MidAtlantic AIDS Education and Training Center

First Responders and Potential HIV Exposure

For events/situations that may involve blood and body fluids, it is critical for first responders to have knowledge of HIV transmission, occupational exposure intervention, post exposure prophylaxis, and the provision of patient linkage to applicable services.

HIV: The Basics: HIV is a virus that causes HIV infection and if not treated can lead to a lethal disease called AIDS.

- AIDS (Acquired Immunodeficiency Syndrome) presents as a loss of immune function in the body due to destruction of CD4 cells which can lead to various opportunistic infections and death.
- HIV is transmitted in **4 main ways: 1) Engaging in unprotected sex with person with HIV, 2) Sharing needles, syringes or "works" with a person with HIV, 3) Being exposed (fetus or infant) to HIV before or during birth or through breastfeeding, 4) HIV infected blood products.**
- In the body, HIV establishes infection rapidly, typically within **24 to 36 hours after an exposure**.
- HIV is a fragile virus and cannot live for long outside the body; as thus, HIV is not transmitted through casual contact such as shaking hands, hugging, sharing pencils/pens, etc..
- **Proven methods of HIV prevention include: 1) Sex with a condom, 2) Not sharing IV needles or syringes, 3) Taking pre-exposure prophylaxis (PrEP), 4) Once testing positive for HIV, rapid linkage of the patient to care for antiretroviral therapy (ART), 5) Screening of blood and blood products, 6) Use of standard precautions with all patients.**
- There is no cure for HIV, once a person is infected, the person is always infected. Advances in HIV treatment and care have changed HIV from a uniformly fatal disease to a chronic disease.

Signs and Symptoms of HIV

- Acute HIV may manifest as a flu-like illness.
- There may be no signs or symptoms of HIV disease for many years.
- You cannot tell by looking at someone if they have an HIV infection.
- The only way to know if a person has HIV is to test them.

Occupational Exposure to HIV

HIV is transmitted primarily by direct contact with infected blood, semen, rectal and vaginal fluids, and breast milk.

- There is no scientific documentation that HIV is transmitted by contact with sweat, saliva, tears, sputum, urine, feces, vomitus, or nasal secretions unless these fluids contain visible signs of blood.

Occupational exposure can take place in the following ways:

1. Percutaneous injury (e.g., needlestick injury)
2. Exposure to mucous membrane (e.g., splashing of fluid into eyes or mouth)
3. Contact with nonintact skin (e.g., cuts and wounds)

Protection for First Responders

Always follow Standard Precautions when managing a patient.

- With standard precautions, blood, semen, or other bodily fluids of all patients are considered potentially infectious for HIV.
- Make sure your vehicle is adequately stocked with needed PPE.
- Have gloves ready; keep in your pocket. If unavailable, use any plastic or other non-porous material as a barrier in an emergency.
- Wear eye/face protection during contact with aerosolized particles.
- Decontaminate work area and equipment during your shift.
- Practice safe sharps! Use needles with engineered safeties and/or needleless systems and do not recap needles.
- Dispose of needles and sharps immediately after use.
- Review and understand the policies and procedures concerning occupational exposures for your organization.

Risk Estimates of Transmission of Occupational Exposure to HIV	
Category of Infectivity	**Fluid**
Infectious Fluids	• Blood • Visibly bloody body fluids
Potentially Infectious Body Fluids	• Semen (& pre-seminal fluid) • Vaginal secretions • Cerebrospinal fluid • Synovial fluid • Pleural fluid • Peritoneal fluid • Pericardial fluid • Amniotic fluid
Not Considered Infectious (Unless Visibly Bloody)	• Saliva, vomitus, and feces • Nasal secretions and sputum • Sweat and tears • Urine

Exposures for which PEP is Indicated

- Break in skin by a sharp object that is contaminated with blood, visibly bloody fluid, or that has been in the source patient's blood vessel.
- A non-intact skin exposure to blood, visibly bloody fluid, or other potentially infectious material (e.g., abraded, chapped, or with dermatitis, etc.).
- Splash of blood, visibly bloody fluid, or other body fluid to a mucosal surface.

In the Event of HIV Occupational Exposure

- Immediately following an exposure to blood:
  - **Wash skin site of needlestick and cuts with soap and water**
  - **Flush splashes to the nose, mouth, or exposed mucous membrane with water**
  - **Irrigate eyes with clean water, saline, or sterile irrigants**
- No scientific evidence shows that using antiseptics or squeezing the wound will reduce the risk of transmission of bloodborne pathogens.
- Using a caustic agent such as bleach is not recommended.
- Prompt reporting as per workplace procedures is essential.
- Consult an emergency dept at a hospital to discuss the exposure to HIV or bloodborne pathogens (e.g., hepatitis) and the need for HIV post exposure prophylaxis (PEP).
- PEP depending on the exposure is recommended and should be **started as soon as possible (within 72 hours)**.

Treatment of HIV Occupational Exposure

- Studies show that the use of ART after occupational exposure (PEP) may reduce the risk of HIV transmission.
- For post exposure, the CDC recommends a 28-day course of a combination of ART.
- Drugs which are used to prevent HIV infection may have side effects; workers should be evaluated by a health care provider before starting PEP.
- First responder on PrEP do not need to start PEP when there is a potential exposure.

Each state has specific laws regarding HIV testing that prevent HIV testing without the patient's consent even if there is an exposure. Consult your Department of Health.

Important Numbers To Know

CDC Info Network: 800-232-4636

Contact your designated infection control officer/supervisor

Selected Websites for Further Reference

- Updated U.S. Public Health Service guidelines for the management of occupational exposures to HIV and recommendations for postexposure prophylaxis. https://stacks.cdc.gov/view/cdc/20711
- CDC HIV and Occupational Exposure. https://www.cdc.gov/hiv/workplace/healthcareworkers.html
- CDC HIV Guidelines. https://www.cdc.gov/hiv/guidelines/index.html
- AIDS Education & Training Center (AETC) National Coordinating Resource Center (NCRC). https://aidsetc.org/

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Please refer to the most recent guidelines
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References
HIV and Occupational Exposure. Division of HIV Prevention, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention. (2019)
Post-Exposure Prophylaxis (PEP). National Institutes of Health. (2024)
Kuhar DT, Henderson DK, Struble KA, et al. Updated US Public Health Service Guidelines for the Management of Occupational Exposures to Human Immunodeficiency Virus and Recommendations for Postexposure Prophylaxis. Infect Control Hosp Epidemiol. 2013;34:875-92.