

- A pathogen is present.
- There is enough of the pathogen to cause disease.
- The pathogen passes through the correct entry site.
- A person is susceptible to the pathogen.

Bloodborne Diseases

Hepatitis A

Hepatitis A is often called infectious hepatitis. It is common in children. It is often transmitted by contact with food or other products soiled by the stool of an infected person. Parents may get the disease from their children by changing diapers. Shellfish and water containing the virus also can transmit Hepatitis A.

At first, people with Hepatitis A feel as if they have the flu. Later, their skin may become a yellowish color (jaundice). Hepatitis A usually does not have serious consequences.

Hepatitis B (HBV)

In the United States, approximately 300,000 people are infected with HBV annually. Of these cases, a small percentage are fatal.

"Hepatitis" means "*inflammation of the liver*," and, as its name implies, Hepatitis B is a virus that infects the liver. While there are several different types of Hepatitis, Hepatitis B is transmitted primarily through blood to blood contact. Hepatitis B initially causes inflammation of the liver, but it can lead to more serious conditions such as cirrhosis and liver cancer.

There is no "cure" or specific treatment for HBV, but many people who contract the disease will develop antibodies which help them get over the infection and protect them from getting it again.

The symptoms of HBV are very much like a mild "flu". Initially there is a sense of fatigue, possible stomach pain, loss of appetite, and even nausea. As the disease continues to develop, jaundice (a distinct yellowing of the skin and eyes), and a darkened urine will often occur. However, people who are infected with HBV will often show no symptoms for some time. After exposure **it can take 1-9 months** before symptoms become noticeable. Loss of appetite and stomach pain, for example, commonly appear within 1-3 months, but can occur as soon as 2 weeks or as long as 6-9 months after infection.

The Hepatitis B virus is very durable, and **it can survive in dried blood for up to seven days**. For this reason, this virus is a concern for foster parents since naturally it is possible for any parent to come in contact with blood or potentially infectious materials in a non first-aid or medical care situation. However, a vaccine exists for both Hepatitis A and Hepatitis B. If you are interested in a vaccine, inquire at your doctor's office or the local health department.

Hepatitis C

Hepatitis C is a virus that lives in the blood and body fluids of an infected individual. Transmission is most common by sharing needles or personal items that may have infected blood on them (razors, toothbrushes). Sexual transmission is low. Persons most at risk are those who received blood transfusions before 1992, those with a history of drug abuse, sexually active individuals who have had multiple partners, and persons with tattoos. Over 3.9 million Americans are infected with Hepatitis C – over 100,000 in North Carolina. The Centers for Disease Control estimate that 28,000 new persons are infected annually (compared with 300,000 infected annually with HBV). Although new cases are lower, it is a dangerous long term disease (lasting 2-30 years) that can result in cirrhosis, and chronic liver infection. Hepatitis C is the leading cause of the need for liver transplants.

One of the most dangerous aspects of this disease is that 80% of persons infected show no symptoms until the disease is quite progressed.

Human Immunodeficiency Virus (HIV)

AIDS, or acquired immune deficiency syndrome, is caused by a virus called the human immunodeficiency virus, or HIV. Once a person has been infected with HIV, it may be many years before AIDS actually develops. HIV attacks the body's immune system, weakening it so that it cannot fight other deadly diseases. AIDS is a fatal disease, and while treatment for it is improving, there is no known cure.

Estimates on the number of people infected with HIV vary, but some estimates suggest that an average of 35,000 people are infected every year in the US (in 2000, 45,000 new infections were reported). It is believed that as of 2000, 920,000 persons were living with HIV/AIDS in the United States. These numbers could be higher, as many people who are infected with HIV may be completely unaware of it.

The HIV virus is very fragile and will not survive very long outside of the human body. It is primarily of concern to individuals providing first aid or medical care in situations involving fresh blood or other potentially infectious materials. It is estimated that the chances of contracting HIV in a workplace environment are only 0.4%. However, because it is such a devastating disease, all precautions must be taken to avoid exposure.

AIDS infection essentially occurs in three broad stages. The first stage happens when a person is actually infected with HIV. After the initial infection, a person may show few or no signs of illness for many years. Eventually, in the second stage, an individual may begin to suffer swollen lymph glands or other lesser diseases which begin to take advantage of the body's weakened immune system. The second stage is believed to eventually lead to **AIDS, the third and final stage**, in all cases. In this stage, the body becomes completely unable to fight off life-threatening diseases and infections.

Symptoms:

Symptoms of HIV infection can vary, but often include weakness, fatigue, fever, sore throat, nausea, headaches, diarrhea, a white coating on the tongue, weight loss, and swollen lymph glands.

If you believe you have been exposed to HBV or HIV, especially if you have experienced any of the signs or symptoms of these diseases, you should consult your physician or doctor as soon as possible.

How Bloodborne Pathogens Enter the Body



- Direct Contact – occurs when infected blood or body fluids from one person enter another person's body at a correct entry site.
- Indirect contact – occurs when a person touches an object that contains the blood or body fluid of an infected person, and that infected blood or body fluid enters the body through a correct entry site.

Modes of Transmission

Bloodborne pathogens such as HBV and HIV can be transmitted through contact with infected human blood and other potentially infectious body fluids such as:

- **Semen** (the viscid, whitish fluid from the male)
- **Vaginal secretions** (fluid from the female cervix).
- **Cerebrospinal fluid** (colorless liquid that surrounds the brain and spinal cord).
- **Synovial fluid** (fluid that lubricates and cushions the joint).
- **Pleural fluid** (fluid between the pleural membranes of the lung and the inner chest wall).
- **Peritoneal fluid** (fluid in the gastrointestinal organs).
- **Amniotic fluid** (fluid which surrounds the fetus).
- **Saliva** (in dental procedures).
- **Any body fluid that is visibly contaminated with blood.**

It is important to consider the ways that exposure and transmission are most likely to occur in your particular situation, such as providing first aid to a child in your home.

HBV and HIV are most commonly transmitted through:

- Sexual Contact
- Sharing of hypodermic needles
- From mothers to their babies at/before birth
- Accidental puncture from contaminated needles, broken glass, or other sharps
- Contact between broken or damaged skin and infected body fluids
- Contact between mucous membranes and infected body fluids



Accidental puncture from contaminated needles and other sharps can result in transmission of bloodborne pathogens.

In most work or laboratory situations, transmission is most likely to occur because of accidental puncture from contaminated needles, broken glass, or other sharps; contact between broken or damaged skin and infected body fluids; or contact between mucous membranes and infected body fluids. For example, if someone infected with HBV cut their finger on a piece of glass, and then you cut yourself on the now infected piece of glass, it is possible that you could contract the disease. Anytime there **is blood-to-blood contact** with infected blood or body fluids, there is a slight potential for transmission.

Unbroken skin forms an impervious barrier against bloodborne pathogens.

However, infected blood can enter your system through:

- Open sores
- Cuts
- Abrasions
- Acne
- Any sort of damaged or broken skin such as sunburn or blisters

Bloodborne pathogens may also be transmitted through the mucous membranes of the

- Eyes
- Nose
- Mouth

For example, a splash of contaminated blood to your eye, nose, or mouth could result in transmission. HIV and HBV are not transmitted through casual contact.

Precautions and Guidelines to Prevent Disease Transmission

- Personal hygiene
- Personal protective equipment
- Engineering and work practice controls
- Equipment cleaning and disinfecting



PPE, Work Practices & Engineering Controls

It is extremely important to use personal protective equipment and work practice controls to protect yourself from bloodborne pathogens. "**Universal Precautions**" is the name used to describe a prevention strategy in which all blood and potentially infectious materials are treated as if they are, in fact, infectious, regardless of the perceived status of the source individual. In other words, whether or not you think the blood/body fluid is infected with bloodborne pathogens, *you treat it as if it is*. This approach is used in all situations where exposure to blood or potentially infectious materials is possible. This also means that certain engineering and work practice controls shall **always** be utilized in situations where exposure may occur.

Personal Protective Equipment (PPE)

Probably the first thing to do in any situation where you may be exposed to bloodborne pathogens is to ensure you are wearing the appropriate personal protective equipment (PPE). For example, you may have noticed that emergency medical personnel, doctors, nurses, dentists, dental assistants, and other health care professionals always wear latex or protective gloves. This is a simple precaution they take in order to prevent blood or potentially infectious body fluids from coming in contact with their skin. To protect yourself, it is essential to have a barrier between you and the potentially infectious material.



Rules to follow:

- Always wear personal protective equipment in exposure situations.
- Remove PPE that is torn or punctured, or has lost its ability to function as a barrier to bloodborne pathogens.
- Replace PPE that is torn or punctured.
- Remove PPE before leaving the work area.

If you work or live in circumstances where you have routine exposure to blood or potentially infectious materials, the necessary PPE should be readily accessible. Contaminated gloves, clothing, PPE, or other materials should be placed in appropriately labeled bags or containers until it is disposed of, decontaminated, or laundered.

Gloves

Gloves should be made of latex, nitril, rubber, or other water impervious materials. If glove material is thin or flimsy, double gloving can provide an additional layer of protection. Also, if you know you have cuts or sores on your hands, you should cover

these with a bandage or similar protection as an additional precaution before donning your gloves. You should always inspect your gloves for tears or punctures before putting them on. **If a glove is damaged, don't use it!** When taking contaminated gloves off, do so carefully. Make sure you don't touch the outside of the gloves with any bare skin, and be sure to dispose of them in a proper container so that no one else will come in contact with them, either.

**Always
check your gloves
for damage
before using them**



Goggles

Anytime there is a risk of splashing or vaporization of contaminated fluids, goggles and/or other eye protection should be used to protect your eyes. Again, bloodborne pathogens can be transmitted through the thin membranes of the eyes so it is important to protect them. Splashing could occur while cleaning up a spill, during laboratory procedures, or while providing first aid or medical assistance.

Face Shields

Face shields may be worn in addition to goggles to provide additional face protection. A face shield will protect against splashes to the nose and mouth.

Aprons

Aprons may be worn to protect your clothing and to keep blood or other contaminated fluids from soaking through to your skin. Normal clothing that becomes contaminated with blood should be removed as soon as possible because fluids can seep through the cloth to come into contact with skin. Contaminated laundry should be handled as little as possible, and it should be placed in an appropriately labeled bag or container until it is decontaminated, disposed of, or laundered.

Remember to use universal precautions and treat all blood or potentially infectious body fluids as if they are contaminated. Avoid contact whenever possible, and whenever it's not, wear personal protective equipment. If you find yourself in a situation where you have to come in contact with blood or other body fluids and you don't have any standard personal protective equipment handy, you can improvise. Use a towel, plastic bag, or some other barrier to help avoid direct contact.

Hygiene Practices



Handwashing is one of the most important (and easiest) practices used to prevent transmission of bloodborne pathogens. Hands or other exposed skin should be thoroughly washed as soon as possible following an exposure incident. Use soft, antibacterial soap, if possible. Avoid harsh, abrasive soaps, as these may open fragile scabs or other sores. Hands should also be washed immediately (or as soon as feasible) after removal of gloves or other personal protective equipment. If you happen to be in an area without access to a restroom or sink, you may use an antiseptic cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. If these alternative methods are used, hands should be washed with soap and running water as soon as possible.

If you believe there is a likelihood of exposure to bloodborne pathogens, **you should never:**

- Eat
- Drink
- Smoke
- Apply cosmetics or lip balm
- Handle contact lenses

No food or drink should be kept in refrigerators, freezers, shelves, cabinets, or on counter tops where blood or potentially infectious materials are present or where materials used to clean up a spill have been discarded.



Decontamination and Sterilization

All surfaces, tools, equipment and other objects that come in contact with blood or potentially infectious materials must be decontaminated and sterilized as soon as possible. Equipment and tools must be cleaned and decontaminated before servicing or being put back to use.

Decontamination should be accomplished by using

- The standard recommendation is to use at least **a quarter cup of bleach diluted in one gallon of water.**
- Lysol or some other EPA-registered tuberculocidal disinfectant. Check the label of all disinfectants to make sure they meet this requirement.

If you are cleaning up a spill of blood, you can carefully cover the spill with paper towels or rags, then gently pour the solution of bleach over the towels or rags, and

leave it for *at least 10 minutes*. This will help ensure that any bloodborne pathogens are killed before you actually begin cleaning or wiping the material up. By covering the spill with paper towels or rags, you decrease the chances of causing a splash when you pour the bleach on it.

If you are decontaminating equipment or other objects (be it broken glass or some other item upon which someone has been cut, first aid boxes, or whatever) you should leave the disinfectant in place for *at least 10 minutes* before continuing the cleaning process.

Of course, any materials you use to clean up a spill of blood or potentially infectious materials must be decontaminated immediately, as well. This would include mops, sponges, re-usable gloves, buckets, pails, etc.

Sharps

Persons are sometimes punctured or cut by improperly disposed needles and broken glass. This, of course, exposes them to whatever infectious material may have been on the glass or needle. For this reason, it is especially important to handle and dispose of all sharps carefully in order to protect yourself as well as others.

Needles must be disposed of in sharps containers.

If a child in your home regularly receives injections for diabetes, B-12 deficiency, or any other medical condition, please make sure that you have been trained on the proper way to dispose of the used needles.



Needles

- Needles should never be recapped.
- Needles should be moved only by using a mechanical device or tool such as forceps, pliers, or broom and dust pan.
- Never break or shear needles.
- Needles shall be disposed of in labeled sharps containers only.
- Sharps containers shall be closable, puncture-resistant, leak-proof on sides and bottom, and must be labeled or color-coded.
- When sharps containers are being moved from the area of use, the containers should be closed immediately before removal or replacement to prevent spillage or protrusion of contents during handling or transport.

Broken Glassware

- Broken glassware that has been visibly contaminated with blood must be sterilized with an approved disinfectant solution before it is disturbed or cleaned up.
- Glassware that has been decontaminated may be disposed of in an appropriate sharps container: ie. closable, puncture-resistant, leak-proof on sides and bottom, with appropriate labels. (Labels may be obtained from OSU EHS.)
- Broken glassware will not be picked up directly with the hands. Sweep or brush the material into a dustpan.
- Uncontaminated broken glassware may be disposed of in a closable, puncture resistant container such as a cardboard box or coffee can.

By using Universal Precautions and following the steps outlined in this training manual, you can protect yourself and prevent transmission of bloodborne pathogens.

Smart Work/Parenting Practices



- Use safer devices
- Place sharps in proper containers
- Remove/dispose of soiled protective clothing as soon as possible
- Clean and disinfect all possibly contaminated equipment and work surfaces.
- Wash your hands thoroughly immediately after providing care.
- Do not eat, drink, smoke, apply cosmetics or lip balm, handle contact lenses or touch your mouth, nose, or eyes when exposure to infectious materials is possible.
- Use alcohol-based hand rubs where handwashing facilities are not available

Emergency Procedures

In an emergency first aid situation involving blood or potentially infectious materials, you should always use Universal Precautions and try to minimize your exposure by wearing gloves and/or any other barrier devices that are available.

If you are exposed, however, you should:

1. Wash the exposed area thoroughly with soap and running water. Use non-abrasive, antibacterial soap if possible.

If blood is splashed in the eye or any other mucous membrane, flush the affected area with running water for at least 15 minutes.

2. Report the exposure to your case manager as soon as possible.

For More Information:

Additional materials about disease prevention are available from the Lifegains Resource Library, including the following videos:

- The Invisible Threat: Prevention of Viral Hepatitis and Bloodborne Pathogens (12 min), produced by Hepatitis Foundation International
- An Ounce of Prevention (30 min), produced by the CDC
- Wash Those Hands (10 minutes), an ABC News 20/20 segment

The CDC (Centers for Disease Control) also offers up-to-date information on their website. Two particularly good places to find information are:

www.cdc.gov/NCIDOD/DISEASES/hepatitis

(information about Hepatitis A, B, C, D, and E – fact sheets, information about prevention, treatment, and the available vaccines)

www.cdc.gov/hiv

(information about HIV/AIDS, including an informative section titled “rumors, myths, and hoaxes” that is useful for clearing up some of the fallacies about this disease)

Bloodborne Pathogens Quiz

Directions: Read each question carefully and circle the correct answer. If you wish to receive training credit, sign and date the quiz when it's completed, and send it to the Lifegains training department.

1. Hepatitis A is common in:
 - a) children
 - b) adults
 - c) the elderly
 - d) pets

2. The Hepatitis B virus can survive in dried blood for:
 - a) seven hours
 - b) one day
 - c) one week
 - d) a month

3. A vaccine exists for which of the following diseases?
 - a) Syphilis
 - b) HIV
 - c) Hepatitis A and Hepatitis B
 - d) Hepatitis C

4. Which of the following could contain bloodborne pathogens?
 - a) bloody saliva
 - b) semen
 - c) vaginal secretions
 - d) all of the above

5. If you wear gloves when helping a child with a nosebleed, it is not necessary to wash your hands afterwards.
 - a) yes
 - b) no

6. Bloodborne pathogens may enter your system through:
- a) open cuts
 - b) skin abrasions
 - c) mucous membranes
 - d) all of the above
7. You should always treat all body fluids as if they are infectious and avoid direct skin contact with them.
- a) yes
 - b) no
8. It is okay to eat, drink, smoke, or apply lip balm in an area where there may be potential for exposure to bloodborne pathogens, as long as you are careful.
- a) true
 - b) false
9. When cleaning up an accident involving blood or body fluids in your home, you should use one tablespoon of bleach in a gallon of water to ensure that any bloodborne pathogens will be killed.
- a) true
 - b) false
10. If blood gets splashed in your eye or any other mucous membrane, you should flush the area with clean running water for at least 15 minutes.
- a) true
 - b) false

NAME: _____ **DATE:** _____

You can ask your case manager to deliver your completed quiz to the training department, or send it by fax or mail to:

Lifegains Training Department
P.O. Drawer 1569
Morganton, NC 28680-1569

Phone: (828) 437-7313
Fax: (828) 430-8754