Blood Borne Pathogens Safety

Overview

The focus of this program is to provide strategies and tools to help ensure safety regarding blood borne pathogens. The program discusses the prevalence and transmission of blood borne infections, and describes how exposure controls and personal protective equipment (PPE) are used to prevent transmission. It also provides a review of Universal Precautions, Standard Precautions and needle stick precautions, as well as guidance on following appropriate workplace infection control procedures.

Purpose

The purpose of this program is to provide healthcare workers with an understanding of blood borne infections, as well as the controls and precautionary measures you can take to help prevent their transmission.

Introduction

Ever since the rapid spread of acquired immune deficiency syndrome (AIDS) and human immunodeficiency virus (HIV), there has been increasing concern about preventing the spread of HIV infection and blood borne diseases. Over the years various government agencies have issued and updated a whole series of recommendations and enforceable standards to address this problem. These should not be seen as separate and piecemeal efforts, but as parts of an overall attempt to address the dangers of acquiring blood borne infections such as AIDS, and hepatitis B and C in the healthcare environment.

Hepatitis B

About one-third of HBV-infected individuals experience no symptoms. Another third experience only a mild flu-like illness that goes away. The last third develop clinically apparent, acute hepatitis B. They may experience abdominal pain, nausea, and fatigue. The skin and eyes may become yellow in color, called jaundice, and the urine may become dark. Sometimes there is joint pain, rash, and fever. Most people with acute hepatitis recover within a few months. A small percentage will develop severe hepatitis B, which is fatal in most cases. Also of concern is the fact that 6% to 10% become chronic or long term, carriers of HBV. They may or may not have an active infection, and may have few or no symptoms, but they can still transmit the disease. This ability to infect others may be permanent.

Hepatitis C

Hepatitis C infection is the most common chronic blood borne infection in the U.S., with an estimated 4.1 million people carrying the virus. Currently there are no vaccine or immune globulin products available to prevent transmission, although therapy for HCV is evolving

rapidly. HCV is transmitted in the same manner as HBV, and can also lead to serious liver disease and death.

HIV Infection

HIV ultimately affects the immune system and limits the ability of the body to fight off infection. But the virus may live in the body several weeks or even months before symptoms develop. The first sign of infection may be a flu-like illness that could include fever, sweats,
aches, swollen glands, sore throat, diarrhea, fatigue, or a rash or skin lesions. For some, the glands remain swollen.

Occupational Risk

The latest statistics from the CDC indicate that out of approximately 8 million healthcare workers, there are 196 documented or probable cases of occupationally-acquired HIV.
Nearly 400 healthcare workers get hepatitis B from occupational exposure each year. While this number is still too high, it is a dramatic decrease from the rate of more than 10,000 annual infections recorded in 1983. This decrease is a direct result of healthcare workers being immunized against hepatitis B. But, keep in mind that in the U.S., it is estimated that 1.25 million people are carriers of HBV. The risks for hepatitis C are also significant, though only about 10% of the risk for getting hepatitis B. On average 1.8% of those exposed to HCV by needle stick accident will develop hepatitis C. Like hepatitis B it can be detected through serum blood testing.

Sources and Modes of Transmission

In order to control the risk of getting AIDS or hepatitis B or C, you should know how these blood borne infections are transmitted. OSHA regulations for protecting workers require that Universal Precautions be observed whenever there is a risk of contact with any potential source of blood borne infection. Universal Precautions is OSHA's required method of control to protect employees from exposure to all human blood and other potentially infectious materials. The term, "Universal Precautions," refers to a concept of blood borne disease control that requires that all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other blood borne pathogens. Universal Precautions includes the following concepts: Blood is the most common potential source of infection in the healthcare setting.
Body fluids that contain blood, like bloody urine, are also sources of infection. Semen and vaginal secretions may also contain amounts of HIV or HBV or HCV large enough to infect you if you are exposed. All body fluids in situations where it is difficult or impossible to differentiate between body fluids should be considered infectious.

Primary Modes of Transmission in the Workplace

Accidental Punctures: Puncture wounds from contaminated needles or sharp instruments. “Safer devices” greatly minimize the risk of an accidental puncture wound by removing or shielding needles. Contact with Broken Skin: Includes contact with blood or body fluids at the site of an open wound, cut or broken skin. Although unlikely, even breaks in the skin that is too small to see, like nicks around your fingernails are big enough to let the pathogens into your body. A dry skin condition or rash can also create invisible breaks in the skin. Mucous Membranes: The membranes that line your eyes, nose, and mouth. If precautions are not taken, you could get infected if infectious fluids splash into your eyes or if you touch your eyes, nose, or mouth when you have infectious material on your hand. In addition to

knowing the modes of transmission, it is also important to know how you do NOT get these viruses. They are not transmitted by casual or environmental contact. Normally, shaking hands, using telephones, toilet seats, and drinking fountains will not cause blood borne infections, nor will donating blood.

Preventing Workplace Exposure

To prevent occupational transmission of blood borne viruses such as HIV, or hepatitis B and C, steps must be taken to control exposure in the workplace. OSHA requires all healthcare facilities to comply with its Blood borne Pathogens Standard. This regulation is designed to protect workers against exposure to blood borne pathogens. It applies to all employees who have occupational exposure to blood or other potentially infectious materials. The precautions that you will take depend on the nature of your work and the level of risk.

Universal Precautions

Universal Precautions is a key component of OSHA's Blood borne Pathogens Standard. Although originally developed by the CDC, "Universal Precautions" is now the term OSHA uses to refer to a concept of blood borne disease control which requires that all human blood and certain human body fluids be treated as if known to be infectious for HIV, HBV, and other blood borne pathogens. Many persons may not even know if they are infected—and testing may not determine if they are infectious at the time care is given. To observe Universal Precautions, you must use control measures where contact with blood and other potentially infectious fluids is possible. For example, in many situations you must use personal protective equipment, such as gloves, to protect yourself from contact with blood or body fluids. Needle stick safety and prevention is another key component of OSHA's Blood borne Pathogens Standard. You should also assume that all used needles or other sharps are contaminated and able to infect you if you get stuck. The standard calls for the use of safer needle devices wherever possible, along with other requirements.

Personal Protective Equipment

Even though you may perform tasks where there is a risk of exposure to blood borne infection, you can still work safely because precautions have been developed to protect you. One of the most important strategies found in both Universal Precautions and Standard Precautions is putting a barrier between you and the possible source of infection through use of personal protective equipment. This includes: gloves, masks and protective eyewear, protective face shields, and protective clothing. Your employer must provide you with clean protective equipment for each patient, and you should know where the equipment can be obtained. You should know when to use it, how to put it on correctly, how to take it off safely, and what to do with it after use.

Gloves

Gloves are the most commonly used type of personal protective equipment. Gloves must be worn whenever there is a danger of touching or handling blood or other potentially infectious materials, when drawing blood, or performing any other invasive procedures.

Face Mask, Protective Eyewear and Protective Clothing

Facemasks, face shields, and protective eyewear are used to protect the mucous membranes of your eyes, nose, and mouth. They should be worn whenever there is a chance that blood or other infectious materials will splash, spatter, or spray. Use your best judgment in determining when to wear them. Facemasks are ineffective when they become wet during long procedures and should be replaced as soon as is practical. Facemasks and eyewear should only be removed after performing hand hygiene.

Safer Needle Devices

The CDC estimated that 600,000 to 800,000 needle stick or other percutaneous injuries occur annually among healthcare workers in all healthcare fields. But, it said, this number could be reduced by 62 to 88 percent through the use of safer medical devices. In light of this, OSHA's Blood borne Pathogens Standard requires the use of engineering controls to help prevent sharps and needle stick injuries, and a number of safer medical devices have been developed.

CDC Hand Hygiene

The most recent CDC guideline on hand hygiene recommends hand decontamination before and after direct contact with a patient, before and after wearing gloves, after touching patient care equipment or environmental surfaces, and before performing invasive procedures. In all these situations, the preferred hand hygiene technique is now decontamination with an alcohol-based hand rub. This has been shown to be more effective against microbes and quicker and easier to perform, thus encouraging greater adherence to hand hygiene.

Post Exposure Response

You can also help control blood borne infection by responding to an exposure incident correctly and promptly:

- Wash the exposed area immediately.
- Notify your supervisor right away, and file an exposure incident report. OSHA requires employers to establish a log to record and track all contaminated needle stick and sharps injuries.
- Consult a doctor without delay. A post-exposure confidential evaluation and follow-up will be provided free of charge. It includes documentation of the incident.

Conclusion

There are many ways to protect yourself and others from blood borne infections like AIDS and hepatitis B and C. You should follow the exposure control measures Universal Precautions, Standard Precautions and needle stick precautions every day on the job. In addition, you should know about the PPE used in your facility. And be sure to follow all work practice controls, and learn the specific precautions you should take for your particular job. If you apply what you have learned on a daily basis, you should be able to perform your job safely and with confidence.