

Environmental Health and Safety

Consulting Training Service



Modes of Transmission

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.

Unbroken skin forms an impervious barrier against BBPs, but infected blood can enter your system through open sores, cuts, acne, or even broken skin from sunburn or blisters. BBPs may also be transmitted through the mucous membranes of the eyes, nose, and mouth.



Protecting Against Exposure

It is extremely important to use personal protective equipment and safe work practices to protect yourself from BBPs.

Universal precautions is a prevention strategy in which all blood and OPIM 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 BBPs, *you treat it as if it is*. This approach is used in all situations where exposure to blood or OPIM is possible.

In addition, one of the most effective means of preventing the spread of infection is to wash your hands thoroughly and regularly, especially before eating and after using the restroom.

Getting Assistance

For more information about bloodborne pathogens or upcoming training programs for “at-risk” employees, contact EH&S.



Environmental Health & Safety

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Bloodborne Pathogens Preventing Transmission



World Class. Face to Face.

Think Safety. Act Safely!

Bloodborne Pathogens

Bloodborne pathogens (BBPs) are microorganisms such as viruses or bacteria that are carried in blood and can cause disease in humans. If you can reasonably anticipate facing contact with human blood and/or other potentially infectious materials as part of your job duties, you should receive additional training from your supervisor, including an opportunity to ask questions.

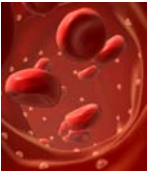
There are many different BBPs, and although this material will focus on hepatitis and Human Immunodeficiency Virus (HIV), it is important to know which BBPs you may be exposed to as part of your work duties, especially in laboratories.

Blood and OPIMs

Pathogens may be found not only in human blood, but also in other potentially infectious materials including:

- blood products (e.g., plasma, serum)
- semen and vaginal secretions
- cerebrospinal fluid
- pleural fluid (lung fluid)
- synovial fluid (fluid from joints)
- amniotic fluid (uterine fluid)
- peritoneal fluid (fluid in body cavity)
- saliva in dental settings
- any body fluid that is visibly contaminated with blood and
- any unknown body fluid.

Other items found in the laboratory setting also considered OPIM include:



- any unfixed tissue or organ, other than intact skin, from a living or dead person
- cell or tissue cultures that may contain blood borne pathogens
- organ cultures and culture medium.

Urine, feces, vomit, tears, sweat, sputum, and nasal secretions are not expected to be infectious sources of BBPs unless they are visibly contaminated with blood.

Although these body fluids don't currently require special handling, good personal hygiene practices are highly recommended when handling these materials.



BBP Symbol

Biohazard warning tags or labels must be used to identify containers of infectious materials, infectious waste, and refrigerators, freezers, and incubators where biohazards are located.

Labels/containers should be all or mostly fluorescent orange or orange-red with lettering and symbol in a contrasting color and are attached to the container by string, wire, adhesive, or other method so they can't become lost or accidentally removed.

Hepatitis B (HBV)

Hepatitis B (HBV), a virus that infects the liver, is transmitted primarily through "blood to blood" contact. Initially the symp-



toms are "flu-like", including fatigue, stomach pain, loss of appetite, and nausea. As the disease continues to develop, jaundice (a distinct yellowing of the skin and eyes), cirrosis, and liver cancer may result. Although there is no "cure" or specific treatment for HBV, safe and effective vaccines are available.

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 the primary concern for employees such as housekeepers, custodians, laundry personnel and other employees who may come in contact with blood or potentially infectious materials in a non first-aid or medical care situation.

Human Immunodeficiency Virus (HIV)

AIDS, or acquired immune deficiency syndrome, is caused by the human immunodeficiency virus (HIV). 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.

The HIV virus is very fragile and will not survive very long outside of the human body. It is primarily of concern to employees providing first aid or medical care in situations involving fresh blood or OPIM. Because it is such a devastating disease, all precautions must be taken to avoid exposure.

