

Bloodborne pathogen exposure response guidance

Bloodborne pathogen testing in Utah

Exposures to bloodborne pathogens (BBP) can occur in many occupations and situations. Healthcare workers, emergency response and public safety personnel, good Samaritans, and other people can be exposed to blood through needlesticks, mucous membranes, and skin exposures. The pathogens of primary concern following these exposures are hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). In most situations, BBP exposures should be evaluated through occupational health or a private provider. However, the Utah Department of Health and Human Services (DHHS) and the Utah Public Health Laboratory (UPHL) have the capability to support testing for these pathogens of concern following an exposure event with DHHS Office of Communicable Diseases approval if the exposure source was from a deceased individual.

Definitions

- **Source:** Person whose blood came in contact with other people.
- **Exposure:** Contact with blood from another individual through a portal of entry. This can include direct contact of blood percutaneously, with a mucous membrane, or with non-intact skin. Contact with skin that is intact, without cuts or abrasions, is not considered an exposure.
- **Human immunodeficiency virus (HIV):** A virus that attacks the body's immune system, specifically the white blood cells (CD4), that is spread through blood, semen, or other bodily fluids.
- **Hepatitis B virus (HBV):** A vaccine-preventable liver infection causing liver inflammation that is spread through blood, semen, or other bodily fluids.
- **Hepatitis C virus (HCV):** A liver infection that causes inflammation and is spread through blood.
- **Post exposure prophylaxis (PEP) for HIV:** Medication taken after a possible HIV exposure to prevent infection. HIV PEP must be taken within 72 hours of exposure.
- **Post exposure prophylaxis (PEP) for HBV:** Hepatitis B Immune Globulin (HBIG) to be taken after HBV exposure to prevent infection if exposed lacks immunity. HBV PEP must be taken as soon as possible.
- **HCV Ab:** Detects antibodies to HCV in the blood and indicates presumptive HCV infection.

- **HCV NAT:** Detects the presence of HCV in the blood and indicates current infection with HCV.
- **HIV 1 and 2 Ab:** Detects the presence of HIV 1 and HIV 2 antibodies produced in response to HIV infection.
- **HIV antigen:** Detects the presence of HIV antigen.
- **HBV surface antigen (HBsAg):** Detects the presence of HBV in the blood and indicates that a person is infectious.
- **HBV core antibody (HBcAb):** Detects antibodies to HBV in the blood and indicates previous or ongoing infection with HBV.

Public health guidance and recommendations

While public health can provide guidance and recommendations, it is suggested exposed persons seek medical counsel from a licensed medical provider.

1. Assess the BBP exposure risk. If no true exposure occurred (see exposure definition above), no further action is required.
2. Evaluate source (if known)
 - a. Review HIV, HBV, and HCV status in EpiTrax, if available.
 - b. If available, conduct HIV 1 and 2 Ab, HIV antigen, HBsAg, and HCV Ab testing. See the section below on compelled bloodborne pathogen testing for more information.
3. Recommend HIV, HBV, and HCV testing for exposed, as needed and recommend PEP based on available laboratory results:
 - a. HIV testing/PEP:
 - i. If source tests positive, recommend HIV PEP within 72 hours of exposure and test exposed for HIV 1 and 2 Ab at 6 weeks and 3 months.
 - ii. If source tests negative, HIV PEP is not recommended.
 - iii. If source has unknown HIV status: The administration of HIV PEP for exposures to an unknown source should be assessed on a case-by-case basis based on the exposure risk by an infectious disease expert. HIV transmission risk is low (<1%), however, if consultation is not available within 72 hours of exposure it is recommended that HIV PEP be started.
 - iv. HIV PEP can be discontinued if source is found to be negative for HIV or if it is later determined that HIV PEP is not warranted.
 - b. HBV testing:
 - i. If source tests HBsAg negative: no HBV testing for exposed is needed.
 - ii. If source tests positive or HBV status is unknown:

1. Determine exposed immune status for HBV by either testing the person for HBsAg, HBsAb, and HBcAb or obtaining documentation showing previous positive response to a complete HBV vaccine series, indicated by post-vaccination HBsAb titer ≥ 10 mIU/mL.
 2. If exposed lacks sufficient immunity, recommend HBV PEP (HBIG) and vaccination series.
- c. HCV testing:
- i. If source has negative HCV RNA test: no HCV testing for exposed is needed.
 - ii. If source has positive HCV RNA test or has unknown HCV status:
 1. Test exposed for HCV RNA 2 weeks after exposure
 2. Test exposed for HCV antibody 12 weeks after exposure

Additional guidance and recommendations for testing and PEP can be found [here](#).

BBP testing through UPHL

UPHL will conduct testing on specimens only when the source has died. When an approved exposure event is identified, the DHHS coordinates with the requesting entity and local health department to collect necessary information about the exposure event and provide information about sample collection for the exposed and/or source(s). The UPHL performs the following tests on all samples submitted for BBP testing, unless otherwise requested:

- HCV Ab
- HCV NAT (if HCV Ab positive)
- HIV 1 and 2 Ab and HIV antigen
- HBsAg
- HBcAb

When submitting a sample to UPHL for BBP testing, the requesting entity should use the following guidelines:

- Collect 7 mL of blood in a serum separator tube (yellow, tiger, or red top tube)
- Sample should be kept refrigerated and transported to UPHL within 3 days of collection
- At minimum, label sample(s) with individual's name, DOB, and collection date
- Complete the [UPHL Infectious Disease Test Request Form](#) and, if requested, the OME's [Bloodborne Pathogen Exposure Testing Request Form](#). These forms should accompany the sample to UPHL.

Possible exposure scenarios:

Occupational exposure: Public Safety/Emergency Medical Services may call regarding occupational exposure to body fluids, chemical or biological agents. Collect the minimum information and assess who would best be able to assist with the situation. For example, if it is a BBP, please contact Ethan Farnsworth (Ph: 801-538-6227/email: efarnsworth@utah.gov). Occupational exposures are typically handled internally according to the agency's exposure control plan. However, public health can assist with post-exposure prophylaxis (PEP) recommendations.

If the caller does not have an occupational health process at their agency, the exposed should seek testing through their healthcare provider (See **good Samaritan** scenario).

Good Samaritan: Good Samaritan BBP exposures can occur when a person assists an individual in their time of need outside of any occupational duties and are exposed to blood or other body fluids. The Good Samaritan will need to go to their healthcare provider for testing. However, public health can assist with PEP recommendations by providing the BBP status of the source, if known. Upon request, (see [R386-702-8; Confidentiality of Reports](#)) the BBP infection status of the source can be provided from EpiTrax to the healthcare provider of the good Samaritan to support PEP decision-making.

Office of the Medical Examiner or deceased case BBP exposure: First responder, occupational, and good Samaritan BBP exposures may result in a need to conduct BBP testing on a deceased individual. The exposed good Samaritan or employee will need to go to their healthcare provider for testing. In this situation, a BBP exposure testing request must be submitted to UPHL from the healthcare provider of the exposed. Every effort should be made to obtain this form before testing is approved, however some circumstances may require the form to be obtained after testing, therefore testing approval timing can be assessed on a case-by-case basis. The form is located on the [OME website](#).

Upon request (see [R386-702-8; Confidentiality of Reports](#)), the BBP infection status of the source can be provided from EpiTrax to the healthcare provider of the exposed good Samaritan or employee to support PEP decision making.

Compelled bloodborne pathogen testing:

If the source is living and refuses or is unable to consent to testing, that person may be court-ordered to comply in certain situations. It is the law enforcement agency's responsibility to obtain such an order from a district court. Once received, DHHS facilitates the testing and reporting of results. **Please refer to statutes [78B-8-401](#) and [78B-8-402](#) for further details.**