BLOODBORNE PATHOGENS FOR HEALTH CARE WORKERS
ANNOTATED TRAINING OUTLINE

SECTION I BLOODBORNE INFECTIONS

OBJECTIVES

1. Name three bloodborne viruses that pose a risk to health care workers.
2. List the symptoms and effects of each infection.
3. Describe the risk of being infected with these viruses.

OUTLINE

Review each disease including:

1. Causative agent
2. Course of the infection
3. Symptoms
4. Outcome of disease
5. Risk of spread

Hepatitis means an inflammation of the liver. Symptoms of this disease, no matter what the cause, are loss of appetite, abdominal pain, nausea, vomiting, fatigue, and jaundice (a yellow coloring of the eyes and skin and darkening of the urine). Some people with jaundice will have itching.

Hepatitis B: This is one of several bloodborne types of hepatitis. In this case a certain virus, called hepatitis B virus (HBV), causes the problem. Some people who are infected will experience no symptoms at all. Others will have mild to severe symptoms. With this type of hepatitis, the patient might also have joint pain and rash. The risk of this infection related to blood transfusion has almost been eliminated based on testing of donor units and processing of products for hemophiliacs. Many people will recover completely after a hepatitis B infection. From 1 to 10% of people who are infected may develop chronic infection. In the US, about 0.5% have chronic infection related to HBV infection. Up to 25% of people with chronic infection will develop cirrhosis or cancer of the liver.

Hepatitis C: This is another type of bloodborne hepatitis. The symptoms are as listed above. More than 60% of the people with this infection develop chronic hepatitis. Since blood donations are now tested for this type of hepatitis, the risk of spread is decreased. The risk of transmission from a blood transfusion is estimated to be less the 0.5%. Transmission occurs by percutaneous exposure to blood and plasma derivatives. Contaminated needles are important vehicles of spread, in injecting drug users and potentially in health care workers.

HIV/AIDS: HIV is a virus that infects white blood cells and other certain other body tissues. It affects the immune system and interferes with the ability to fight infection. When a person is first infected, a flu-like syndrome with fever, aches, swollen glands sore throat, etc., may be experienced. This acute illness occurs within several weeks to several months of the time of infection. These symptoms will go away in most people and most will remain symptom free for a long time. The HIV continues to be present in the body. AIDS is diagnosed when certain immune cells (CD_4) drop below 200 or an opportunistic infection, such as *Pneumocystis carinii* pneumonia, tuberculosis, etc., is diagnosed. With better treatment of the HIV infection itself and better preventative treatment for opportunistic infections, the incidences of AIDS and the death rate related to AIDS is decreasing.

Risk of spread of bloodborne pathogens related to needle-stick injuries when the source is positive for the infection:

HIV 0.3% or 1 out of every 333 needle sticks with HIV positive blood
HCV 3.0% or 1 out of every 33 needle sticks with HCV positive blood
HBV 30% or 1 out of every 3 needle sticks with HBV positive blood

REMEMBER that this is when the blood is positive for the pathogen listed. The risk is smaller in cases where the status of the source blood is unknown because not everyone is infected with a bloodborne pathogen.

The risk of infection with HBV can be eliminated by receiving hepatitis B vaccine. (See attachment section III). The risk of infection with HIV varies with the type of exposure. See appendix D related to postexposure prophylaxis (PEP) assessment of risk.

Other References

1. OSHA Blood Borne Pathogens Final Standard (see next listed document)
2. *Bloodborne Pathogens Exposure Control Plan*
3. Hepatitis (types B and C)—(see materials from ALF and CDC)
4. IC bulletin board messages on hepatitis (check with Infection Control Coordinator)
5. Graphs of AIDS incidence and mortality rates (DC, FL and US) available from the Central Office Clinical Contract Monitor- Public Health at 850-717-3236