



# PARTNER UPDATE

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## WORK PARTNERS

OCCUPATIONAL HEALTH SPECIALISTS

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May 2018

## Bloodborne Pathogen Exposure

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It has been estimated by the CDC that around 5.6 million workers in the health care industry and related occupations are at risk of occupational exposure to bloodborne pathogens. While healthcare workers may possess the higher risk of exposure, there are also various other occupations which place individuals at risk, such as a police officer patting down a suspect with a concealed syringe, or a housekeeper who accidentally comes across a used needle while cleaning.

Bloodborne pathogen exposure occurs in one of two ways: a percutaneous injury in which the worker is injured by a sharp object (for example, a needle stick or sharp object which breaks the skin), or through contact of open wound or mucous membrane (the pink, moist tissue that lines your mouth, nose, and eyes) with blood, tissue, or other potentially infectious bodily fluids.

### **What is a bloodborne pathogen?**

Bloodborne pathogens are infectious microorganisms within blood or other body fluids which may ultimately lead to disease. The three main bloodborne pathogens that workers are at risk of being exposed to are hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). Body fluids, other than blood, with the potential for harboring these bloodborne pathogens include: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, and body fluid that is visibly contaminated with blood. Body fluids such as feces and sweat have been shown to contain low quantities of HBV, but they are not considered infectious unless they contain visible blood.

### **What is the risk of transmission with each bloodborne pathogen after occupational exposure?**

**HBV:** While HBV is highly infectious through exposure to infected blood or other contagious body fluids, there are multiple factors that determine the level of risk in transmission. If the individual exposed has received the hepatitis B vaccine series and has confirmed immunity to the virus, there is essentially no risk for infection. If the exposed individual does not have immunity, their chances of infection depend largely on the viral load of the source individual (or the amount of virus present in the source's blood). Risk of developing clinical hepatitis after exposure ranges from 1 to 31 percent.

Despite the highly infectious nature of HBV, the number of HBV infections has dramatically decreased by approximately 98 percent, from an estimated 17,000 infections in 1983 to only 263 HBV infections reported in 2010 in the healthcare setting. This is primarily due to the widespread immunization of health care workers with hepatitis B vaccine.

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**HCV:** After a needle stick or sharps injury with exposure to infected blood from an HCV-positive source, it has been found that the average risk of infection is approximately 1.8 percent. Unfortunately, unlike HBV, there is no vaccination or pre-exposure prophylaxis for HCV.

**HIV:** The risk of transmission of HIV is much lower when compared to the risk of transmission of HBV and HCV. The estimated risk of HIV infection after sustaining a sharps injury with exposure to infected blood from an HIV-positive source is about 0.33 percent (or 1 in 300). In other words, 99.7 percent of needle stick or sharps injury exposures do not lead to infection with HIV. The risk after exposure of the eye, nose, or mouth to HIV-infected blood is estimated to be 0.1 percent (or 1 in 1,000).

### **I have sustained an injury and possible exposure, what is the next step?**

Immediately following possible exposure after a needle stick or sharps injury, one should thoroughly wash the exposed area with soap and water. For puncture wounds and small cuts, cleaning the area with an alcohol-based hand hygiene product may be beneficial. If the injury involves exposure of mucous membranes to potentially infected blood or bodily fluids, one should irrigate copiously with water or saline.

After this initial step of cleaning the exposed area, the exposed individual should then promptly report the incident and seek immediate evaluation and treatment with a healthcare provider. As post-exposure treatments are time-sensitive and may be advised, it is important for timely reporting and presentation for evaluation and said treatment.

### **What is the timeline for treatment and follow-up visits?**

**Baseline Visit:** At this initial, or baseline, visit the healthcare provider will conduct a thorough evaluation to determine the risk of the possible bloodborne pathogen exposure. The level of risk is largely dependent on 3 factors:

1. The nature or type of injury sustained. (For example, saliva with no visible blood exposed to the eyes of the worker poses far less risk than a worker who sustains a needle stick injury with a needle visibly contaminated with blood.)
2. Whether or not the source individual is known to have previous infection with HBV, HCV, or HIV. Or if the source's status is unknown, whether or not they are known to be a "risky individual" (for example, history of IV drug use).
3. Whether or not the exposed worker has been effectively vaccinated and has confirmed immunity (this only pertains to protection against HBV).

If it is determined that there is sufficient risk to the exposed worker, the healthcare provider will proceed with the

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“Bloodborne Pathogen Exposure Protocol.” Firstly, the healthcare provider will counsel the exposed worker on whether or not it is appropriate for the worker to receive post-exposure treatment for HBV or HIV. Unfortunately, there is no post-exposure or prophylactic treatment for HCV. Secondly, a baseline blood draw will be performed to obtain laboratory studies on the exposed worker to confirm HBV immunity, as well as to rule out the presence of any pre-existing infection. Ideally, baseline blood work is also obtained from the source individual to ascertain whether they are infectious.

### **Follow-up Visits**

Subsequent follow-up visits may vary from individual to individual based on their level of risk, but all exposed workers proceeding with the Bloodborne Pathogen Exposure Protocol will return at 6 weeks, 3 months, and 6 months for repeat blood draws. If the source individual is known to be co-infected with HIV and HCV, then the exposed worker will also return for a 1-year follow-up for final blood draw. Additional visits may be required if the exposed worker requires the hepatitis B vaccination series, or if they do in fact start prophylactic treatment for HIV or HBV. If after the final blood draw all lab results come back negative, the exposed worker has completed the bloodborne pathogen protocol with no further testing or treatment required.

### **What can be done to prevent occupational exposures?**

Ultimately, prevention of occupational exposures to blood and infectious bodily fluids in turn prevents transmission and infection with HBV, HCV, and HIV. In the healthcare setting, prevention is best achieved by using appropriate personal protective equipment and barriers such as gowns, gloves, and eye protection where appropriate, as well as safely handling needles and other sharp instruments. Needle stick injuries and other cuts can be prevented by using safer techniques, such as disposing used needles in appropriate sharps disposal containers with caution, and avoiding recapping needles by hand.

### **WorkPartners Occupational Health Specialists**

Located in North San Diego County, WorkPartners clinics are full service Occupational Health clinics dedicated to supporting the health and wellness of local employees. Learn more at [www.WorkPartnersOHS.com](http://www.WorkPartnersOHS.com).