


Kentucky Board of Emergency Medical Services

HIV/AIDS Education for EMS Providers

2021




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Introduction

[KRS 311A.120](#) Education and Continuing Education - states, as a condition of being issued a certificate or license as an emergency medical technician, advanced emergency medical technician, emergency medical responder, or paramedic, the applicant shall have completed a Kentucky Board of Emergency Medical Services-approved educational course on the transmission, control, treatment, and prevention of the human immunodeficiency virus and acquired immunodeficiency syndrome with an emphasis on appropriate behavior and attitude change.




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Objectives

Upon Completion, The Participant Will Be Able To:

1. Identify common Bloodborne Pathogens, their harmful effects and methods of transmission.
2. Describe protection measures for Bloodborne Pathogens.
3. Describe control and prevention methods of HIV and current recognized methods of medical treatment.
4. Understand the purpose of an Exposure Control Plan and its components.
5. Understand the training and recordkeeping requirements for employees.
6. Understand the importance of staying current on HIV/AIDS issues.




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Overview

Pathogen: A Microorganism That Can Cause Disease:

Examples of Illnesses that Pathogens Cause	
• Viruses	AIDS, Hepatitis B, colds, flu, Herpes
• Bacteria	Intestinal diseases, Tuberculosis, Gonorrhea
• Fungi	Athlete's foot, Farmer's lung, Asthma/allergies
• Parasites	Giardiasis, Malaria, Trichinosis




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Transmission of Diseases

Routes Of Transmission:

- **Inhalation**
Air
- **Ingestion**
Contaminated food, water
- **Contact**
Bloodborne




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Bloodborne Pathogens

Bloodborne Pathogens Are Microorganisms:

Present in **Blood** or **Other Potentially Infectious Material**




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Bloodborne Pathogens (Continued)
 Other Potentially Infectious Materials (OPIM):

- Semen
- Vaginal secretions
- Saliva (If blood is present)
- Breast Milk
- Body fluids such as:
 - Pleural
 - Cerebrospinal
 - Pericardial
 - Peritoneal
 - Synovial
 - Amniotic
- Any unfixed tissue or organ from a human (living or dead)
- HIV or HBV containing cultures, culture medium, or other solutions.
- Blood, organs, and tissues from animals infected with HIV, HBV, or other BBPs

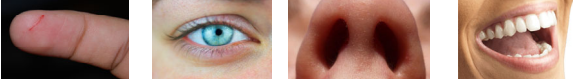



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Transmission of Bloodborne Pathogens
Bloodborne Pathogens Can Enter Your Body Through:

- A break in the skin (cut, burn, lesion, etc.)
- Mucus membranes (eyes, nose, and mouth)
- Sexual contact
- Other modes





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Transmission of Bloodborne Pathogens (Continued)
Risk Of Infection Depends On Several Factors:

- The pathogen involved
- The type/route of exposure
- The amount of virus in the infected blood at the time of exposure
- The amount of infected blood involved in the exposure
- Whether post-exposure treatment was taken
- Specific immune response of the infected individual



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Transmission of Bloodborne Pathogens (Continued)

Occupational Exposure:

- Means reasonably anticipated skin, eye, mucous membrane, or parenteral (piercing of the skin) contact with blood or OPIM that may result from the performance of an employee's duties

Exposure Incident:

- Is a specific contact with blood or OPIM that can transmit a bloodborne disease



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Bloodborne Pathogen Diseases

Some Examples Of Bloodborne Pathogens:

- Hepatitis B Virus (HBV)
- Hepatitis C Virus (HCV)
- Human Immunodeficiency Virus (HIV)
- Syphilis
- Brucellosis
- Malaria
- Leptospirosis
- Arboviral infection
- Relapsing fever
- Viral Hemorrhagic Fever
- Creutzfeld-Jakob Disease



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Viral Hepatitis

- Virus attacks liver
- Acute and chronic infections
- Possible liver damage ranging from mild to fatal



- The liver
 - A large, dark red gland located in the upper right abdomen behind the lower ribs
 - Removes waste products and foreign substances from the bloodstream
 - Regulates blood sugar levels
 - Creates essential nutrients



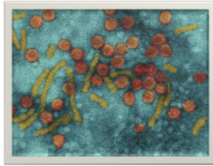
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Hepatitis B

General Facts:

- Hearty virus - can live for 7 days in dried blood
- 100 times more contagious than HIV
- In 2018, an estimated 3,322 persons in the United States were newly infected with HBV
- 826,000 million carriers
- 3,000 deaths/year
- No cure, but there is a preventative vaccine



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Hepatitis B (Continued)

Clinical Features:

Incubation period	Average 60-90 days Range 45-180 days
No sign or symptoms	30%
Acute illness (jaundice)	30%-50% (≥5 years old)
Chronic infection (carrier)	2%-10% (of infected adults)
- Premature death from chronic liver disease	15-25% (of chronically infected)
Immunity	Protected from future infection

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Hepatitis B (Continued)

Symptoms:

- Flu-like symptoms
- Fatigue
- Abdominal pain
- Loss of appetite
- Nausea, vomiting
- Joint pain
- Jaundice



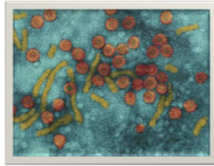

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Hepatitis B (Continued)

Transmission:

- Unprotected sex with multiple partners
- Sharing needles during injecting drug use
- From infected mother to child during birth
- Sharps/needle sticks



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Hepatitis B (Continued)

Vaccine:

- No cost to employee
- 3 shots: 0, 1, & 6 months
- Effective for 95% of adults
- Post-vaccination testing for high-risk HCW
- Post-exposure treatment (if not vaccinated)
- If decline, must sign Declination Form
 - Vaccine available at later date if desired



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Hepatitis C

General Facts:

- The most common chronic bloodborne infection in the U.S.
- 3.9 million (1.8%) Americans infected; 2.4 million chronically infected
- 57,500 new infections per year in 2019
- Leading cause of liver transplantation in U.S.
- No vaccine available
- New medication to treat for HCV have been approved in recent years




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Hepatitis C (Continued)

Clinical Features:

Incubation period	Average 6-7 weeks Range 2-26 weeks
No sign or symptoms Acute illness (jaundice)	80% ≤20% (Mild)
Chronic infection Chronic liver disease	75%-85% 10%-70% (most are asymptomatic)
Deaths from chronic liver disease	1%-5%
Immunity	No protection from future infection identified



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Hepatitis C (Continued)

Symptoms:

- Flu-like symptoms
- Fatigue
- Abdominal pain
- Loss of appetite
- Nausea, vomiting
- Dark urine
- Jaundice






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Hepatitis C (Continued)

Transmission:

- Injecting drug use
- Unprotected sex with multiple partners
- From infected mother to child during birth
- Sharps/needle sticks
- Blood transfusion and/or organ transplant before 1992 or from outside the U.S.

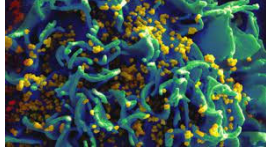
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Human Immunodeficiency Virus

General Facts:

- Fragile – few hours in dry environment
- Attacks the human immune system
- Cause of AIDS
- 1.2 million infected persons in U.S.
- No cure; no vaccine available yet

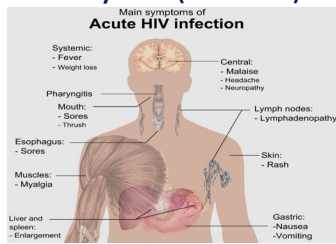


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Human Immunodeficiency Virus (Continued)

Clinical Features:



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Human Immunodeficiency Virus (Continued)

Transmission:

- Sexual contact
- Sharing needles and/or syringes
- From HIV-infected women to their babies during pregnancy or delivery
- Breast-feeding
- Needlesticks





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Human Immunodeficiency Virus (Continued)

Testing:

- The most common HIV tests use blood
- Tests using saliva or urine are also available
- All positive HIV tests must be followed up by another test to confirm the positive result.



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Human Immunodeficiency Virus (Continued)

Prevention:

- Not sharing needles
- Use Latex / polyurethane condoms
- Preventing occupational HIV transmission to healthcare workers.
- HIV screening for mother-to-child transmission

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Human Immunodeficiency Virus (Continued)

Post-Exposure Prophylaxis:

- Recommendations for HIV PEP include a basic 4-week regimen of two drugs
- For most HIV exposures: zidovudine [AZT or ZDV] and lamivudine [3TC]; 3TC and stavudine [d4T]; or didanosine [ddl] and d4T
- The drugs have demonstrated effectiveness in preventing the virus (79% or better) in those who received treatment within the initial 24 hours of exposure

WHAT IS PEP?
 PEP (or post-exposure prophylaxis) involves taking anti-HIV drugs **very soon after** a possible exposure to HIV to **prevent HIV**.





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Human Immunodeficiency Virus (Continued)

Consent To Test:

- KRS 214.625 - Consent for medical procedures and tests including HIV infection.

A person who has signed a general consent form for the performance of medical procedures and tests is not required to also sign or be presented with a specific consent form relating to medical procedures or tests to determine human immunodeficiency virus infection, antibodies to human immunodeficiency virus, or infection with any other causative agent of acquired immunodeficiency syndrome that will be performed on the person during the time in which the general consent form is in effect.



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Human Immunodeficiency Virus (Continued)

Confidentiality:

- No person who has obtained or has knowledge of a test result pursuant to this section shall disclose or be compelled to disclose the identity of any person upon whom a test is performed, or the results of the test in a manner which permits identification of the subject of the test, except to the following persons:
 - The subject's legally authorized representative;
 - Any person designated in a legally effective release of the test results executed prior to or after the test by the subject of the test or the subject's legally authorized representative;
 - A physician, nurse, or other health-care personnel who has a legitimate need to know the test result in order to provide for his protection and to provide for the patient's health and welfare;
 - Health-care providers consulting between themselves or with health-care facilities to determine diagnosis and treatment;
 - The Cabinet, in accordance with rules for reporting and controlling the spread of disease, as otherwise provided by state law;
 - A parent, foster parent, or legal guardian of a minor; a crime victim; or a person specified in KRS 438.250.



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Human Immunodeficiency Virus (Continued)

Reporting Requirements:

- By law, HIV and AIDS cases are to be reported by name to the Kentucky Department for Public Health within five (5) days of diagnosis.

- HIV/AIDS Branch (KYDPH)
275 E. Main St. HS2E-C
Frankfort, KY 40621
(502) 564-6539



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Human Immunodeficiency Virus (Continued)

American with Disabilities Act:

- Persons with HIV, symptomatic or not, have physical impairments that substantially limit one or more major life activities and are, therefore, protected by the law.
- People discriminated against because they are regarded as being HIV-positive are also protected. For example, a person who was fired based on a rumor that he had AIDS, even if he did not, would be protected by the law.
- The ADA protects Persons who are discriminated against because they are regarded as being HIV-positive are also protected. For example, the ADA would protect a person who is denied an occupational license or admission to a school based on a rumor or assumption that he has HIV or AIDS, even if he does not.



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Exposure Control Plan

Components:

- Exposure determination
- Exposure controls
- Training and Hazard Communication
- Hepatitis B Vaccine
- Post exposure evaluation & follow-up
- Recordkeeping



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Exposure Control Plan (Continued)

Reducing Your Risk:

- Universal precautions (or equivalent system)
- Equipment and Safer Medical Devices
- Training and Hazard Communication
- Work practices
- Personal protective equipment
- Housekeeping
- Laundry handling
- Hazard communication
- Regulated Waste





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Exposure Controls
Safe Work Practices:

- TREAT ALL HUMAN BLOOD AND OPIM AS IF KNOWN TO BE INFECTIOUS WITH A BLOODBORNE DISEASE
- Don't bend, recap, or remove needles or other sharps
- Don't shear or break needles
- Place contaminated reusable sharps immediately in appropriate containers until properly decontaminated

UNIVERSAL PRECAUTIONS





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Exposure Controls (Continued)
Safe Work Practices:

- Do not pipette or suction blood or OPIM by mouth
- Wash hands after each glove use and immediately or ASAP after exposure
- Remove PPE before leaving work area
- Do not eat, drink, smoke, apply cosmetics or lip balm, or handle contact lenses in any work areas where there is the possibility of exposure to blood or OPIM
- Clean-up of spills and broken glassware/sharps contaminated with blood or OPIM
 - Wear protective eyewear and mask if splashing is anticipated
 - Remove glass and other sharps materials using a brush and dustpan, forceps, hemostat, etc. Do not use your hands
 - Properly discard all materials into a sharps or puncture-resistant biohazardous waste container
 - Use paper/absorbent towels to soak up the spilled materials





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Exposure Controls (Continued)
Sharps Disposal Containers:

- Closable
- Puncture resistant
- Leak proof
- Labeled / color coded
- Upright, conveniently placed in area where sharps are used
- DO NOT OVERFILL!






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Exposure Controls (Continued)
 Environmental and Engineered Controls:

- Ventilation Hood
- Barrier Shields
- Sharps with engineered sharps injury protections (SESIP)
- Needleless systems
- Self-blunting needles
- Plastic capillary tubes






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Exposure Controls (Continued)
 Personal Protective Equipment (PPE):

- You must wear all required PPE. Your employer is required to provide you with the necessary PPE
 - Gloves – Nitrile type and utility for cleaning
 - Gowns - Full body type suits
 - Shoe Covers
 - Face Shields and eye protection
 - Resuscitation Devices

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Exposure Controls (Continued)
 Personal Protective Equipment (PPE):

- Remove gloves safely and properly
 - Grasp near cuff of glove and turn it inside out then hold in the gloved hand
 - Place fingers of bare hand inside cuff of gloved hand and turn inside out and over the first glove
 - Dispose gloves into proper waste container and clean hands thoroughly with soap and water or antiseptic hand rub product if handwashing facilities not available




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Exposure Controls (Continued)
Housekeeping:

- Maintain a clean and sanitary workplace
 - Written cleaning and decontamination schedule and procedures
 - EPA-Approved disinfectant; Bleach
 - Contaminated waste disposal methods
 - Contaminated laundry: (list items that are laundered)
 - Handle as little as possible






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Exposure Controls (Continued)
Communication of Hazards:

- Must have biohazard symbol
- Labels attached securely to any containers or items containing blood/OPIM
- Red bags/containers may substitute for labels
- Signs posted at entrance to specified work areas



Predominantly fluorescent orange or orange/red background


Lettering and symbol in contrasting color to background

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Exposure Controls (Continued)
Regulated Waste:

- Liquid or semi-liquid blood or OPIM
- Contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed
- Items caked with dried blood or OPIM that can release these materials during handling
- Contaminated sharps
- Biological waste containing blood or OPIM



Know Where To Throw

Biohazard Red Bag Waste

- ✓ Fluid Blood
- ✓ Hemovac
- ✓ Chest Drainage Units
- ✓ Suction Canisters
- ✓ Bags and IV Tubing

These Don't Go in Red Bag

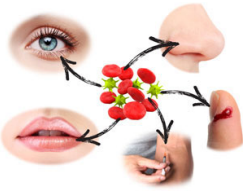

Sharps	Medication	Garbage
Garbage	Hazardious Waste	

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Exposure Incident
If You Have An Exposure Incident To Blood Or OPIM, Immediately Do The Following:

- Thoroughly clean the affected area
 - Wash needlesticks, cuts, and skin with soap and water
 - Flush with water splashes to the nose and mouth
 - Irrigate eyes with clean water, saline, or sterile solutions
 - Report exposure to supervisor present at scene or during time of exposure; fill out an Incident Report Form






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Post-Exposure Evaluation
Employer's Responsibility:

- Provide immediate post-exposure medical evaluation and follow-up to exposed employee:
 - At no cost
 - Confidential
 - Testing for HBV, HCV, HIV
 - Preventive treatment when indicated
 - Test blood of source person if HBV/HCV/HIV status unknown, if possible; provide results to exposed employee, if possible






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Post-Exposure Evaluation (Continued)
Employer's Responsibility:

- Provide exposed employee with copy of the evaluating health care professional's (HCP) written opinion within 15 days of completion of evaluation
- Provide employee with information about laws on confidentiality for the source individual
- Provide post-exposure treatment as needed, including counseling

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Recordkeeping
Medical and Training:

- Medical
 - Confidential
 - Hepatitis B vaccination and post-exposure evaluations
 - HCP's written opinions
 - Information provided to HCP as required
 - Maintain for length of employment 30+ years



- Training
 - Dates
 - Content summary
 - Trainer name and qualifications
 - Attendee's names and job titles
 - Maintain for 5 years




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HIV-AIDS Attitude and Behavior
Education:

- HIV-AIDS induced stigma and discrimination results from a lack of education and understanding the facts of HIV-AIDS
 - HIV-AIDS stigma drives acts of discrimination in all sectors of society, including health care, education, the workplace, the justice system, families, and communities
 - Breaking down HIV-AIDS stigma is a critical part of ending the HIV epidemic
 - Educate others to correct myths and stereotypes about HIV-AIDS
 - Keep up to date on the latest HIV-AIDS:
 - Statistics
 - Prevention
 - Treatment
 - Testing




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Questions?

- Please refer all questions to:
Robert G. Andrew, II
Director of Education & Training
Kentucky Board of Emergency Medical Services
2464 Fortune Drive, Suite 195
Lexington, KY 40509
(859) 256-3577
robert.andrew@kctes.edu



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