

Bloodborne Pathogen Information for the Exposed Health Care Worker

What are bloodborne pathogens?

Bloodborne pathogens are pathogenic microorganisms (e.g. viruses) that can be transmitted through contact with blood and other body fluids. The most important viruses affecting health care workers exposed to blood and body fluids are human immunodeficiency virus (HIV), hepatitis B, and hepatitis C.

HIV is a virus that can be acquired by sharing blood or by sexual contact with infected people. The initial symptoms of infection with HIV may be minimal, but may include fever, enlarged lymph nodes, sore throat, or a rash. The virus remains in the body and multiplies,

causing damage to the immune system, the body's defense system against infection. At this time there is no vaccine to protect against HIV infection.

Hepatitis B virus causes a hepatitis, or inflammation of the liver. It is spread in the same way as HIV, blood and sexual contact. The usual symptoms are jaundice (yellowing of the skin or eyes), fatigue, nausea, and stomach pain. Often the disease will be so mild that people may not know they have had the illness. Rarely, the disease is severe enough to cause liver failure and death. About 10% of people who get the disease will become chronic carriers of the virus. They can develop chronic liver disease such as cirrhosis and they can infect other people by sharing blood through sexual contact. There is a vaccine that can protect people from getting this disease; this vaccine is safe and very effective.

Hepatitis C is an inflammation of the liver caused by the Hepatitis C virus. It is spread mainly through blood contact, although there is a small chance of infection with sexual contact. Like other forms of hepatitis, the symptoms range from none at all to jaundice (yellow skin), fatigue, loss of appetite, and stomach pain. The initial infection with Hepatitis C may cause very mild symptoms; the risk of the disease becoming chronic is much greater than with Hepatitis B. Up to 50% of people with Hepatitis C will have chronic disease that may lead to cirrhosis. There is currently no vaccine against Hepatitis C.

The risk of becoming infected with bloodborne pathogens depends on:

- The type of exposure (transfusion, needle stick, splash)
- How much virus is in the blood or body fluid of the source
- The ability of that particular virus to cause infection

For example, a transfusion with a pint of blood would carry much more risk than a stick from a needle used to draw blood. A splash to mucous membranes, such as eyes or lips is generally less of a risk than a needle stick. The source may be more infectious if (s)he has a lot of the virus in the blood. For example, "hepatitis B virus" is much more infectious than either "hepatitis C virus" or HIV. **A health care worker cannot be infected with any bloodborne pathogen if the source of the exposure does not carry the virus.** Most of the occupational exposures that occur do not carry the risk of infection by any of the viruses mentioned.

Healthcare workers who have received Hepatitis B vaccine and developed immunity to the virus are at virtually no risk for infection. **For a susceptible person, the risk from a single needlestick or cut exposure to HBV- infected blood ranges from 6-30%. For Hepatitis C, the average risk for infection after a needlestick or cut exposure to HCV-infected blood is approximately 1.8%.** The risk following a blood exposure to the eye, nose or mouth is unknown, but is believed to be very small; however, HCV infection from a blood splash to the eye has been reported. **For HIV, the average risk of HIV infection after a needlestick or cut exposure to HIV-infected blood is 0.3% (about 1 in 300). The risk after an exposure of the eye, nose or mouth to HIV-infected blood is estimated to be on average, 0.1% (about 1 in 1000).**

The most important thing to remember is that the risk of getting HIV or hepatitis C from a needlestick or other exposure is quite small. As an example, there were 57 documented cases and 138 possible cases of occupationally acquired HIV infection among healthcare personnel in the United States since reporting began in 1985. No new documented cases of occupationally-acquired HIV/AIDS have been reported since December 2001.

What if the source patient's blood tests are negative?

If your exposure was very low risk, based on the source's blood work and the type of exposure, you may choose not to complete follow up blood work. If your exposure was high risk for a bloodborne pathogen, your medical provider will counsel you regarding appropriate follow up. Any acute illness with fever, sore throat, rash, enlarged lymph nodes, or jaundice that occurs within six months after an exposure should be reported to your health care provider.

HIV Post-Exposure Risk-reduction:

- use condoms to prevent potential sexual transmission
- avoid pregnancy and breastfeeding
- avoid needle-sharing
- refrain from donating blood, plasma, organs, tissue, or semen

Hepatitis B Post-Exposure Risk-Reduction:

- HBV vaccination is advised for all non-HBV-immune persons.
- household, sex, and needle-sharing contacts of HBsAg-positive individuals should be identified and vaccinated according to the guidelines for patients exposed to known HBsAg-positive individuals
- refrain from donating blood, plasma, organs, tissue or semen.
- avoid alcohol and, if possible, medications that may be toxic to the liver

Hepatitis C Post-Exposure Risk Reduction: Currently, no effective prophylaxis for hepatitis C virus infection has been identified. However, if you are infected or become infected with hepatitis C, the virus can often be treated successfully by taking medication.

- avoid blood-to-blood contact, including sharing personal care items that may come in contact with another person's blood, such as razors or toothbrushes and sharing needles, syringes, or other equipment to inject drugs
- refrain from donating blood, plasma, organs, tissue or semen
- there may be risk of transmission with sexual activity